

panic cavity, on the principle of the aëro-dynamic paradoxon, so that the drum membrane moves inwards.

The inspiratory stream presses in the tympanic cavity, and all the more easily because this is then the place of less resistance. Politzer's observations, differing somewhat from these, should stimulate to further and more extensive investigations, so that in the future the contradictions may be explained or set aside.

As regards the pulse movements, he remarked that similar observations had already been made by Politzer, Schwartz, Moos, Van Troeltsch, and others. The explanation of the pulse movements had already been sought for by other authors, and it depended upon this: that with each systole the lumen of the tympanic cavity was diminished, so that the membrane was forced outwards. He had no fresh explanation to offer, and considered this to be the correct one.

Prof. GRUBER then delivered a valedictory address.

Dundas Grant (Trans. and Abs.).

VIENNA SOCIETY OF LARYNGOLOGISTS.

Meeting, February 6th, 1896.

President—Prof. STÖRK. *Secretary*—Dr. KOSCHIER.

WEIL. *Pathology and Treatment of Suppurations of the Sinuses, and especially of the Maxillary Sinus.*

After the previous discussions, the author had projected a comparative study of the various methods of treatment of suppurations of the sinuses, but has found this to be impossible, since there exist few statistics, and these contain but little detail and consequently are not of value. Nearly all authors adopt radical surgical methods, and the conservative treatment of irrigation through the natural openings succeeds only with few, who generally consider it difficult and producing bad results. Young authors go further. For example, for empyema of the antrum of Highmore they say that an opening for the evacuation of pus may be made at any point; they do not make further allusion to a natural opening. It is the same in all branches of the specialty where conservative methods, even when they may succeed, are not adopted like new operative methods, which become immediately employed. The young specialist who for the first time has to choose a method of treatment of empyema of the antrum will rather have recourse to the perforator or chisel, which will certainly give issue to the pus, and when his patient is cured he will ask if it had not been possible to avoid intervention.

Weil then discussed the results of his own experience of the conservative treatment. He has altogether met with about 96 different empyemas in 52 patients, and 23 suppurations of the maxillary sinuses in 17 patients. Of this number 7 were simple cases without complication; 5 of them were regularly treated and cured in a lasting manner, by 7, 12,

17, 30, and 41 irrigations, lasting from one week to four months. The oldest cases, which had already lasted four or five years, have been controlled after several recurrences.

Weil was opposed to the idea of the dental origin of empyema of the antrum of Highmore, which for some years has had fewer supporters, since numerous anatomical pathological researches have demonstrated the frequency of affections of the mucous membrane of the sinus in the course of various acute infectious conditions, and we have come to know much about suppurations of the other sinuses which have nothing to do with teeth, and consequent upon epidemics of influenza. We have observed a large number of cases of empyema. The author then reviewed the results of the researches of Zuckerkandl and Demochowski on the spontaneity of acute inflammation of the mucosa of the sinuses, and quoted some original observations, and others gathered from literature, which agreed with these perfectly. During the course of this year he has become convinced that most suppurations of the sinuses tend to cure spontaneously if the regular evacuation of the pus is assured, and that in his most convincing observations the original infectious suppuration has been spontaneously cured. In these cases suppuration remains from a foreign body, which is maintained by the purulent caseous mass, and which ceases when this is evacuated by a natural or artificial channel (on condition, of course, that the destruction is not too deep), just as in the case of a child with nasal inflammation and ozæna following upon a prolonged retention of a foreign body, and who is cured in a few days after its extraction. It is only in this manner that we can explain the rapid cures obtained by a number of observers by different methods; and a striking example of this was the case presented by Weil at the meeting of January 9th, where a fœtid caseous empyema of the antrum, having lasted nine months, was absolutely cured by seven irrigations with hot water, notwithstanding a caries of the second molar and of the first molar with a fistula, which ceased to suppurate after the cleansing and stopping of the tooth, not performed until some weeks after the cure of the empyema.

Meeting, March 5th, 1896.

President—Prof. STÖRK. *Secretary*—Dr. GROSSMANN.

PANZER contributed a section of *Laryngeal Fibroma* of extraordinary dimensions.

The patient, a florist, came to Chiari's clinic in July, 1890. He was fifty-two years of age, and had been hoarse for several months. The orifice of the larynx appeared perfectly obstructed by a tumour larger than a hazel nut, of plain surface with a few irregularities, very transparent, and mobilized by the air current. It probably arose from the right vocal cord. It was easily removed with the snare, when the upper surface of the right vocal cord was seen to present a wound extending over the

whole cord and having at its edges small mucous bundles. The tumour therefore arose from the cord and not from the ventricle. Histologically it was found to be covered everywhere with pavement epithelium. In places were seen cavities filled with homogeneous masses, colouring deeply with eosine, very probably serous exudation between the epithelium with hyaline degeneration (Prof. Kolisko). The tumour varied in appearance according to the sections. In some there was only fibrous tissue containing round cells; others enclosed bundles of tissue with serous infiltration; in others were the homogeneous masses colouring with eosine (hyaline). Fusiform cells, with large fibrous nuclei, were found, and small cavities due to the separation of tissue. The tumour was a fibroma with secondary modifications, serous transudation, softened cysts, hyaline degeneration. The degeneration is explained by the mobility of the tumour, flexions of its base, and troubles of nutrition.

