ordinary kitchen funnel. The free end is inserted into the meatus, while the patient is read to for ten or fifteen minutes twice daily. In a few cases he gave small doses of pilocarpin by the mouth, and he thought that improvement was afterwards more marked. Intra-tympanic operation, (such as the division of the incudo-stapedial articulation) is safe if under proper precautions, and should be recommended when a prolonged course of treatment produces no improvement of hearing, and the tinnitus remains distressing. No case, he thinks, should be pronounced beyond hope until we have tried the various means at command and continued treatment for some time—say at least four or six weeks—and then persisted for months if there is the least sign of improvement. *Dundas Grant.*

ASSOCIATION MEETINGS.

THE SOCIETY OF LARYNGOLOGY, OTOLOGY, AND RHINOLOGY, OF PARIS.

Meeting, November 6, 1891.

The Treatment of Tracheitis by Hot Inhalations of Menthol. By Drs. ALFRED MARTIN and LUBET-BARBON.

Though used by Rosenberg in the form of inhalations and intra-tracheal injections in oily solution, hot inhalations have not been sufficiently employed, although the drug is thus introduced into the air-passages without intermixture with any vehicle. For more than two years we have found it of excellent service in tracheitis, especially in cases where the patient suffers habitual irritation of the larynx and trachea, and where the pressure upon the latter is painful and provokes attacks of coughing. These attacks occur spontaneously, and are preceded by a kind of tickling, so that the patient can pretty accurately localize the seat in the laryngo-tracheal region. These tracheites are generally very persistent, and are reproduced by the slightest atmospheric variations. This is the weak point of some patients who appear to be "habitual coughers," and have simultaneously a rhino-pharyngitis. Laryngoscopically, the cords are seen to be slightly reddened, especially at the free edges; mucus is adherent in the inter-arytenoid region and subglottic region, which latter is often slightly swollen; the trachea is red, and exudation products can be seen along its walls. Inhalations of menthol are facilitated by the fact of the solid body being fused about 38°, and volatilized about 45°. The apparatus employed is of the simplest kind, consisting practically of a wide-necked flask, closed by a cork with two holes, through each of which passes a glass tube—one short, intended simply to carry air into the receiver; the other longer, and ending in a caoutchouc tube for insertion into the patient's mouth. The receiver is heated in a water bath, or by an alcohol flame, and white vapours of menthol soon fill the receiver, and can be drawn by inspiration along the caoutchouc tube. The first inhalations should be slowly taken, and the menthol should not be too highly heated, in order to avoid cough and suffocation. Two or three inhalations of about ten inspirations a time can be thus made during the day, employing a temperature so much the higher according as the disorder is more or less intense or rebellious.

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The Canal of Jacobson, and the possibility of recognizing it during life, and its probable rôle in the pathogenesis of certain lesions of the Nasal Septum. By Dr. POTIQUET.

This canal in the human subject represents vestiges of the organ of that name, an organ which attains its greatest development in certain mammals. In the sheep, for instance, it consists of a muco-membranous tube enclosing some branches of the olfactory nerve, and the tube is itself included in a cartilaginous covering, applied on each side of the nasal septum. In man the organ is only rudimentary, the cartilaginous covering being reduced to thin tongues or small portions of cartilage, known as the cartilages of Jacobson, or accessory cartilages of Sappey, which fold on each side the base of the quadrilateral cartilage and point of the vomer, and the muco-membranous tube is represented only by a canal, or *cul-de-sac*, of small extent, above these cartilages, and situated towards the inferior portion of the cartilaginous septum.

Described in man and figured by Fr. Ruysch,[1] then by S. Th. Soemmering, in his magnificent plates on the anatomy of the olfactory organ,[2] this little canal has been, since the discovery of the organ of Jacobson in mammals[3] (1811) described in man by J. W. Meckel,[4] and studied in the human embryo by Dursy.[5] In 1877, A. Koelliker made the organ of Jacobson in man the subject of a monograph,[6] and since then this little canal has been studied in the works or articles of Th. Koelliker,[7] Schwalbe,[8] Loewe,[9] Quain,[10] Zuckerkandl,[11] &c. It has not, so far as I know, been described in any French work. Neither Gratiolet,[12] nor Ch. Remy,[13] describe it in man.

Its existence in man is constant, says Soemmering. We cannot be so affirmative, at least so far as it concerns the adult or the aged. In some recent dissections (May, 1891) of eleven heads of adults or aged persons, of comparative freshness, it is true that we have found it eighteen times.[14] It is comparatively easy to find the orifice on the cadaver. When carefully washed, exposed to open daylight, placed in front, or inclined, the eye can scrutinize all the inequalities of surface, and by use of a probe in the region indicated a pretty large crypt can be discovered, which is no other than the canal sought for. In the head of the new-born infant of a few months old it is always found, often at the end of a little furrow which leads to it. It has appeared to us that in adults there was more chance of discovering it the younger the subject was. This is no doubt caused by the chronic lesions of the mucous membrane depending upon repeated coryzas, which probably with age lead to its obliteration.

I.

On the living subject it is a little different. Moldenhauer is, so far as we know, the only rhinologist who has endeavoured to recognize it, but his efforts were in

1. "Thesaurus anatomicus," Tome III., 1703.
2. "Abbildungen d. Mensch. Organe des Geruches," 1809.
3. "Annales du Museum d'Histoire naturelle," Tome XVIII., Rapport de Cuvier.
4. "Handbuch der Mensch. Anatomie," Tome IV.,1820, Cité par A. Koelliker.
5. "Zur entwickelungsgeschichte des Kopfes des Menschen, etc.," 1869.
6. "Ueber die Jacobodschen Organe des Menschen, etc.," 1877.
7. "Ueber das os intermaxillare des Menschen," 1882.
8. "Lehrbuch der Anatomie der Sinnesorgane," 1887.
9. "Monatsschrift für Ohrenheilkunde, 1886," et Congrès Internat. de Berlin, 1890.
10. Quain's "Elements of Anatomy," 9th edition, 1882.
11. "Real-Encylopædia der gesammten Heilkunde," 2te ed., 1888, Art. Nasenhöhle.
12. "Reserches sur l'organe de *Jacobson*," Thèse de Paris, 1845.
13. "La membrane muqueuse des fosses nasales," Thèse d'agrégation, 1878.

[14] We must thank M. Poirier, "Chef du travaux Anatomiques de la Faculté," for assistance in these researches.

