The author has been able to isolate the single part of the recurrent nerve, and to show that the isolated recurrent nerve always produces abduction without any contraction of an adductor muscle. By this method of isolation he was also able to show that, after death, the muscles die one after the other, beginning with the musculus posticus. Some branches of the sympathetic nerve participate in the innervation of the larynx. The accessory nerve has no relation to the muscles of the larynx. In a dog the author has found a phonatory centre eight millimètres in length in the region of the corpora quadrigemini and the corresponding part of the fourth ventricle. The phonatory centre discovered by Krause was also confirmed by the author. The paper concludes with a detailed description of a pathological case, which is a clinical confirmation of Semon's abductor theory.

Michael.

ASSOCIATION MEETINGS.

BRITISH MEDICAL ASSOCIATION.

Meeting, August, 1895.

SECTION OF LARYNGOLOGY.

The Representation of Abduction of the Vocal Cords in the Cerebral Cortex. By J. S. RISIEN RUSSELL, M.D., Assistant Physician and Pathologist to the Metropolitan Hospital.

The author first alluded to the fact that others who have preceded him in this field of experimental research have been able to demonstrate the existence of a focus in the cerebral cortex, excitation of which results in abduction of the vocal cords. This was first shown by Krause in the dog, and was confirmed in the dog, cat, and monkey by Semon and Horsley, who in an elaborate investigation discovered many new points of great importance with regard to the central innervation of the larynx. These observers were unable to find any representation of abduction of the vocal cords in the cortex of the dog and monkey, and attributed its occurrence in the cat to some peculiarity associated in some way with the special respiratory requirements of this animal. But certain considerations suggested to the author that it was probable that a focus for abduction of the vocal cords exists in the cerebral cortex even in animals in which other observers had failed to detect it. Among these considerations was the fact that Semon and Horsley obtained abduction from the cortex of the cat, and, further, that they demonstrated the existence of a focus in the internal capsule, excitation of which resulted in abduction of the vocal cords in the dog and in the monkey. Unless it were assumed that these experimenters were exciting some abductor centre in the region of the basal ganglia, which was extremely unlikely, the most natural supposition was that they were stimulating excitable fibres of the internal capsule, which were connected with a certain part of the cerebral cortex, the grey matter of which, if stimulated, would yield abduction of the vocal cords.

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It seemed not unlikely that this focus in the cerebral cortex might be situated close to that from which adduction of the vocal cords had been obtained, but that the adductor representation was so powerful that it was impossible to obtain a stimulus at once strong enough to evoke abduction of the cords, and delicate enough not to spread to, and evoke from the more powerful abductor centre a liberation of energy capable of overpowering the effect from the less powerful abductor centre. In order to make it possible to demonstrate the existence of an abductor focus in the cortex, under such circumstances, it was necessary to lessen or abolish the abductor effect on the vocal cords, and the simplest way that suggested itself as likely to effect this was to divide the adductor fibres in one or both recurrent laryngeal nerves, leaving intact the abductor fibres.

This led to his making use of a former observation, in which he found that it was possible to separate, in the recurrent laryngeal nerve, the abductor from the adductor fibres, so that stimulation of one bundle resulted in abduction of the vocal cord, and of the other in adduction.

The adductor fibres were accordingly separated from the abductor in one recurrent laryngeal nerve, and the former bundle of fibres was then divided transversely, leaving the latter bundle intact, after which it was found possible to evoke abduction of the vocal cords in the dog on excitation of the prorean convolution in front of and below Krause's adductor-centre, the two foci being separated by the supra-orbital sulcus. The division of the adductor fibres in one nerve was found sufficient to allow this result to be obtained, and under these conditions excitation of the prorean convolution of either cerebral hemisphere resulted in abduction of both vocal cords, while excitation of Krause's adductor focus naturally only resulted in adduction of the vocal cord, the adductor fibres of whose recurrent laryngeal nerve were intact. The advantages of being able to leave the adductor fibres in one nerve intact was great, as it allowed abduction and adduction of the vocal cord to be evoked on excitation of their respective cortical centres, at the same stage of ether narcosis.