WEIL continued the lecture which he had commenced at the last sitting on *Suppurations of the Sinuses, and of the Maxillary Sinus in particular*.

In order to determine the diagnosis of empyema of the antrum of Highmore, when exploratory puncture across the maxillary orifice has failed, the author practises puncture across the inferior meatus, according to Schmidt's method, a proceeding which he has found almost infallible in about thirty cases, simultaneously with the exploratory injection of Lermoyez. He finds the needles ordinarily used too large, those of 0.9 to 1 millimètre in thickness piercing the bone more easily. The point ought to be curved, because of the descending direction of the puncture, and in order to be certain in turning the needle that it is engaged in the cavity.

This is indispensable in exploratory puncture, for otherwise the liquid may be easily injected under the mucous membrane or into the cheek, which might lead to accidents, such as glandular suppurations. Severe antisepsis is *de rigueur*. When the result is positive, Weil follows the exploratory puncture by a pulverization, which ought to last until the water escapes by the nose, notably facilitating subsequent treatment across the maxillary orifice. When the empyema is assured, it is necessary to seek the maxillary orifice, and if it cannot be found immediately to partially resect the middle turbinated, removing only the edges which impede the movements of the canula in the middle meatus and prevent the finding of the maxillary orifice. The author has had recourse in about fifty cases to this small unimportant intervention.

Weil enumerated then the various objections made against this treatment, the principal of which is that the patients cannot treat themselves. However, the woman shown at the meeting of the 2nd May, 1895, had easily learnt it, and demonstrated it to the society on December 5th; and so did another patient, in whom the middle turbinated was preserved. Weil makes the canulas either fixed or movable. He had read last summer in Stoerk's volume that this author had for a long time employed irrigation made by the patients, but he had no knowledge of it before. He then explained how by careful observation—for instance, by the regular measuring of the suppurative discharge—we can draw conclusions

as to the chances of cure of the internal cavity, and deduce a probable prognosis ; and said that in order to be assured of the introduction of the canula he had had recourse to exploratory injections of substances easily recognized, such as chloride of silver and dermatol. He then discussed the various operative methods and advantages and disadvantages of conservative treatment, reviewing the most recent opinions (Ziem, Avellis, Moltenius, Jansen, Grünwald). The author has only once seen trephining through the canine fossa ; it was made in spite of him, and the affection recurred for months, with hæmorrhages sufficient to endanger life. He explains its employment only by reason of its requiring no technical skill or special instruments. He thinks it is also very regrettable in the interests of science that the results of unsuccessful treatments of these empyemas are so rarely published. The obstinacy of numerous empyemas of the antrum of Highmore proceeds but rarely from pronounced modifications of the mucous membrane and bones, but more often from the coincidence of other empyemas. He concludes that in most, perhaps in all, combined empyemas, the ethmoidal labyrinth is often the central point of the affection, and attacked primarily, but frequently, suppuration of the ethmoidal cells is avoided.

The author cited some cases, and will later on publish a complete monograph on ethmoidal suppurations. In these cases the results of treatment are naturally much worse ; the author has almost always obtained a marked amelioration, and it is only latterly, since he has directed his attention to ethmoidal suppurations, that he has observed many cures. As to the other sinuses the same remarks are applicable. Many suppurations of the frontal and sphenoidal sinuses can be imputed to empyema of Highmore's antrum. Weil concluded by remarking that the lesion of the osseous parts of the sinuses complicates and impedes the cure, and that the exposure of the natural openings and their irrigation approximates most to spontaneous cure, and constitutes the most rational treatment. It is only when at the end of several months there has been no result that it is necessary to adopt energetic methods, but the author is of opinion that the curette ought to be abolished from the therapeutics of the suppurations of the sinuses.

Meeting, 9th April, 1896.

President—Prof. STOERK. Secretary—Dr. HAJEK.

EBSTEIN showed a laryngeal specimen and histological preparations from a case of *Laryngeal Stenosis due to Leucæmic Infiltration*.