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vain. "Although my attention had many times been directed to this point," says he, in speaking of the orifice of Jacobson's canal, "I have not been able to see it in the living subject.[15] He describes it as surrounded by a cushion, it is true; but if, in the adolescent and the adult, we believe the anatomical specimens which we have had presented to our eyes, and what we have seen in the adult, and if we trust the figures of the septum in which it is found represented (Soemmering, A. Koelliker, Schwalbe, Merkel[16]), this orifice presents itself rather

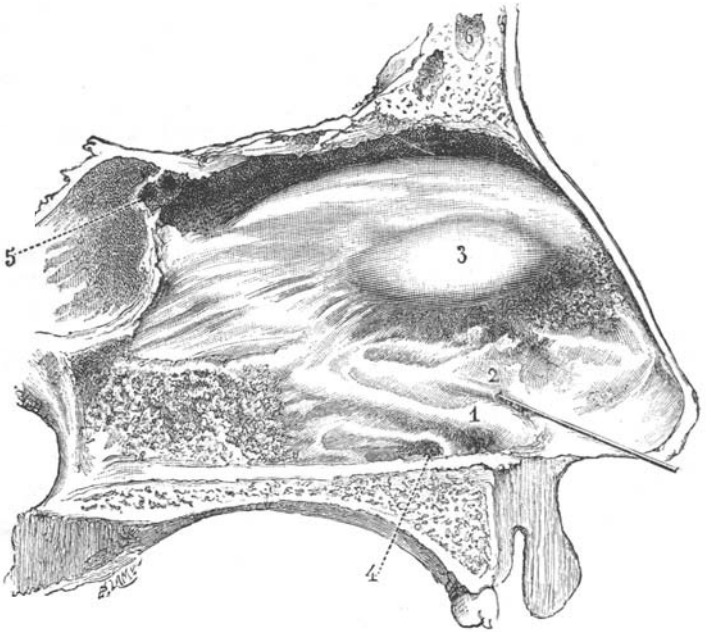


FIG. 1.—The Nasal Septum.*

1. Cushion partly constituted by Jacobson's cartilage.
2. Orifice of the canal of Jacobson with a probe introduced.
3. Tubercle of the septum.
4. Naso-palatine infundibulum.
5. Orifice of the sphenoidal sinus.
6. Frontal sinus.

as limited by a valve; the cushion seems only to exist in the young infant (see the figure in Ruysch's work), and if Moldenhauer was not able to discover it in the living subject, this is rather due to the error of seeking for a cushion as the distinctive point.

It is not, however, impossible to find the orifice of this little canal, which oftenest would scarcely deserve the name of *cul-de-sac* by reason of its small extent in the living subject. It is certainly less easy to find it than upon the cadaver, but with a little care, and sometimes with much patience, it can be found. It is necessary to know where to look for it. It is situated above the cushion running from

[15] "Maladies des fosses nasales" (Ouvrage traduit par nous), 1888, p. 13.

[16] Figure copied from Merkel by Zuckerkandl, *loc. cit.*

* The septum here figured was chosen from a man about forty years of age. The little subseptal piece of skin depending from the septum and part of the upper lip, which was absent in the specimen, have been replaced schematically. The distance of the orifice of Jacobson's canal from the angle of the membranous septum and the upper lip is less than the real distance.

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before backwards, which, constituted in good part by the cartilages of Jacobson, occupies the anterior inferior portion of the septum (Fig. 1). From Koelliker's measurements, it is on the average situated 8·5 mm. from the floor of the nasal fossa, and 24 mm. from the angle formed by the membranous septum and the upper lip, and it is about 1 mm. in size. The length of the canal directed from before backwards and a little upwards may be about 9 mm. (Schwalbe), but it measures on the average only 4 mm. These are only average measurements, but the canal of Jacobson may open a little in front of or beyond these figures. A lozenge-shaped space may be circumscribed upon the septum (Fig. 2, *a*, *b*, *c*, *d*), measuring 7 mm. from above downwards, 8 mm. from front to back, in which is nearly always found the orifice, but Koelliker's measurements were only conducted on eighteen subjects.

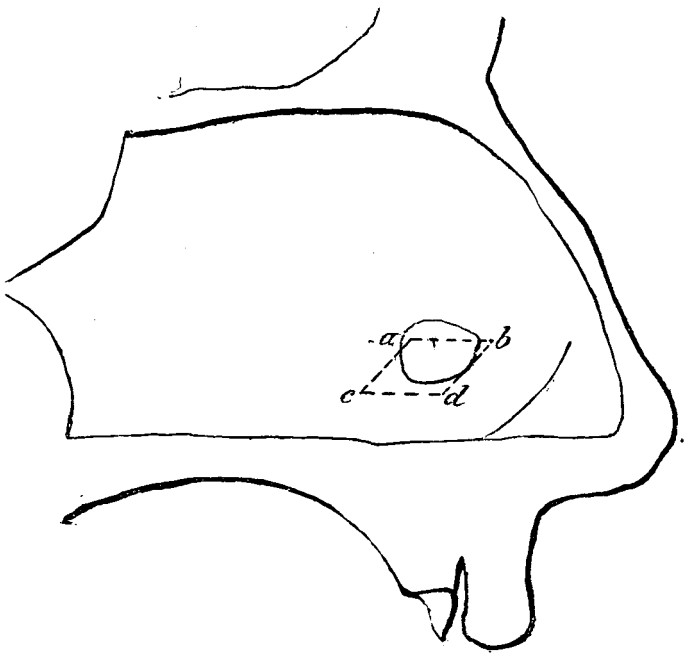


FIG. 2.—Diagram of a perforated Nasal Septum (? perforating ulcer) found in a subject aged about sixty.*

Our researches on the cadaver have taught us that the canal of Jacobson is pretty symmetrically placed right and left, on the same subject, equidistant above the floor of the nasal fossæ. But its length, and also the distance which separates its orifice from the nostrils, and its situation antero-posteriorly, are subject to variations on one side or the other. This equidistant position from the floor of the nasal fossæ on the right and left on the same subject is a circumstance which may greatly facilitate the discovery of the orifice on one side, when it has already been found on the other side, and from a pathological point of view it constitutes an important fact.

From the facility with which it is found in the cadaver, it is surprising how

* The lozenge figured *a*, *b*, *c*, *d*, approximately represents the space in which the orifice of the anal of Jacobson was found in eighteen subjects, according to the measurements of A. Koelliker.

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difficult it is to recognize the orifice of the canal of Jacobson in the living subject, but in the latter the conditions of research are different and unfavourable.