Having once determined the existence of this abductor focus in the dog, in the way described, it became possible to evoke the movement in some dogs without adopting the preliminary measure of dividing the adductor fibres of one recurrent nerve. In such animals it was found that the movement of abduction could best be evoked from the anterior composite gyrus, below the adduction centre and slightly behind the point on the prorean gyrus from which it could be obtained when the adductor fibres of one nerve had been divided.

Both foci were, however, close together with the supra-orbital sulcus separating them.

On turning his attention to the cat, he found, in confirmation of Semon and Horsley, that adduction of the vocal cords was sometimes to be obtained on excitation of a point just above and in front of the anterior end of the coronal fissure, corresponding to that discovered by Krause in the dog ; but that it was more frequently to be obtained when the coronal convolution was stimulated a little posterior to its point of junction with the anterior composite gyrus.

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With regard to abduction in the cat, he found that it was possible to evoke this movement on excitation of a point on the prorean gyrus corresponding to that from which he was able to obtain the same movement in the dog after division of the adductor fibres in one recurrent nerve.

The cat differed from the dog in that this movement could always be obtained from the prorean gyrus without previous section of the adductor fibres of one recurrent nerve.

The focus on the prorean gyrus from which abduction was obtained in the cat was shown to be quite distinct, and widely separated from that from which Semon and Horsley were able to obtain the movement in this animal. The probable nature of the focus determined by these observers was discussed, and the author pointed out that he had found a similar focus in the dog also.

Excitation of this point on the lower border of the hemisphere, in the anterior composite gyrus, just above the rhinal fissure, resulted in his hands in arrest of the vocal cords in abduction both in the cat and dog. Further, in both animals, there exists a focus on the anterior composite gyrus, in front of that last described, and just behind the junction of the lower end of the supra-orbital sulcus with the rhinal fissure, from which he was able to arrest the vocal cords in adduction, *i.e.*, in the expiratory phase of their excursions.

The paper was illustrated by lantern slides of the cærebral hemisphere of the cat and the dog, and by others of tracings of the movements of the vocal cords obtained by means of an india-rubber bag inserted between the cords, communicating with a Marey's tambour by means of an india-rubber tube, and the writing point connected with the tambour recording on the blackened surface of a Hürthle's kymographion.

The Etiology of Mucous Polypi of the Nose. Introduced by Prof. GUYE (Amsterdam), Dr. LUC (Paris), Dr. MCBRIDE (Edinburgh).

Prof. GUYE: In this paper I propose considering two theories, those of Woakes and Grünwald. Woakes considers nasal polypi the result of necrosing ethmoiditis; Grünwald as secondary to empyema of the accessory nasal cavities. Zuckerkandl has criticized both theories, and I agree with him when he says there is not sufficient pathological evidence brought forward to substantiate either.

My clinical experience accords with Zuckerkandl's opinion, which is supported by his own extensive pathological investigations. My own opinion is that to the etiology of nasal polypi Goethe's words are applicable: "In's innere der Natur dringt kein erschaffner Geist." In my own investigations, whilst finding no cause for the majority of nasal polypi, yet amongst these were a few where I found such a cause, but the very rarity of these cases confirmed me in my opinion that we have no right to generalize from these cases.

In one case I found nasal polypus alternating with common fœtid ozæna, as follows: a young lady, who had been successfully treated by me for ordinary fœtid ozæna, returned after one year with simple nasal polypi, after the removal of which she began again to suffer with ozæna, which quickly disappeared under the treatment previously adopted. In

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another case I had operated on a middle-aged gentleman for empyema of Highmore's antrum, and during the subsequent treatment, which was much protracted owing to the irregular attendance of the patient, I discovered numerous polypi springing from the edges of the foramen maxillare, and obstructing the passage of fluid injected into the antrum through the alveolus. This is the only case in which I have seen nasal polypi produced by empyema of the antrum.