Fourteen days after a violent cold severe stenosis occurred, in the course of which there was found, especially for two days preceding the tracheotomy, a rapid increase of the infiltration. Laryngoscopically the appearance was that of a tubercular infiltration. The stenosis seemed to be especially due to an extensive infiltration of the subcordal mucous membrane, extending posteriorly to the sixth tracheal ring. Histologically

there was found an infiltration of mononuclear leucocytes in the ventricle, the vocal cord, and the mucous membrane of the subcordal space. The most affected point was the subepithelium around the glands and vessels. Coloured by Grabitschewsky's method, eosinophile cells were found in the infiltration. It was particularly interesting to find Charcot's crystals in the mucous membrane of the hypertrophied ducts of the glands.

PANZER showed a patient with *Empyema of the Antrum of Highmore*, which had caused an abscess and perforation of the palatine vault. The interesting point was that the sinus could be penetrated by an opening situated near the middle line.

DISCUSSION ON EMPYEMA OF THE ANTRUM OF HIGHMORE.

ROTH was happy to hear the opinion prevailing that the affection is much oftener of nasal than dental origin. As to spontaneous cure of the empyema, the clinician could more frequently pronounce it than the pathological anatomist, for he more frequently had occasion to observe it, and we could not deny that acute suppurations were also cured spontaneously in the same manner as suppurative catarrhs of the nasal mucosa. We meet with spontaneous cures of chronic suppurations now and then, but this is not generally the case with chronic empyemas, and experience teaches that this kind of suppuration often lasts many months, in spite of careful irrigations of the cavity, without always diagnosing a complication. It is easy to understand that, consequent upon persistent suppurations of the mucosa of the sinus, excoriations occur of certain spots, and vegetations, which prolong the duration of the suppuration. It is rare to observe polypi in this cavity. As to irrigations across the natural opening, it is intelligible that this method ought to be chosen whenever we can penetrate by this opening. Two objections, however, must be raised against this method ; many causes (obstruction of the opening through swellings, granulations, or polypi) hindering penetration through this opening, or a malformation of the middle turbinated impeding the passage of the sound or canula. We must not forget, also, that some patients cannot submit to prolonged treatment by the physician, and it would be necessary to teach them to make injections for themselves, which is very difficult in most cases. The author's case is an exception to the rule. Besides, when we wish to penetrate through the natural opening, it is often necessary to have recourse to operations, such as removal of granulations, extraction of a portion of the middle turbinated. I believe, therefore, that it would be essential to practise without hesitation an operation so inoffensive as ablation of a portion of the turbinated, which would allow the patient to penetrate the sinus for its irrigation. I am not a supporter of those radical operations which, originating in Germany, have been propagated here ; but opening through the alveolus or extraction of a portion of the turbinated are not radical interventions, and they allow the patient to irrigate for himself and the physician to tampon the cavity with medicated wool, to swab the mucous membrane, and hasten the cure.

RETHI : This discussion had enabled him to collect his observations on chronic suppurations of the maxillary sinus, and to divide them into two groups, to judge of the exact value of various operative methods ;

those of the middle meatus, treated partly through the natural orifice, partly through an accessory opening, and partly by puncture through the external nasal wall ; on the other hand, those which were opened through the inferior meatus or alveolus. These two proceedings have furnished nearly identical results, nearly forty per cent. of cures. The details will be published later on. He remarked that he did not count as cures, relief to the local sensibility or to the cephalalgia, or diminution of the suppuration, but only its complete cessation. From his own experiences he has adopted in principle, whenever possible, treatment of the maxillary sinus through the natural openings, which he has been able to sound in about half of his cases ; but when the orifice was difficult to traverse, he had opened across the external wall of the middle turbinated. If the empyema had arisen from the presence of carious teeth he opened across the dental alveolus. He did not here refer to cases where there was caries of the walls of the cavity or proliferation of the internal mucous membrane, in which it was necessary to employ some other procedure, such as large opening through the canine fossa. He could not determine according to the cases which method had succeeded the best—we can only tell later on if any treatment has been efficacious ; but we do not know under what circumstances we shall obtain a definite cure. If, after failure of treatment through the middle meatus, the patient agreed to try it, he had perforated through the alveolar apophysis, after removal of a tooth, even if it were sound ; but the patient ought to be informed of the chances of this method, and to know that a cure, though possible, cannot be guaranteed. He generally refuses the operation. It may be said in favour of the alveolar method that subsequent treatment is more simple and may be conducted by the patient, but irrigations ought not to be prolonged indefinitely ; if at the end of several weeks they have given no result they are useless. Many patients learn to irrigate the middle meatus across the large opening. Since he had reviewed his cases his previous ideas had scarcely been modified. He had retracted from radical treatment and had become conservative.