For the clear perception of details, no illumination is equal to that of direct solar light. But in these climates we have to rely upon artificial light, which changes the colour of objects, and darkens their contours. Anterior rhinoscopy, too, as commonly practised, presents the septal mucous membrane in an oblique fashion instead of in a direct plane, as in the cadaver, and slight conditions leading to movements of the surface line of the orifice. The membrane is often covered also with desiccated layers of mucus, or masses of epithelial *débris*. The cartilaginous septum, especially in its inferior aspect, often also has an irregular configuration, and especially a slight vertical undulation at this spot, rendering exploration with the probe or naked eye difficult. Where possible, illumination should be effected with a plane reflector by solar light, but this can only exceptionally be done. The speculum should be used so that the zone sought should be as little oblique as possible. A cotton wad on a probe will rid the septum of mucus, but this should be done very gently. The experience and patience of the rhinoscopist will enable him to overcome the obstacles presented by irregularities of the septum. The narrowness of the orifice of the canal and the shortness of its course increase the difficulty of finding it, and, although the rhinoscopist must often pass the probe over this very region, its accidental entry into the canal is prevented by the fact of the probe commonly used being too large. Even in the most favourable cases the naked eye can scarcely more than suspect the orifice of the canal, which presents merely a spot a little darker than the rest, a slight depression, or a suddenly ending furrow, leading to the canal. For probe exploration, a very fine probe, about $\frac{6}{10}$ths mm. in thickness, is lightly pushed into the supposed orifice, and if it penetrates from 3 to 4 mm. or more into the mucous membrane we may be sure of being in the canal of Jacobson. Its introduction is generally quite painless ; its withdrawal may be followed by a little drop of blood. If the probe glides over the surface of the mucous membrane without penetrating it, and there is nothing in the neighbouring parts to attract attention, search must be made with the extremity of the probe from before backwards in the zone indicated previously (Fig. 2), or even a little outside of it, particularly above the Jacobsonian cushion.

If the narrowness of Jacobson's canal makes its research difficult, the shortness of its course, often only 2 mm. (A. Koelliker), may often leave in suspense the true significance of the cleft into which the probe enters. Morphologically, Jacobson's canal is after all only a crypt in the mucous membrane, but a crypt larger and deeper generally than those which are found in the mucous membrane of the portion of the septum subjacent to the *tuberculum septi*. Though comparatively easy to determine with the naked eye on the cadaver, it is not so easy to say whether the probe is entering the canal, or only a crypt. But although having in man no connection with Jacobson's cartilage, it is seen in the cadaver, and certain cases in the living subject, to be adjacent to the cushion which the cartilage helps to make at the base of the septum, or at a very little distance above it, at the region where vertically and transversely the membrane is of the greatest degree of thinness. The canal may be obliterated. From February to August, 1891, our experiments, made upon a little over two hundred subjects, have caused us to recognize the canal in one hundred cases, or about once in four or five investigations. Since Czermak, Voltolini, and Duplay, it cannot be denied that the pathology of the nasal cavities has been proportionate to the perfection of the methods of exploration. We are convinced that many lesions occupying the region of Jacobson's canal and the canal itself can now be recognized, which before would have been unrecognized. We have thus recognized a small, elongated

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cicatrix at this point in a syphilitic subject who had been for long under examination, and which was seen only after our attention had been directed to this region. In syphilis especially one is struck with the frequency with which a perforation of the septum is found in evolution, and the extreme rarity with which ulcerative syphilides are observed at this point, of which the perforation is often only the consequence.

It is possible that repeated probings may lead to obliteration of the canal, but as it is not necessary to the organism this is not followed by any harmful consequences.

II.

Moldenhauer remarks, "The organ of Jacobson has of itself no pathological importance." Many reasons and some experiments made particularly at the Saint-Louis Hospital[17] incline us to dissent from this statement.

It is a hardy assumption to make that because an organ exists only as a vestige it has no pathological importance. These organs, such as the ileo-cæcal appendix, do not offer the greatest resistance to morbid processes. The comparative frequency of appendicitis is well known. It is worthy of remark that the most important part of the septum, from a pathological point of view, and the part where is the greatest predilection for morbid processes, of whatever kind, is precisely that which shelters the canal of Jacobson. At that spot are situated the ulcerative syphilides described by Michelson, perforations due to the same cause, the perforating ulcer described by Weichselbaum, Voltolini, Hajek, etc.; that is the place of origin by preference of recurrent epistaxis, and at that spot do lupoid neoplasias occur with but little known frequency in the course of lupus of the face, and also the perforations to which they give rise—the nodules of leprosy, and the subsequent losses of substance, and the perforations which occur in the course of certain infectious diseases, *e.g.*, typhus and typhoid fever.

A glance at Fig. 2 is particularly instructive.

If on this septum—[perforated by an unknown process (perforating ulcer? or syphilis? which was found by us in the cadaver of a man, aged about sixty]—we take the maximum and minimum distances noted by A. Koelliker, from the floor of the nasal fossa to the orifice of the canal of Jacobson, on the one hand, and from this same orifice to the angle formed by the membranous septum with the upper lip on the other hand, there will be obtained the lozenge traced in the figure, and which we have previously spoken of as "the zone of research." Is not the superposition of this zone and of the perforation of the highest interest, and of great suggestiveness?[18]

For this particular localization of morbid processes in a determinate region of the septum no explanation has yet been offered. It has been said that perforations of the septum owe their occurrence at this spot to the greater thinness of the cartilage. But this does not tell us why the initial lesion occurs at this spot in preference to any other. May not the canal of Jacobson have something to do with it? In considering the course of certain of these lesions, the spots where by preference they occur, their pathogenesis, and their manner of *debût* on the septum, such a supposition appears to be very probable. Especially as regards the perforating ulcer, its site and form, and the site of the perforation which it may give rise to, and the symmetry on both sides of the septum noted in a case by

[17] In the clinic of M. Hallopeau, at the suggestion of M. Lallier.

[18] Ignoring the picture, we have taken a scheme of the entire piece by the aid of a compass. The examination of the fragment preserved, in which the perforation is seen immediately subjacent to the Jacobsonian cushion occupying the base of the septum, is more demonstrative than the scheme,

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Hajek,[19] does it not seem as if the canal of Jacobson could in some cases at any rate have something to do with it?