In a third case I found one nostril completely blocked by polypi, and on removing them I found as the probable cause of their formation a large rhinolith, the removal of which cured the patient. Since writing the above in reference to the antrum of Highmore I have seen one similar case where the nasal polypi were the result of empyema of the frontal sinus. Beyond these three cases I could not add many where I could assign any definite cause for the formation of nasal polypi.

Chronic catarrh, an irregular septum narium, and habitual mouth-breathing may or may not have an etiological bearing in this respect; for though they are often found in combination with nasal polypi, yet they are more often met without. The same can be said of rhinoliths, empyema, and ozæna. The conclusion to which this points is that we must ascribe to the mucous membrane a peculiar predisposition which makes it produce nasal polypi as a reaction to noxious influences of very different natures. I may also allude to the climateric influences of some places. There is a place in Holland from which I have seen an immense number of patients with nasal polypi, and one of them told me that it was the popular opinion amongst the inhabitants there that nasal polypi were of unusual frequency amongst them. This may be quite fortuitous and easy of explanation by the fact that patients suffering from a certain disease always hear of a number of similar ones, and easily get a false impression as to its frequency. For this reason I, at present, withhold the name of the place, and I only mention it as a hint to further observation in this direction, which, in the future, might throw some light on this question. Although I am prepared to admit it as possible that either histological, bacteriological, or other researches will some day afford us a more definite etiology, yet for the present we must be satisfied with the rather eclectic theory which I have sketched.

The Etiology of Mucous Polypi of the Nose. By P. McBRIDE, M.D

In a meeting of this kind it seems hardly desirable to define the term "mucous polypus," yet this is almost an essential preliminary to any discussion of the subject. I suppose that most of you will agree in accepting my definition, viz.: a mucous polypus is a tumour of the nose, having the following characteristics—(1) a smooth or more rarely a lobulated surface, (2) a greyish-blue colour, sometimes merging into a delicate shade of pink, (3) a tense appearance and feeling, (4) a jelly-like consistence. If I add that the attachment may be a broad or thin pedicle, I shall, perhaps, have given sufficient details for the present purpose.

The question of etiology may be approached either from the pathological or clinical aspect, and perhaps it will be well to consider the data

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furnished by each. As you are aware, most observers are now agreed that the microscope shows mucous polypi to be simply œdematous fibromata. They generally grow from the upper and anterior part of the nose, being frequently attached to the walls of the middle meatus, and more rarely to the free edge of the middle turbinated body. I am not aware that growths corresponding in character to mucous polypi have often been seen to spring from the inferior turbinated body or below it. On the other hand, in the last-named situation we meet with a variety of tumour which has been described as papilloma. It differs from the mucous polypi in its red colour and papillary surface, but its microscopic structure is similar. Such growths rarely, if ever, spring from the upper regions of the nose. We have, then, two varieties of growths differing in microscopic characters only, but histologically identical; one is found almost universally growing from the upper parts of the nasal cavity, while the other is usually only found in the lower. This fact gives good cause for reflection, and would lead us to believe that position has much to do with the macroscopic characters of polypi. If we once admit this, it follows as a corollary that their etiology can in part be explained by physical laws.

This is a conclusion which we can also reach by another chain of reasoning. Polypoid tissue is excessively œdematous, and obviously the œdema must be increased by the pendulous position which the growths nearly always assume. Œdema causes increase of size; therefore, part of the growth in bulk, at least, must be explained by physical laws.