SCHIEFF associated himself generally with the ideas of the previous speaker. As to the etiology, he adhered to the ideas which he had advanced in 1891, consequent upon his anatomico-clinical studies, that caries of the teeth and their roots (even admitted by those who oppose the dental origin) are almost always present, as has been remarked in the course of this discussion, and that their extraction may be recommended to allow of penetration into the sinus. He defended himself from having denied the origin of nasal empyema, since he had referred to it in the article quoted. But the appearance of empyema of the antrum cannot be considered as a proof of its purely nasal origin, because, being an infectious disease, influenza may excite trouble as well in the sinus as in the lungs, for it has already given origin to dental periostitis and pulpitis, not preceded with caries, when a tooth was intact externally (upper molar). As to Weil's therapeutics, he remarked that Alonelle in 1737, and Jourdain in 1765, has successfully employed irrigations through the natural openings, and that our contemporaries, Stoerk and Hartmann, have had recourse to the same method.

CHIARI said that of fifty-eight cases of empyema of the antrum of Highmore which he had observed for a long time, twenty-seven have been cured entirely and the others benefited. This is an argument in favour of his method, namely, perforation across the alveolus by a channel of three to four millimètres, irrigations, and tamponning by large bands of iodoform gauze changed once every week. Tamponning offers the advantage that the cavity is always filled with a mass slightly suppurating, so that secretion diminishes rapidly. If at the end of some months the pus has not dried up, the internal wall of the cavity is curetted, in order to remove vegetations and projections of the mucosa, which consist principally of hypertrophied and ectopic glands. This curettage is perfectly effected across the alveolar fistula. The treatment is continued until the sinus contains hardly any more mucus. The fistula is then closed by a pivot attached to a palatine prothesis, the irrigations being continued until the total cessation of the secretion. The plug is then withdrawn and diminished to allow the fistula to gradually close. The duration of the treatment until cure has been in six cases from several weeks to four months, and in the others several months. Other cases have not been completely cured, which is also frequently the case with catarrhs of other mucous surfaces.

Chiari raised the following objections to irrigations across the maxillary orifice, to which he had frequently had recourse : the introduction of the canula through the maxillary orifice is not very easy, and requires a special technical skill ; irrigation through the canula is effected with difficulty, by reason of the narrowness of the orifice ; definitive cure is also very uncertain. It is also necessary for the patient to visit the surgeon very frequently, for the process is difficult to learn.

Chiari has cured by perforation and tamponning one case which had a long time resisted irrigations across the maxillary orifice. The employment of alveolar operations and tamponning ought to be recommended.

KOSCHIER : As the method of treatment recommended by Weil has been employed for many years by Stoerk, and also at his clinic, he proposed to relate his experiences. One often succeeded very readily in sounding the maxillary hiatus through the middle meatus ; sometimes it is necessary first to amputate the anterior end of the middle turbinate, and it is only very rarely that this operation is impracticable. Having carefully irrigated the sinus, as in Weil's method, he sprayed with astringent solutions. Nitrate of silver of various strengths, three to ten per cent., had given the best effects, and he now used it exclusively. It is only when sounding of the hiatus is impossible, or that the patient could not submit to prolonged treatment, that trephining the alveolus by means of a drill was resorted to. The results are not entirely satisfactory by either method. Cure rarely persists, and recurrences are frequent at the end of a few months.

HAJEK : Weil's communication comprises two points : the treatment and the etiology of affections of the maxillary sinus. Weil's method, treatment through the natural opening—cannot be generalized, for a too pronounced curvature of the middle turbinate, or an excessive hypertrophy of the ethmoidal bulla, often hinder the introduction of the

instrument. In cases of chronic empyema, we have to remember that numerous vegetations around the hiatus often still further impede the entry of the canula. It is then only after partial resection of the middle turbinateds, and amputation of hypertrophies of the extremities, that the orifice of the maxillary sinus is disengaged, and then it is necessary to clear the operative field of pus.

Hajek pronounced himself against Weil in the contention that irrigations can be made as easily through the natural opening as by the opposite orifice, for observations speak against this hypothesis. The determination of cure is not as difficult as certain authors have said. When the cavity suppurates no longer Hajek closes the hole, and maintains it thus from four to six weeks. When, then, the sinus remains dry, we have a sign of certain cure. Hajek does not adopt the ideas of the preceding speaker as to etiology. The opinion, based on the researches of Dmowchowski, according to which, in the course of an acute suppuration, the mucosa returns to the normal, and the stagnant pus acts as a foreign body, is not verified by practice, for our cases always concern an ulterior period where the mucosa itself is inflamed, and suppurates constantly. Hajek has often observed spontaneous cures of acute empyemas; but he is opposed to Weil when the latter contends that suppurations consecutive to acute coryzas are empyemas, this opinion wanting a basis. Hajek is not also of opinion that most empyemas of the antrum rebellious to cure have their origin in complicated ethmoidal suppurations, which fails in proof. Without doubt this is often produced, but not in all incurable empyemas of the maxillary sinus. Hajek is certain that frequently, in spite of the absence of complications, affections of the antrum are not cured. We do not know to what to attribute this peculiarity.

Meeting, 7th May, 1896.