Hajek, bearing in mind the colossal number of cocci which the nasal cavities shelter even in the normal state, considers this ulcer to be a necrosing affection of the mucous membrane, due to penetration into the depth of the glands of the staphylococcus and streptococcus pyogenes. "The large excretory ducts of the "mucous glands are particularly exposed to the receipt of these noxious agents, "leading to a local irritation and inflammatory alterations of the epithelial lining "of the mucous glands and of their excretory ducts. The inflammatory products "which rest in the ducts, the coagulation of blood which may form after hæmor- "rhages, furnish a basis particularly favourable for the multiplication of bacteria "and their pathogenic action." If such is the pathogeny of the perforating ulcer, would not the *rôle* which Hajek attributes to the glands of the mucous membrane be equally applicable to the canal of Jacobson, which in man is no more than a *cul-de-sac* without function?[20]

It is surprising that Hajek did not in his remarkable study attribute to the canal of Jacobson the smallest *rôle* in the causation of perforations, but the clinician is slow to take advantage of new facts furnished by anatomists, as exemplified in the case of perforating ulcer of the septum, which although clearly described by a pathological anatomist,—Weichselbaum—in 1882, and by Zuckerkandl, continued to be misunderstood clinically until Voltolini (1888), Rossbach (1889), and Hajek (1890) made a distinct nosological species of it. It is not to be concluded that every lesion of the inferior portion of the cartilaginous septum will invariably commence in the *cul-de-sac* in question, but this will simply furnish a condition particularly favourable to their development due to its configuration and perhaps to its being a retrograde organ. The process may, without any doubt, arise otherwise.[21]

We must suspect strongly that the organ of Jacobson does not escape the common law, and that, even though rudimentary, it may be affected primarily by certain morbid processes, and that its *rôle* in certain perforations of the cartilaginous septum is far from being insignificant. We have seen lupoid and syphilitic lesions limited precisely to the region which the canal of Jacobson commonly occupies, and even in two cases[22] recalling the form in a striking manner; but we have not been able to see them from the commencement, *i.e.*, when the course of the canal

"Virchow's Archiv," Tome cxx., 1890.

[20] Another micro-organism, the gonococcus, is found to have a natural tendency to seek refuge in the crypts of the urethra, and to multiply there so as to lead to a series of modifications, a phlegmasic process, follicilitis. The site of this folliculitis is, according to Lefort (Thèse de Paris, 1888-1889), the valvule of Guérin situated about one and a half centimetres from the meatus. If the pathogenesis of the perforating ulcer is what Hajek considers it to be, could not the cocci, so numerous in the nose, under certain circumstances produce a folliculitis of the canal of Jacobson, leading to necrosis of the subjacent cartilage? The analogy is striking.

[21] 1. (July 8, 1891) A copper turner, aged twenty-six, syphilitic for three years, and tuberculous, had for eight days perceived a perforation of the septum. For six months he had been in the habit of removing adherent crusts from the nasal fossæ by the finger nail—sometimes causing slight bleeding. There was a perforation of the antero-inferior portion of the cartilaginous septum of the size of a lentil, cicatrized, except in its superior portion, and having thin edges, the mucous membrane covering this having a cicatricial aspect. On the left the canal of Jacobson was about 3 mm. in depth, and situated about 4 mm. behind the posterior edge of the perforation.

[22] 2. *First Case.*—A man with tertiary syphilis; syphiloma of the upper pharynx; loss of a portion of the sphenoid; perforation of the palatine vault, etc. A small grey-white cicatrix existed in the left nasal fossæ about 4 mm. long and 2 mm. high, exactly above the cushion of Jacobson and in the spot where the canal is usually found.

Second Case.—Lupus of the nose and upper lip, extending into the vestibule of the nasal fossæ. Red, bleeding granulations in the region of the canal of Jacobson, the probe passing through the whole septum. Cauterizations with nitrate of silver. In June the granulations disappeared, and the perforation presented cicatrized edges, being situated above the cushion of Jacobson, 4 or 5 mm. long, and 2 mm. high, and occupying exactly the site of the canal of Jacobson.

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was yet recognizable, and this latter condition ought to be fulfilled before one can affirm the existence of a new nosological entity, "Jacobsonitis." Resuming :—

(1) The canal of Jacobson may be, if not always, at least often recognized in the living subject ;

(2) Its research has an important place in exploration of the nasal cavities ;

(3) The relation which may exist between the canal of Jacobson and lesions occupying the region where it is situated require research.

Meeting, Dec. 4, 1891.

On a little known Variety of Phlegmonous Angina (Lingual Phlegmonous Peri-Amygdalitis ; Superficial Submucous Phlegmon of the Base of the Tongue). By Dr. ALBERT RUAULT.

In a monograph presented to the Clinical Society of Paris in 1888, in which I related some original observations of patients with hypertrophy of the lingual tonsil, I referred to the possibility of acute inflammation of this region, relating such a case. Though chronic hypertrophy was well known, acute inflammation had been but little studied. Seifert had recorded one case, but it was not one of spontaneous angina, but had proceeded from penetration of a foreign body (fragment of wood) into the mucous membrane of the base of the tongue. Literature published up to now only indicates the possibility of acute or sub-acute lingual amygdalitis. I have seen a number of such cases in both sexes, and especially in women in whom frequent recurrences had determined a little hypertrophy of the adenoid tissue of this region. It is rare that in the latter case the affection gives rise to accentuated general symptoms. It is often very circumscribed, situated only on one side of the base of the tongue, on some follicles, and seen laryngoscopically only as a lively red tint with marked tumefaction, which disappears at the end of three or four days. Sometimes, however, the inflammation involves all the lingual tonsil, which is seen to be tumefied, very red, dotted with pultaceous deposits, and may give rise to a little redness and tumefaction (not œdematous) of the epiglottis, and of the chain of lateral lymphatic follicles of the inferior part of the anterior pillars of the palatine arch. It may be accompanied with fever and gastro-intestinal disturbance. The pain of deglutition is acute, and spontaneous pains exist, radiating from the median region of the neck towards the ears and downwards to the mediastinum. Patients most of the time complain of a painful point in front of the neck ; often at the level of the sternal fourchette, quite below the seat of the lesion. From my personal experience these events are far from being rare, and if they are not more frequently observed in laryngological practice, it is that they are almost invariably misunderstood outside of this specialty. The physician who is not a specialist refers the symptoms to the slight signs of inflammation which he observes on the posterior wall of the pharynx, and especially to the inferior portion of the anterior pillars, and he diagnoses an "inferior pharyngeal angina" without bearing in mind the apparent disproportion between the supposed lesions and the symptoms observed. As the affection is cured in a few days ordinarily, either spontaneously or under simple treatment, its true situation, as revealed by the mirror, escapes the observer.