It has always appeared to me that this hypothesis is self-evident, and I am quite aware that somewhat anolagous theories have been held by others. Even if we admit so much, however, we are still far removed from any satisfactory explanation of the initial stage. It is very easy to frame an hypothesis which may explain certain cases. Thus, we may assume that at some particular point, whether as a result of inflammation or as a consequence of the pressure of a small vascular loop, a projection of the mucous membrane occurs and hangs downwards. If we admit so much it follows that we can explain the occurrence of a single polypus, for wherever one hypothetical projection has become pendulous its increase in size will have been assured. Even if we accept this as correct, it is difficult to understand why polypi should be usually multiple. It appears to me that the explanation of the origin of nasal polypi which I have suggested and which I believe to be, so far as it goes, correct for certain cases is incomplete in some important particulars. We must, therefore, assume some abnormal condition of the mucous membrane to start with. I cannot believe that inflammation alone is enough to account for more than a proportion of cases. I can understand that if the mucosa on the edge of the middle turbinated body or margins of the hiatus semilunaris becomes inflamed irregular excrescences may develop, and these aided by gravity may finally become polypi. In all likelihood the growths as frequently associated with empyema of the antrum originate in this manner. Again, it must be remembered that the favourite seat of origin of polypi is the anterior region of the middle meatus, just where irregularities of the mucosa are normally found, and this fact may be adduced

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in favour of an inflammatory origin in certain cases. My own clinical experience, too, leads me to think that the anterior part of the nasal character is the most common seat of multiple growths, and the nearer we approach the naso-pharynx the less is the tendency to multiplicity. I need only remind you of the comparatively frequent occurrence of single growths attached to the margins of the choanæ—the so-called fibro-mucous polypi. Again, I suppose that most of us are familiar with the condition known as polypoid hypertrophy. The most typical specimens I have seen originated from the free margin of the middle turbinated body. In some instances these enlargements when removed show very distinctly two microscopic characters, (1) the part nearest the seat of attachment is pink and readily recognized as simple hypertrophy; (2) the part which is furthest from the seat of attachment is grey, translucent, gelatinous—in short, presents the characteristics of polypoid tissue.

The deductions I should feel inclined to draw from the above data are: (1) That gravity is an important factor in the production of polypi; (2) that in a certain proportion of cases inflammatory changes alone may be the starting-point of the disease.

I fear, however, that many cases cannot be explained by this simple conclusion.

Thus we are all too familiar with noses in which, even after the most careful removal and cauterization, a few weeks' absence of treatment is followed by rapid recurrence. When such a case is seen after, it may be only a month, the whole of the middle meatus looks as if it were producing small growths, perhaps, about as large as currants, and closely packed together. For such cases some other explanation must be sought, and I fear that so far no data have become available, by means of which we can with any certainty trace the cause. I suspect that the fault lies with the mucous membrane, and it is just possible that histological examination of the middle turbinated region carried out on a number of specimens might show deviations from the normal in some instances which if exaggerated would give rise to polypi. Again, it is possible that a similar line of investigation, carried out in cases where polypus formation had just begun, might throw light upon what we must consider a dark spot in rhinology.

I have already referred to the papillary growths, which are found attached to the lower parts of the nasal chamber. You will remember that these have been shown to be identical with polypus in histological characters. A tempting hypothesis would be that such papillary degeneration may occur in the upper regions, and that then the projections hang downwards and develop into polypi. However, we have no proof that this ever actually occurs, and my own clinical experience is against the occurrence of macroscopic papillary swellings in the upper parts of the nasal chambers. It is, however, conceivable that microscopic papillæ may precede the occurrence of polypi.

You are of course aware that Dr. Woakes has attempted to show that necrosis of the middle turbinated bone is the cause of nasal polypus, in most, if not all cases. I am quite prepared to admit that in a certain proportion of cases empyema of the ethmoidal cells may, and does, give

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rise to polypoid growths, but to state that disease of bone is the primary lesion in all cases of polypus is obviously a mistake. The objections which give the *coup de grâce* to this theory, are—

1. That no satisfactory proof has been adduced in its support ;

2. That where the muco-periosteum is converted into gelatinous tissue, the probe is certain to reach the bare bone, if it be employed with even moderate force ;

3. In many cases of polypus we have none of the symptoms commonly associated with disease of bone, viz., copious suppuration, etc.