President—Prof. CHIARI. Secretary—Dr. SCHEFF.

CHIARI made remarks upon the communication made at the last sitting by Panzer on a *Suppuration of the Right Antrum of Highmore*, with penetration across the palatine arch near the middle line. He made a larger opening through the inferior meatus, for there already existed a small perforation, and sounding through the maxillary orifice could not be performed. Irrigations were made through this opening until the cure of the palatine abscess. As the patient was obliged to return to his village, a small opening into the antrum was made across the alveolus, through which irrigations were made, and the antrum then tamponned with bands of iodoform gauze. This was done with the object of facilitating irrigations by a country doctor not familiar with the specialty.

WEIL terminated the discussion on suppurations of the nasal sinuses of the nose. He expressed his astonishment at the remarks made as to the paternity of irrigations across the maxillary orifice; he had quoted all the publications relating to it *à propos* of his first case, which he had

related on the advice of Stoerk. He was happy to have met with marks of approbation ; refutations of his ideas proceeded mostly from misconceptions. When Roth thinks that partial resection of the middle turbinated is often an important operation, he remarks that, on the contrary, the wall of this cavity remains intact, to which he attaches great importance, and that the wound is cicatrized in fourteen days, whilst the artificial opening ought to remain patent during the whole duration of the treatment. When Roth and Hajek raise anatomical objections to sounding, he would observe, on the contrary, that he has never met with them, in spite of the fact that he has had much difficulty in about twenty per cent. of his cases ; and in the frontal sections of the nasal cavity described by Zuckerkandl, he has found nearly one-fifth of cases where it would have been impossible to sound after having attempted occlusion. He does not find any contra-indication of the operation made in a region infested with pus : it is often done for polypi, ethmoidal suppurations, etc. ; and when Hajek operates by Cooper's method, he also always makes a passage across the healthy bones into the cavity often filled with pus. He would not enter into discussion of Scheff's question as to the causes of empyema of the antrum, for he had approached this subject only from a theoretical point of view, and he would be glad if his colleagues would accept that only for cases of nasal origin, which, in his opinion, constitute ninety-nine per cent. of the whole.

As to the possibility of complete methodical irrigation across the maxillary orifice, he could only rest on his own experience ; but he would propose the following means of control : he would irrigate through the maxillary orifice in cases operated upon by Cooper's method, then withdraw the tampon from the alveolar fistula, and irrigate by this channel. According to Hajek, we can easily determine perfect cure ; but how can we control an ulterior occurrence after closure of the artificial opening ? He could from time to time control his cases, and eventually recommence treatment. His etiological views are not, as Hajek believes, based upon the experiments of Dmowchowski, but on his own clinical observations. He had already partially announced them at the meeting of the 2nd May, 1895, when he had announced his communication for the autumn, whilst Dmowchowski's work had only appeared at the end of October ; however, he is rejoiced to find that this author agrees exactly with the ideas which he had arrived at when five years ago he had cured five patients by irrigation, which decided him to treat all empyemas of important sinuses by this method. The success of this proceeding is proved by the cure of the patient shown after seven irrigations, a case which must cause his opponents to reflect. An explanation of this fact must be found. Here at the end of nine months, equally as well as in the observations recorded one or two weeks after operation, there has been no recurrence. He has not reckoned amongst empyemas all the suppurations consecutive to acute coryzas, but he has attached a special importance to the abundance of matutinal secretion (after rising), the frequent unilateral character of the suppuration, and the coincident symptoms (swellings of the cheeks, pains in the healthy upper jaw, etc.). When we completely consider the anamnesis, we meet with numerous analogous cases.

As to his clinical remarks *à propos* of complicated ethmoidal suppurations, he has said that he will embody his opinions in a memoir upon ethmoidal suppurations. He had now spoken in the hope that his colleagues might try the treatment of obstinate empyemas of the antrum. The operative method of Chiari is the one which he preferred, for it well avoids those accidents formerly recorded. He would not like an error made as to the tendency of his experiences. Naturally he had no intention of pronouncing against operations, but he desired to raise his voice against the abuse, growing more and more, of operations more or less extensive in all cases, and against the rejection of simple sounding of the orifice. This means should be first tried in all cases, and, as Killian remarks, we shall derive results increasingly satisfactory from its practice.

HAJEK. *The Pathological Modifications of the Ethmoidal Cells in Inflammations of the Nasal Mucosa (Necrosing Ethmoiditis).*

Woakes, in 1885, for the first time approached this subject. He spoke of a particular affection of the middle turbinated, commencing in hypertrophy, and producing, as a consequence, a necrosis of the osseous lamellæ. We see nasal polypi develop which may often give rise to abscess of the maxillary sinus.