In some cases severer symptoms, even alarming, may appear, and the laryngoscopic examination is undertaken only because of the apparent imminence of suffocation, when the surgeon is called in. He finds a more or less extensive induration of one side of the floor of the mouth, and sees with the laryngoscope an ill-defined tumefaction of the base of the tongue, even œdema of the epiglottis, and reserves his prognosis, remaining in doubt between the diagnosis of deep basic glossitis (the

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lingual angina of David Craigie) and pre-laryngeal phlegmon, and a similar condition of the floor of the mouth. Generally, some days later the patient is better, suffocation has not occurred, and whether the patient may or may not have expectorated pus remains doubtful to the surgeon; he imagines that there has been the threatening or even the commencement of one or other of the affections he has thought of, and in the presence of cure, does not occupy himself much with forming a retrospective diagnosis which no longer presents interest. It would be difficult also for him, for the symptomatology special to each of these affections is but vaguely indicated by authors. They are differentiated quite from an anatomical point of view, but clinically one is limited to signalizing the possible gravity of the prognosis, and to speaking of the possibility of enormous œdemas of the anterior part of the tongue, of respiratory complication, gangrenes, etc; without directing attention to that which in these various symptoms belongs more especially to basic intra-muscular glossitis, or to pre-laryngeal phlegmon, a variety depending on the affection of the floor of the mouth, of which it may be considered to be a circumscribed phlegmon, sometimes abortive (anterior epiglottic angina of Michel), sometimes suppurative, as opposed to diffuse gangrenous phlegmon of the same region (Ludwig's angina). I believe that in the cases to which I have made allusion we have to do with neither one nor the other of these affections. These latter affections, happily rare, do not retrograde so easily when they have appeared, and even when they have had this happy termination, they can be diagnosed early with some precision. But, generally, their abortive forms are confused with the affection to which this note is meant to call attention, *lingual phlegmonous peri-amygdalitis, submucous superficial ulcers of the base of the tongue.*

I have in five cases already in my practice observed this affection; it always has occurred with such marked individuality as to deserve a description which, although summary, seems to me to mark a distinct clinical type. My observations have been on four men and one woman; once the affection occupied the whole region of the lingual tonsil, without marked difference on either side; in the other cases, it was situated three times on the right side and once on the left. In the first case the affection ended in resolution, but there was a recurrence, and there was spontaneous evacuation of an abscess. In the other cases, I have twice seen suppuration terminate the disorder, and twice it has ended in resolution. The cases are as follows:—

Case I.: Dr. X., aged about thirty, suffered from chronic pharyngitis, left from a severe attack of diphtheria two years previously. A few days before being seen, the patient had been attacked with severe pains in the throat radiating to both ears, with extreme dysphagia, slight febrile condition and marked excitement. The throat was very red, the voice normal, and respiration easy. Some months before the same conditions were present, and had yielded partially at the end of six to eight days, and completely two days later after the spontaneous intra-buccal evacuation of a certain quantity of pus. M. Widal referred the patient to me, thinking that on this occasion there was a deep abscess, and the patient also wished me to make a laryngoscopic examination and to treat this condition. Examination was easy, though the patient was unable to protrude the tongue without pain. Along with the diffused redness of the throat the inflammation was seen to be very marked about the anterior pillars of the fauces. The lingual tonsil was very large and tumefied, extremely red and shiny, and it was raised up on a base larger than itself. The epiglottis was a little red, dull, but not œdematous; the larynx was nearly normal. The anterior surface of the tongue was very furred, soft, free from pain, and without any trace of swelling. The affected region was very sensitive to touch, and, placing the finger in the centre of

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the posterior limit of the floor of the mouth on the skin of the neck, pain was also produced. There was no swelling of glands. I made some parallel antero-posterior and very deep scarifications with a laryngeal knife. Pain was acute, and there was a free flow of blood. After-treatment consisted of repeated garglings with carbolic solution, 1—100. Next day there was relief, and cure was complete a few days after.

Case II.: Madame X., twenty-nine years of age, married, and subject to sore throats and laryngitis for a long time. Six days previously she had been attacked with malaise, shivering, and fever, followed by severe pain in the throat and right ear. Dysphagia was very marked, each attempt at swallowing causing pain in the throat and ear. The voice was good and respiration normal. There was no great difficulty in opening the mouth or protruding the tongue. In the pharynx there was nothing abnormal, except a little redness of the lower part of the right anterior faucial pillar. Tongue clean, soft, and not painful on pressure. Very considerable tumefaction of the base of the tongue was seen on the right side, with effacement of the glosso-epiglottic fossette, and of the glosso-epiglottic and pharyngo-epiglottic folds of the same side; with very considerable œdema of the epiglottis, which was distorted on the left side. The lingual tonsil was thickened, red, covered in parts with pultaceous deposits and raised on its right half by the subjacent tumefaction. Pressure by the finger was painful, especially at one spot. A little pain was produced by pressure on the right side of the neck, on the level of the posterior part of the floor of the mouth. There were no enlarged glands. Very hot poultices were ordered to be applied to the right side under the jaw, during the day, and at night inunction with mercury and belladonna ointment, the parts to be wrapped in cotton wool. A wash of carbolic acid, 1—100, and quinine internally were prescribed; a warm injection to relieve the constipation and intestinal antisepsis by doses of naphthol, 2·50 grammes in five doses; rest and a diet of milk and eggs. Next day there was relief and absence of fever. At one point over the lingual tumefaction fluctuation could be felt, but, nervous at the sight of the knife, the patient refused to have it incised.

Two days later the patient expectorated a quantity of pus of disagreeable taste and odour, and experienced relief, with disappearance of pain. Tumefaction disappeared, but pus could be seen to exude from a spot half a centimètre or more in length situated at the anterior extremity of the right glosso-epiglottic fossette. A small laryngeal probe was easily introduced into the orifice, but it scarcely penetrated laterally—a little pus, however, exuding. Carbolic gargles were continued, but the patient ceased to attend longer.