Grünwald ("Die Lehre der Naseneiterungen," p. 52) has committed himself to the statement that in most cases polypi are pathognomic of empyema of an accessory cavity.

This assertion is founded on a comparatively small number of cases—thirty-three in all. Of them he tells us that only in five was no affection of an accessory cavity diagnosed, although he hints, that in one at least, it may have existed.

I would ask those among you who have read Grünwald's work, whether you consider it possible to diagnose ethmoidal empyema, as described by him in cases of well marked nasal polypi, with the growths *in situ ?* You will recollect that he relies upon the presence of pus, and indications of bare bone in the region of the middle turbinated body for his diagnosis. After the removal of the growths, both these conditions —especially the second—may possibly exist as a direct result of surgical interference, and also because, in mucous polypus, the muco-periosteum is degenerated, and so admits the probe readily to the surface of the bone. For this and other reasons I consider that Grünwald's statement is much too sweeping. At the same time, it must be admitted that many cases of supposed polypus are actually the result of empyema of one or more of the accessory cavities, usually, in my experience, the antrum of Highmore. I do not know that the polypi, produced by this cause, can always be distinguished from others ; but in a large proportion of cases they present certain peculiarities. Thus, not uncommonly, they are of a distinctly red colour ; they bleed more readily when touched ; pus is present in the nostril, and the patient complains of a bad taste and smell, while frequently the affection is unilateral, although occasionally these mucous polypi are confined to one side. While I admit these differences, still the appearances resulting from empyema of the accessory cavities are often so like true polypus, that we cannot, in all cases, distinguish one from the other.

My own view then as to Grünwald's statement is that while it contains an element of truth it must be accepted with caution. Those of us whose experience considerably surpasses thirty-three cases of mucous polypus will probably arrive at the conclusion that in a considerable proportion of cases the cause is to be sought in empyema of one of the accessory cavities, but that in a very much larger proportion we have to do with growths which owe their origin to some other cause or causes.

In cases of that very rare affection, coryza caseosa, a polypoid mass, which is usually of a somewhat red colour, and bleeds freely when

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touched, is commonly—so far as the term is applicable—found. It is somewhat remarkable, and at the same time indicative of the difficulties with which our subject is beset, that in discussing the etiology of nasal polypus it is hardly necessary to refer to the histories given by patients because they yield practically no assistance in arriving at a conclusion.

It has struck me, however, that in conclusion, it may not be altogether uninteresting to lay before you a very rough analysis of 114 cases of nasal polypus, extracted from my hospital records. The data are somewhat meagre, as they simply comprise such facts as name, age, residence, occupation, and diagnosis. Out of the 114 cases I find that 63 were males and 51 females. In 103 patients the ages were noted, and the results may be briefly stated thus—

Age.	Male.	Female.	Total.
1—10 years	1 (age 8)	1 (age 8)	2
10—20	4	5 (youngest 11)	9
20—30	17	17	34
30—40	7	11	18
40—50	12	3	15
50—60	7	6	13
60—70	8	3	11
78—80	1	0	1

From these figures we may deduce the following data with regard to hospital cases—

1. The disease is rather more common in males than in females.

2. It is most common between twenty to thirty years of age.

3. It is least common at the extremes of life, *i.e.*, under twenty and over sixty.

With regard to occupation I have not been able to trace its influence. I may, however, mention that the occupations were noted in seventy-five patients, and fairly representative of the class of persons who frequent our hospitals. The following list comprises all those callings which supplied three or more cases :—

	Number of cases.
Coachmen	3
Clerks	5
Constables	3
Domestic servants.....	7
Engineers	5
Housewives	7

As I have said, these cases were all taken from my hospital records, and, therefore, refer to the poorer classes.