Although in the same year Woakes completed his memoir and added microscopic plates to facilitate its comprehension, his work has been much attacked, and few authors have adopted his ideas. The words which end Woakes' work are very important as to the question of nasal polypi, for they say that these polypi are not primary affections, but a sign of necrosing ethmoiditis having commenced in alterations of the mucosa. Unfortunately Woakes' article was so ill-expressed and his figures so confused that his researches have been either passed in silence or judged very severely. Semon has placed a point of interrogation before his hypotheses, and M. Schmidt observed that he saw in the communication of the English author a series of diverse affections united under the name of one affection. Zuckerkandl has refuted, in a logical fashion, Woakes' results, saying that he had never met with osseous necrosis in any case of nasal polypus, but that on the contrary, the osseous parts situated at the base of numerous polypi were lengthened and softened. In spite of these contradictions Woakes did not cease to seek for new proofs of his views. In 1889 he published new researches, the interest of which consisted especially in the fact that the anatomical portion of them was conducted by Martin.

These investigations showed that in twenty specimens there were met with two cases of osseous necrosis, ten times partial absorption, and in eight cases the bones were intact. After this Woakes anew promulgated his necrosing ethmoiditis, although it was clear that Martin's researches did not prove the existence of a necrosing ethmoiditis.

In recent works Woakes' theory has not recruited any more followers, although Grünwald is said to have met on many occasions with necrosis in the living subject. The Annual Meeting of British Laryngologists in 1895 demonstrated the diversity of ideas on this point. Most speakers pronounced themselves against the opinions of Woakes, and

denied the existence of necrosis and its participation in the formation of nasal polypi. Whilst up to now the discussion had borne on the question of absence or existence of necrosis in nasal polypi, Zuckerkandl has opened a new horizon by the statement that the osseous layer situated under the polypi and the hypertrophies is itself hypertrophied—that is to say, that its condition is just the contrary from what Woakes contends. The author has made researches upon the living subject, which has the advantage of presenting at the same time the clinical picture. He has examined seventeen cases of hypertrophied degenerated turbinateds, and twelve cases of polypi with their osseous apophyses. The latter is obtained by evulsion. The hypertrophies and the polypi presented in some cases the appearance of profuse rhinitis, in others they were accompanied by empyemas of secondary importance. To the touch of the probe certain hypertrophies revealed a slight friability of the subjacent osseous layer.

In order to understand the anatomical conditions we ought first to undertake a preliminary research upon the normal mucosa and the bones which are connected with it, of which the principal points are here reproduced. If we examine an entire middle turbinated in order to study the relation of the mucosa and the bones, we shall be struck by the spongy character of the osseous portion. There exist large and small spongy spaces, and there is always a large cavity of the middle turbinated. It is very important that the large and small spaces should be open largely in diverse spots from the surface, in such a manner that the medullary spaces, often repeated, form a solution of continuity with the mucous investment. Most of the medullary spaces contain a little fat, and consist especially of cicatricial areolar tissue and medullary cells; others contain more fat, whilst some contain both. The importance is that there does not exist any contact between the deep layer of the mucous membrane and the medullary tissue, so that an inflammation of the mucosa cannot penetrate into the medullary space. The other parts of the ethmoidal bones offer the same spongy character.

Microscopic sections of the middle turbinated, of the ethmoidal labyrinth, and of the uncinate process were presented, in which are distinguished the relation between the mucous investment and the medullary spaces. In the normal condition it is easy to understand pathological modifications. We can, according to their intensity, divide into three categories the changes observed in excised inflamed turbinateds. The first class comprises infiltrations of the surface of the mucosa, when the deep layers are intact. The second class can be designated deep inflammation, because it is characterized by an infiltration, not only of the whole thickness of the mucosa, but also of all the medullary spaces which are connected. Sections are shown.

In these cases of deep inflammation the whole turbinated is infiltrated, and in the middle of the inflamed tissue the osseous trabeculae remain intact. It is easy to understand that when the periosteum and the medullary spaces are infiltrated, the bones cannot remain indefinitely normal. In most cases of prolonged inflammation, there are produced osseous modifications of two kinds—hyperplasias and rarefactions; these

latter may be considered as the third class of modifications. It will be recognized in all the sections that the osseous changes are only the result of inflammation penetrating from the surface into the depths, and never is there seen any osseous modification without participation of the soft parts.

Of seventeen cases of hypertrophy of the middle turbinated examined, six presented only a superficial inflammation of the mucosa, eleven a deep inflammation, extending also to the medullary bone: three cases presented an osseous hyperplastic tumour, and in four cases rarefaction was clearly seen—that is to say, the lacunæ of Howship and osteoclasts. In the latter cases the osseous trabeculæ were thinned out, and the medullary spaces enlarged. We remark that in most cases of osseous modifications there is never hyperplasia or rarefying osteitis, but both at the same time, a fact which has been long since known by anatomists. The details of microscopic examination will be furnished by sections and drawings.