Case III.: A lawyer, aged forty-six, after a chill, with malaise, nausea, and headache, suffered acute pain in the throat and right ear, dysphagia and fever lasting six to seven days. All these painful symptoms became much intensified, and were accompanied with salivation, not being able to swallow on account of the pain. On the seventh day the fever fell, but the voice becoming hoarse, and respiration a little difficult, the patient consulted the author. The tongue was protruded without difficulty. A little catarrh of the pharynx and redness of the anterior faucial pillar (which was slightly swollen at the base) existed. The tongue, though furred, was not swollen or painful to pressure. A large swelling of the right side of the base of the tongue was seen with the laryngoscope; the epiglottis was œdematous, and the posterior region of the larynx and the vocal cords were red and catarrhal. The same treatment was adopted as in the previous case. Though palpation of the swelling of the base of the tongue was painful, there was no fluctuation. On the fourteenth day the patient expectorated a little pus, giving great relief. All the symptoms ameliorated. A little blood and sero-

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purulent fluid was seen with the mirror to be exuding from the interstices of the two masses of follicles, behind and on the right, at the anterior limit of the glosso-epiglottic fossette. On the sixteenth day there was no more than a slight tumefaction of the right part of the lingual tonsil. Returning to his occupation, there was recurrence, with high fever for two days, and on the fourth day spontaneous evacuation of the abscess, with considerable relief. Pus was seen to issue from a spot at the anterior extremity of the right glosso-epiglottic fossette. A laryngeal bistoury was therefore introduced, and the opening enlarged. Phenol gargles were ordered, and three days before reporting the case the patient was nearly well, with a slight tumefaction of the right lingual tonsil, but no pain.

Cases IV. and V.: Both were men, aged respectively thirty-five and forty. In both the affection was treated early by the methods previously described, and in both resolution commenced at the fourth or fifth day, and the disorder ended from the seventh to the ninth day. There were neither vocal nor respiratory troubles, and there was no œdema of the epiglottis, but the local symptoms were the same as in the preceding cases.

Case VI. (communicated to the author by Dr. Cartaz): M. X., aged forty, consulted me in 1890, for a chronic pharyngitis, which had lasted several years. He smoked and drank freely, was rheumatic, and the previous autumn had a slight attack of gout.

Constant tickling at the base of the tongue troubled him, and produced attacks of coughing. Great hypertrophy of the adenoid tissue of the base of the tongue was seen by the laryngoscope (forming three large lobes in front of the epiglottis. Several cauterizations of the parts were made, the later ones being with the galvano-cautery. After a night at a ball, where he attained to *un doux état d'ébriété!*" and subsequent driving in the open air, he experienced pain in the throat and slight fever, which led to his taking to his bed. The "angina" became worse for forty-eight hours, and towards the sixth day he experienced pain on swallowing, the pain radiating to the ears, and difficulty of breathing. On the seventh day, the author found diffuse redness of the pharynx and tonsils, and red tumefaction over the lingual tonsil and a swelling the size of a nut, pressing against the epiglottis (explaining the cause of the respiratory difficulty). A sense of fluctuation was felt. The patient declined to have it opened with a bistoury, and corrosive sublimate and phenol gargles were prescribed along with an emetic to relieve the gastric trouble which was present. Whilst vomiting, the patient ejected some pus and blood, after which he felt relieved. The next day the tumour had diminished, and there was no trace of opening or fistula, but it was evidently an abscess by infection of a wound treated in a fashion as fantastic as unmedical. The patient afterwards experienced great relief in his throat symptoms.

In reviewing these six cases, the following may be regarded as a fair sketch of the affection: onset often sudden, malaise, headache, sometimes nausea, shivering, smart fever, lasting four to seven days, anorexia, thirst, often constipation, pains in the throat from the first, then shooting pains into one or both ears, very marked dysphagia, voice ordinarily unaffected, hoarse once in five cases, and dyspnœa twice in six cases. There is no swelling of the neck, and no enlargement of glands.

The floor of the mouth is posteriorly a little affected, but the parts are soft; the patient can open the mouth, and depressing the tongue is not painful; the free part of the tongue is normal, it can be protruded easily, and traction can be made upon it slightly, to facilitate laryngoscopic examination; the pharynx is sometimes diffusedly reddened, especially the lower part of the anterior faucial pillars: the lingual tonsil is very red, swollen, and raised on its base, forming a sort of

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tumour, pressing against the epiglottis; the glosso and pharyngo-epiglottic folds may disappear. When the affection proceeds to suppuration the anterior surface of the epiglottis becomes œdematous, but this does not extend to the ary-epiglottic folds. When dyspnœa occurs it is only very slight, and is due to the falling backwards of the epiglottis; the voice remains unaffected, except when there is some laryngeal catarrh present; the abscess opens spontaneously from the eighth to the fourteenth day, and from two to five days after its appearance; the quantity of pus evacuated is only small; the fever diminishes when the abscess forms, and disappears when it is evacuated; the otalgia then disappears, and cure is effected in two or three days. The abscess may recur in one or two weeks, and the fever may reappear, but it does not last long, and spontaneous evacuation occurs early.

The seat of the abscess can be accurately defined; the layer of lymphatic follicles in the mucous membrane of the base of the tongue is inseparable from the subjacent layer, formed of a mass of glands, of which most rest on the superior lingual muscle, while others, situated deeper, are embedded in the muscle itself. The orifices of these glands open either in the intervals between the follicles, or in the centre of the mass; it is, therefore, by the help of these external ducts of the intra-muscular glands that the mucosa adheres to the submucosa in the region near the raphé formed by the median glosso-epiglottic ligament. A little outside, and in front of this region, the deep glands become less and less abundant, and the superior lingual muscle adheres to the mucosa.

If, then, the deep interstitial inflammation of the mucous layer, of which the upper portion forms the lingual tonsil, ends in suppuration, pus can only collect with trouble, and over an area of about one and a half centimètres, sharply limited to the median part of the median glosso-epiglottic ligament, and scarcely extending laterally beyond the level of the lateral glosso-epiglottic fold, and not reaching the calyciform papillæ in front. The pus would be limited below by the hyo-epiglottic membrane which, thick and resistant, would prevent it reaching the anterior surface of the epiglottis in the thyro-hyo-epiglottic space, in front of the larynx. The abscess is lateral, and if it is not bilateral (an event which I have not seen), it is because it can only extend from one side to the other of the median glosso-epiglottic fold, through a dehiscence in the fibres of this ligament. Œdema will be apparent in the glosso-epiglottic fossette and on the epiglottis, where the mucous membrane, being thin, will be transparent, while laterally, where it is thicker, it will appear only as a tumefaction. The tongue will remain normal. But if the abscess were intra-muscular, fluctuation would not be felt so easily, all authors being agreed upon the special hardness of such abscesses, which have been mistaken (Blaudin) for solid tumours, and there would not be spontaneous evacuation of pus in front of the epiglottis. Lastly, the tongue can be projected from the mouth and maintained without difficulty; the elevation of the tongue and drawing forward of the epiglottis resulting, do not provoke extreme pain, the reverse of what is the case when the inflammation is situated below the hyo-epiglottic membrane in the thyro-hyo-epiglottic space. A patient with pre-laryngeal abscess or Ludwig's angina is from the first unable to protrude the tongue or to bear laryngoscopic examination; he can only imperfectly open the mouth, from the pain occasioned, due to the tumefaction and hardness of the floor of the mouth, never failing in such cases.