For the sake of comparison I have collected eighty-nine cases from the records of my private practice. In these notes I take of my private patients I do not, as a rule, mention the profession, so that data on this point are wanting.

Among the eighty-nine patients there were forty-six females and only forty-three males. The age was stated in seventy-seven instances, and give the following results :—

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Age.	Male.	Female.	Total.
1-10	0	0	0
10-20	1 (aged 10)	1	2
20-30	3	5	8
30-40	6	9	15
40-50	6	7	13
50-60	12	5	17
60-70	10	8	18
70-80	1	3	4

These statistics form a very considerable contrast with those supplied by my hospital books, and it certainly looks as if social position to some degree modified the course and occurrence of nasal polypus. Thus we find that among the wealthier classes (1) the disease appears to be somewhat more frequent in women than in men. (2) That it is most common after middle life, the greatest number of cases occurring between sixty and seventy as against twenty and thirty in hospital patients.

It is somewhat difficult to explain results derived from my two sets of statistics. I do not wish to insist upon any deduction from them because the numbers are too small to justify sweeping assertions. Only it almost seems as if a hard and exposed life leads in those who are predisposed to nasal polypus to earlier development of the affection. I may be asked why I have not included in my statistics the presence or absence of empyema affecting one or more of the accessory cavities. To this I should reply that while in a certain proportion of my cases I have been able to demonstrate the presence of empyema of the antrum—sometimes bilateral—and in a very much smaller number the existence of ethmoidal and sphenoidal disease (the latter only once to my satisfaction), and while I have occasionally suspected the existence of frontal empyema, I do not think that our present methods of diagnosis are sufficiently exact to enable us in doubtful cases to arrive at a conclusion without exploratory puncture. This last method is really justifiable when applied to the antrum, but in many cases we may suspect frontal empyema, and yet the urgency of the symptoms by no means justifies external operation. Under these circumstances I have avoided any attempt to define the proportion of cases in which inflammation of the accessory cavities leads to the presence of polypi.

(To be continued.)

FRENCH SOCIETY OF OTOLOGY AND LARYNGOLOGY.

The Neuro-motor Affections of the Larynx. Dr. P. Raugé.

The author desired to speak of certain points which he had intentionally neglected in his reports (*see* his extensive paper in the "Revue de Laryngologie," 1895, No. 10).

Motor-laryngeal nervous affections may evidently affect the whole motility of the larynx, but much more commonly they are only partial

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and limited to certain muscular groups, from the irritation of which results contraction or that functional disturbance which produces paralysis. The manner in which these circumscribed alterations are localized certainly represents one of the least solved problems of laryngeal neuro-pathology. Nothing better has been devised up to now than to take each of the muscles of the larynx one after the other; to imagine the consequences which suppression of the function of this muscle (paralysis), or its opposite condition would have upon the fall of the glottis; to construct upon these data a scheme which graphically translates the mechanical trouble, and to deduce from this deformity of image the vocal or respiratory disorder which could functionally result from it. This method then has no other basis than an analysis pushed to excess of the muscular mechanics of the larynx; it neither takes into account the nervous physiology of the apparatus nor the reality of clinical facts.

For this somewhat conventional division, against which I have many times protested, I propose to substitute a nomenclature more simple and certainly more in conformity with observation; it is founded on the analysis of the two normal functions of the glottis and on the comparative anatomical independence of the portions of the nervous apparatus which govern each of them.

The larynx presents, we know, two methods of activity, vocal and respiratory, but each of these two functions possesses different centres, conditions in part independent, in fact, one might almost say two distinct nervous apparatus, and it is not astonishing that these two apparatus, and consequently the two functions that they control, should be often affected singly by morbid alterations.