Hyperplasia is due to the excitation and proliferation of periostitis allied to congestion of the mucosa, whilst rarefying osteitis proceeds probably from nutritive trouble of the bones arising from accidents of circulation. The latter are explained easily by the cellular infiltration of the medullary spaces and partial compression of the veins. It follows from these researches that rarefying osteitis does not play a preponderant *role*, but is accessory in the course of inflammations penetrating from the surface downwards. Woakes has therefore committed a great *lapsus linguae*, when he places necrosis, or, rather, rarefying osteitis, in the first rank of manifestations indicating the presence of polypi. What has been said as to hypertrophies applies equally to polypi; it follows that the latter are only an œdematous hypertrophy. Of the twelve cases examined, four presented superficial modifications of the mucosa, and eight a deep inflammation, *i.e.*, an infiltration of the subjacent osseous layer; in two of these latter hyperplasia was found, and in three cases an important rarefying osteitis. Here, also, rarefaction of the bones is only accessory, and has no characteristic value for polypi, for the latter, before everything, originate in inflammation of the peripheral mucous layers. There does not exist any example proving the dictum of Woakes, who affirms the contrary, *i.e.*, the origination of polypi from the medullary spaces.

At the close of his communication on necrosing ethmoiditis, Hajek made some remarks upon the appearances of œdematous medullary tissue in amputations of the middle turbinated. This tissue may easily be confounded with a polypus, and differs only in the absence of a solid envelope (mucosa and epithelium).

The presence of this particular tissue explains how this tissue, meeting with slight resistance (the open spongy space of the middle turbinated), is inflamed, and easily becomes œdematous.

In certain circumstances cannot a polypus be attributed to primary inflammation of the medullary spaces? This idea ought not to be dismissed *à priori*, but we must observe that there exists no proof of this opinion. It might be possible, also, that obstinate recurrences of inveterate polypi might be explained, at least partly, by the infiltration of

the spongy characters. Perhaps the base of the polypus is formed of osseous trabeculæ separated by infiltrated medullary spaces offering little resistance, and disposed to become inflamed from their facility of excitation. This latter idea, however, can only be considered to be hypothetical. As to the relations of rarefying osteitis with necrosis and caries, there is never any formation of a sequestrum, for the osseous tissue is absorbed and lost in the medullary space ; this is not a caries, for the absorption of osseous portions never provokes ulceration or destruction. We may compare the osseous rarefactions with the absorption of the turbinated bones in atrophic rhinitis ; it is never followed by the formation of any sequestrum, or with ulcerative destruction. The author will publish a detailed memoir in Fraenkel's "Archives für Laryngologie."

DISCUSSION.

WEIL asked if in his sections Hajek had not found places where the mucous membrane left the bones exposed, and where one would not have been able to feel it with the probe ?

As to Hajek's hypothesis as to the recurrence of nasal polypi, Weil believes the clinical explanation to be very easy. On extracting a polypus and removing an osseous fragment we very often find the other side (the middle turbinated or the internal surface of an ethmoidal cell) occupied by small polypi ; it is, therefore, the remaining mucous membrane of the meatus, and of the ethmoidal cells, which furnish new polypi. Operators who extract the polypi with the cold snare and timidly preserve the bones have frequent recurrences. Weil is glad that Hajek has often found the bones affected, for he has always believed in the existence of a rarefying osteitis in cases where the bones were friable and were easily removed with the polypus. It is difficult to determine if the osteitis is primary or secondary ; and at the meeting of naturalists in Vienna in 1894, the author admitted the opinion that those questions would be solved by the histological examination of osseous parts extirpated on the living subject.

PANZER, in opposition to Hajek, said that polypi might arise from other causes than sanguineous deposits and consecutive œdema, because on histological examination many polypi exhibit not only an œdema, but other important modifications : hypertrophy of the mucous glands, etc. As to the appearance of œdematous masses at the point of rupture of the anterior extremity of the middle turbinated, which Hajek considers to be an œdema of the medullary bone consecutive to excision, Panzer remarked that we often meet with small polypi consequent upon the extraction of osseous parts of the anterior extremity, and that they proceed from a cavity of the middle turbinated, which is opened at the same time as the bones in removing the anterior extremity.

ROTH : Panzer has badly misunderstood the author, for the latter has clearly explained that the polypoid vegetations appearing a little time after the amputation of the anterior extremity of the middle turbinated are not polypi covered with mucous membrane and epithelium, since they disappear when they are enclosed in the snare ; they are rather an œdematous medullary substance. The tumours existing in the turbinated

are often polypi, as Panzer had observed in the course of an old nasal suppuration after amputation of the anterior extremity of the middle turbinated with the snare, and which case he had published *in extenso*. Moreover, we know that we frequently meet with true polypi in the ethmoidal cells, and that a bulla of the turbinated is nothing more than an ethmoidal cell, which makes the existence of polypi nothing surprising.