Phlegmonous lingual peri-amygdalitis may then be easily differentiated from deep basic glossitis, and from pre-laryngeal phlegmons of the floor of the mouth. The absence of cervical adenopathy will distinguish it from plegmonous adenitis, and it could not be confused with abscess secondary to a bone lesion.

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Its prognosis, irrespective of the possible complications, which, however, have not been seen, is very favourable, since spontaneous opening of the abscess always occurs, without producing dangerous respiratory symptoms. Its seat, symptoms, progress, and termination allow us to consider it as a variety of common phlegmonous peri-amygdalitis.

As to treatment, deep scarifications from the first may succeed in preventing suppuration, but the fourth and fifth cases show that retrocession may occur without surgical intervention. An abscess once formed, and fluctuation perceived, opening ought at once to be performed, but spontaneous evacuation is sure to occur. Recurrence will be avoided if care be taken after spontaneous evacuation to enlarge the opening with the laryngeal knife.

LUC remarked that he had lately seen such a case.

LOEWENBERG made some remarks upon the necessity of obtaining antisepsis in diseases of the buccal cavity, for which purpose he endeavours to reach the microbes present in isolated spots, *e.g.*, an inflamed tonsil, by rubbing them first with 1—1000 sublimate and then with boracic acid applied with some force. The ideal will be obtained by treating the surface with a preparation of collodion which will hold these antiseptic substances and prevent the penetration of air holding microbes to the surface.

HERMES remarked that swabbing with corrosive sublimate did not seem to be devoid of danger.

GOUGUENHEIM asked why bacteriological examination was not made.

RUAULT remarked that in these cases it was not probably the microbes of the mouth that had anything to do with them, for the affection is developed at the end of a veritable contagion; why did not the patient, for example, have a simple amygdalitis?

MEETING of the OTOLOGICAL SECTION of the Sixty-fourth Gathering of the ASSOCIATION of GERMAN NATURALISTS and PHYSICIANS.

("*Monats. für Ohrenheilk.*, Nov., 1891).

(Continued.)

September 24th, 1891, Prof. WALB *presiding.*

Dr. KRETSCHMANN (Magdeburg).—*A Case operated on by the Author's Modification of Stacke's Method.*

Patient shown.

Prof. SCHWARTZE (Halle).—*Cholesteatoma.*

Cases of lasting healing brought about by the maintenance of a persistent opening in the mastoid process—cessation of suppuration.

Privat-docent SIEBENMANN.—*Demonstration of Casts and Dried Preparations.*

The specimens (temporal bone or half-head) freshly removed from the body are placed in Muller's fluid, or weak chromic acid solution, and their

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holes and corners are thoroughly syringed with the liquid, and well washed out. They are then treated with diluted alcohol, gradually strengthened up to absolute alcohol, and lastly with turpentine, which, in case of large preparations, has to be changed at least once. The whole affair may take from a few weeks to several months. The preparations thus saturated with turpentine are placed in a light place, protected from dust, and before mounting may be cut or sawn through as required. Delicate pieces require decalcification and embedding in celloidin in the usual way.

The preparations shown were :—(1) Vault of pharynx, with palate, base of tongue and larynx, of a new-born child ; (2) vault of pharynx and pharyngeal tonsil (hypertrophied) of a child ; (3 and 4) vault of pharynx and pharyngeal tonsil of an adult ; (5) section through antrum, tympanum, and Eustachian tube ; (6) section through the temporal bone (coloured) with carotid, jugular, and facial ; (7) axial section through the cochlea of a guinea-pig ; (8 and 9) horizontal and frontal sections through the nose of a new-born child ; (10) half-head (of an adult) with a widely opened sinus maxillaris ; (11) injection preparation of the nose and accessory cavities of an adult.

In the tenth preparation probes were pushed through from the maxillary antrum, the frontal and sphenoidal sinuses, into the nose, and showed that in this specimen it would have been impossible, in spite of the comparatively large size of the openings, to have sounded these cavities from the nose during life.

Dr. KRAKAUER (Berlin). — *A Case of Multiple Exostoses of the Cranium, with Unilateral Atrophy of the Face; Demonstration of the accompanying Aural Exostoses.*

This was a girl of twelve years of age, of scrofulous tendency, who had suffered intermittently from left-sided otorrhœa since her earliest childhood. She presented the following peculiarities :—(1) Near the lower margin of the left orbit a scar remaining from the operative removal of an exostosis ; (2) an exostosis on the left mental protuberance of the lower jaw ; (3) a larger exostosis on the right half of the frontal bone ; (4) an exostosis completely occluding the left external auditory meatus. In addition, there was atrophy of the left half of the face, involving not only the soft parts, but the bones. Air-conduction was abrogated, bone-conduction well preserved.

In order to remove this last exostosis the auricle and cartilaginous meatus were detached, and turned forwards, and it was then seen that there were two other exostoses sessile on the upper and posterior wall, extending from the beginning of the osseous meatus to the tympanic ring. The whole of the posterior wall was removed by means of a chisel. The external parts were replaced, and a thick drainage tube was introduced as far as the tympanic membrane, as is done in Stacke's operation. Primary union took place.

The chief interest lay in the combination of conditions such as has not been described in the literature of the subject. The chronic otorrhœa

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favoured the formation of the exostosis, but could hardly be considered the direct cause. For this we have to fall back on the scrofulous taint, if we can look upon it as the result of a hereditary luetic condition, which Toynbee mentions as a cause of exostosis. The author thought the aural exostosis was merely an accidental expression of the same trophic disturbance as gave rise to the exostoses situated elsewhere. Exostoses are rare in early years, the youngest case on record being that of a girl aged four, observed by Field.

Dr. SZENES.—*On the Therapeutic Effects of some new Otiatric Remedies.*

Cocaine Hydrochlorate.—Szenes had already tried this remedy in fourteen cases of tinnitus, and he tried it again in other fourteen with equally negative result. A five per cent. solution, slightly warmed, was injected through the Eustachian tube by means of a vulcanite catheter. In many cases, after the injection, there could be seen a congestion of the upper segment of the membrane, especially in the neighbourhood of the short process, extending downwards on the manubrium, but disappearing completely before the next inspection. In spite of the greatest caution one or two drops, in most of the patients, ran down into the pharynx, and Szenes was quite prepared to believe that some of the unpleasant symptoms ascribed to cocaine-poisoning—retching and constriction in the throat—must be charged to the account of the cocaine drops acting locally in that region, particularly in the case of susceptible people. The other toxic symptoms, reeling gait, vertigo, faintness, might be regarded as the further stage of those already mentioned, or else as direct nervous effect. As an antitinnitic remedy cocaine must be placed among those which do not yet enable us to solve the mystery of noises in the head, and if these noises depend on pathological changes in the vessels, there are many other remedies to be tried before we are in possession of a real antitinnitic.

Brom-ethyl.—This vapour, recommended by Loewenberg for tinnitus, especially in sclerotic median otitis, was tried by Szenes in forty-two cases of various kinds—pronounced sclerosis, typical middle ear catarrh, cicatrices of the tympanic membrane, synechiæ in the drum, and normal drums with tinnitus. The vapour aspirated in the air-bag was introduced into the middle ear by the catheter or by Politzerization. The statements of patients as to the cold or warm feeling induced by the process varied very much from time to time, and varied during the same sitting, so that the diagnostic value claimed for the sensations by Loewenberg could not be confirmed. No certain therapeutic results were obtained and further experimentation is required.

Aristol.—Szenes again tried aristol as an antiseptic powder, as recommended, for external and median otitis, and with results which confirmed his previous opinion that the remedy did not possess the good qualities claimed for it by Rohrer. In this Szenes finds himself in agreement with Bürkner's recent experiments.

Dermatol.—In eighteen cases he made use of dermatol: ten of chronic middle ear suppuration, two of acute otitis, three in which granu-

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lations remained after the removal of polypi, and three of diffuse external otitis. He found it to have a certain action in diminishing secretion. It was also unirritating, devoid of smell, but was not suitable to all cases in which the insufflation of powders was indicated. He recommends further trial.

Dr. BRIEGER had made experiments with dermatol, but he considered that on account of its insolubility it was likely to lead to the formation of firm crusts, behind which the suppuration might continue.

Dr. SZENES would not overvalue the advantages of dermatol, and said its use should be carefully limited to cases in which powder treatment was appropriate, where retention was not likely to occur.

Dr. SZENES.—*Casuistic Communications.*

He brought forward accounts of three cases of *Acute Otitis Media* which had run an unusual course. In the first case there was acute suppuration of the left ear, and three days after complete recovery the symptoms of the same affection came on on the other side, but were checked before suppuration occurred. In the second case the same order of events took place, but suppuration was prevented; and also in the third, but with suppuration in both. Szenes compares this to the so-called "wandering" pneumonia, and would describe it as "otitis media acuta migrans." Bacteriological investigation of such cases is required before the term "otitis media migrans," in the strict sense, can be accepted, as it will be necessary to show that the same micro-organisms are present in the second as in the first ear affected.

Prof. HABERMANN asked whether the author was not inclined to believe that the migrating median otitis might be due to the transmission of pyogenetic material from the naso-pharynx.

Dr. SZENES did not think so, as he had avoided using the air douche, and had used exclusively in these, as in all his cases of unilateral acute middle ear catarrh, the Eustachian catheter.

Dr. BRIEGER asked if he thought the infection of the second ear was hæmatogenous in origin.

Dr. SZENES replied that he only wished to state the fact, that without any further definite cause the second ear became affected after the complete recovery of the first. For a satisfactory explanation they would have to trust to further observations.

Prof. WALB. — *On the Use of Lucae's Spring Pressure Probe in Diseases of the Middle Ear.*

Prof. Walb had at first some mishaps, but more recently by a more energetic use of the probe he had produced good results. In a few cases the tinnitus, which had been severe, disappeared entirely; in others it diminished, while the hearing power improved. The proceeding had to be carried out daily—in a few cases twice a day—and at each sitting pressure was made from fifty to sixty, or even one hundred times. The patients, without exception, got accustomed to the manipulation quite quickly. No local reaction took place. At first the head had to be fixed, but later that ceased to be necessary. For any considerable result to be

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produced it was needful to carry on the treatment for months. (A few cases were treated for nine months.) The important observation was made that it was not only in cases in which bone-conduction remained good, while air-conduction was diminished, but also in cases of much lowered bone-conduction, that improvement took place, the bone-conduction being again restored. From this Walb concludes that our current mode of defining the seat of the disease according to the preservation or loss of bone-conduction requires revision, and that certain morbid conditions of the conducting apparatus modify the bone-conduction very considerably.

Dr. KRAKAUER (Berlin) had used catheter and rarefacteur simultaneously in suitable cases, but without getting better results than with the rarefacteur alone.

Dr. JOEL (Gotha) had obtained improvement in tinnitus by the use of Delstanche's rarefacteur.

Dr. STIMMEL (Leipzig) found subjective noises diminished after the employment of Lucae's probe, but without change in the hearing power.

Dr. WEHMER (Berlin) had had a few good results out of many cases in which he had tried it.

Prof. SCHWARTZE (Halle) considered that if the mechanical element was the chief one, then Hommel's "tragus-pressure" should produce equally good results, and he asked if anyone could report experience of it.

Dr. STIMMEL had used Hommel's method in many cases, but had got good results in only two.

Dr. JOEL asked, further, whether anyone had narrated results obtained by the use of Aschendorf's hearing-tube.

Prof. WALB had used it in one hundred cases without any beneficial effect. The mode of applying it to the ear was a bad one, and, further, the instrument was injurious through the resonance which took place in the ear.

Dr. KRAKAUER tried it in fifty cases without result.

Dr. BRIEGER (Breslau) had one patient for whom Aschendorf had himself prepared the instrument. There was benefit, but the high price of this hearing-tube placed it beyond the reach of many.

Dundas Grant.

REVIEW.

Politzer, Adam (Professor of Otology in the Imperial University of Vienna, etc.). —"The Anatomical and Histological Dissection of the Human Ear in the Normal and Diseased Condition." Translated from the German by George Stone. London: Baillière, Tindall, and Cox, *1892.*

THOUGH Professor Politzer's "Zergliederung des Menschlichen Ohres" may in the original be in the hands of many of our readers, there can be no doubt that to many more a translation of this wonderfully detailed

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