CHIARI said that osseous wounds are always covered with granulations, which is often seen after removal of spines of the septum. Contrary to Weil, he would advise, in evulsion of the polypus, not to attack so resolutely the ethmoidal bones, because the old surgical method, consisting in removing the turbinateds with forceps, did not preserve from recurrences. We should not fear to remove some osseous fragments at the base of the polypus, and to open the ethmoidal cells when they give origin to polypi. The principle is always to extract polypi even when small, and to remove all hypertrophies which might produce polypi. Chiari is of the same opinion as Hajek, that polypi and hypertrophies proceed from a chronic inflammation, in which the bones may participate, as Hajek has shown. Chiari observed that in the large naso-pharyngeal polypi it is not rare to meet with osseous lamellæ, having no relation with the bones at the point of implantation (for example, the middle turbinated); moreover, there almost always exists chronic inflammation of the soft parts of the bones of the neighbouring parts; so that participation of the ethmoidal cells in inflammation of the soft parts surrounding the polypus need not surprise us.

HAJEK: The œdematous tissue proceeding from the medullary spaces has nothing to do with polypi of the degenerated turbinateds, or of the ethmoidal labyrinth; the latter are true polypi, while the former have no envelope. He has never believed that polypi result from an œdema, but that they are an œdematous hypertrophy, an opinion generally adopted by rhinologists of the present day. He must answer negatively as to the existence of cases where the bones were naked and mucous ulcerations discovered, for in cases not complicated with syphilis or tuberculosis the author has never found ulcerative destruction or denuded bone, which would not alter the possibility of the opening of an empyema being able to give rise to partial necrosis of the mucous membrane and bones. The author's present work has been particularly concerned with typical modifications, and not accidental complications.

Meeting, June 11th, 1896.

President—Prof. STOERK. *Secretary*—Dr. GROSSMANN.

CHIARI exhibited a man, fifty-two years of age, who since February, 1895, had had hoarseness and pains in the left shoulder and half of the head. These symptoms were then attributed to an aneurism of the arch of the aorta, and a total paralysis of the left side of the larynx with

cadaverlic position of the vocal cords was observed. Since about six weeks the left ventricle has commenced to move posteriorly during phonation, whilst the concave true vocal cord and the arytenoid cartilage remain completely immovable. This peculiarity is still observed. Similar facts have already been observed in cases of recurrent paralysis; but this case is interesting, because since the onset of recurrent paralysis the left half of the larynx has been entirely immovable, and it is only much later that the ventricle has recovered its motility. Perhaps there was here a participation of the recurrence in the atrophy depending upon the aneurism. The patient will continue under observation.

STOERK gave a historical retrospect of the development of œsophagoscopy, accompanied with demonstrations of various instruments which he has employed. He gave a long description of an œsophagoscope with an articulated handle recently perfected by him. The instrument is introduced, curved like a bougie. He demonstrated its use on two patients.

EBSTEIN showed an instrument which he employs for endoscopic dilatation of caustic strictures of the œsophagus which resist the treatment of bougies or catgut introduced through the mouth. The dilatation is effected by tents of laminaria, introduced into the œsophageal tube by the aid of a simple instrument under the control of the eye. This instrument consists of a narrow sound (13 *chavrière*) 15 centimètres long, to the extremity of which is adapted a conductor furnished with two branches of small forceps. These latter are dentated on the edges. The other extremity is furnished with a screw controlling the movement of the branches, and curved to an obtuse angle so as to be better manipulated. It might be attached to a handle, which would not affect its weight. In the tubular forceps are inserted long and thick tents of laminaria and a solid thread of silk, which is fixed by a knot. With a little practice the introduction is easy. The instrument and the tube are then withdrawn, leaving the laminaria tent in the stend partose until it is necessary to remove it through the mouth by the aid of the silk thread. The application can be made for a more or less long time, without having to fear the effects of dilatation provoked by Senator's method. This method is especially suited to narrow strictures otherwise impermeable. It is less suitable for cancerous strictures. It succeeds perfectly in annular and short tubular strictures, and it can also be employed in disseminated stenoses, in order to dilate the uppermost parts, and practise introduction of bougies into the deeper parts.

EBSTEIN showed a child of seven years of age, in whom in four sittings he had succeeded in dilating the orifice of the annular retracted parts, which would not allow catgut to pass, with the result that he had abandoned a projected gastrostomy.

CHIARI showed a large soft tumour, six centimètres long, four centimètres broad, and five centimètres thick, which rose from the ary-epiglottic fold and descended to the second tracheal ring. On the patient it changed form. By reason of its dimension and the numerous vessels that it enclosed, Chiari extirpated it by laryngo-fissure.

R. Norris Wolfenden.