This dissociation of motor troubles is not merely the only one which is physiologically legitimate—it is the only one verified by facts. We have, then, only to determine the disorders which deviations in one sense or the other of these two modes of physiological activity may produce—in one word, to establish for each of these morbid conditions its laryngoscopic formula and its functional formula.

To lend themselves to the double *rôle* which the larynx must accomplish, the vocal cords take, turn by turn, two opposite attitudes—the one complete abduction, the other extreme adduction, one side and the other from the neutral line which answers to the cadaveric state, and which is their position of inertia. To each of these two attitudes there answers one of two opposite nervous forces, of which one has its origin in the bulb, the other in the cerebral cortex. The regular function of this double mechanism is then intimately bound to the integrity of the two forces which produce this to and fro movement of the cords. In order that these pass freely from one to the other from their two contrary positions, it is not sufficient that the power which produces their displacement may be functionally intact; it is necessary besides that the opposing force may give way when the other is exerted, so as not to impede the movement; so this may be hindered either by default of action of one of these forces (paralysis) or by untimely and continuous action of the other (contraction). The result in both cases will be exactly the same—immobilization of the cords in the position in which

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hey are fixed by the predominant force. Partial systematic lesions of the nervous apparatus of the larynx can therefore realize only two kinds of malformations of the glottis--permanent adduction from contraction of the adductors or paralysis of the abductors, or permanent abduction, which is produced in opposite conditions. If one adds to these two forms the position of cadaveric inertia—it is realized by total paralysis—we see that the troubles of inervation of the larynx are reduced in reality, save for some rare conditions, to the fixation of the cords in one of their three normal attitudes That which makes an anomaly is not the form of the glottis, but the fixity of this form, and the impossibility, when the cord is affected, of quitting at any moment the situation in which it is fixed. Such are the three morbid aspects of which it is appropriate to study separately the mechanism, the laryngoscopic appearance, and the functional consequences.

PERMANENT ADDUCTION.—This is the most important from its gravity, its frequency, and the discussions which it has provoked.

Mechanism.—It is not yet determined what part ought to be assigned in its pathogeny to paralysis and contraction, neither if one of these two mechanisms ought to be entirely rejected in favour of the other ; theoretically, both are possible, and we can equally well imagine the cords maintained in the median position by adductor contraction, or abandoned in this attitude by abductor paralysis.

Laryngoscopic formula.—Malformation dissimulated in the vocal phase (since the action of the adductor is intact or exaggerated), manifest in the respiratory phase ; it is made evident in this case by the narrowing of the orifice, which narrowing is exaggerated in large inspirations to complete occlusion.

Functional consequences.—*Nil* in phonation. Respiratory symptoms consist oftenest in habitual dyspnœa with paroxysmal attacks provoked upon effort which augments the respiratory activity.

Unilateral form.—In phonation the same aspect as the bi-lateral form. In the respiratory phase the glottis closed on the affected side is opened freely on the healthy side, dyspnœic phenomena being more or less completely absent.

PERMANENT ABDUCTION.—The vocal affection par excellence, less grave than the preceding, which affects the larynx in its vital function.

Mechanism.—Two modes of production inverse and in some manner symmetrical to those of the preceding form. Paralysis of the adductors, or contraction of the abductors. Origin is often functional (hysteria) or due to a lesion of the brain (cortical hemiplegia).

Laryngoscopic formula.—Latent in the respiratory phase (since abduction is here preserved or even excessive), the malformation is apparent only in vocal effort, during which the cords are seen to be maintained obstinately in respiratory abduction (hysterical aphonia).

Functional consequences.—Total aphonia ; no respiratory trouble.

Unilateral form.—Same aspect in respiration as the bilateral form, phonatory compensation impossible, because of the extreme abduction of the affected cord, which the healthy cord cannot succeed in reaching.

CADAVERIC POSITION—Contrary to the preceding, this affects simul-

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taneously both functions, in consequence of the position of the cords, which, this time, are neither in the vocal nor respiratory position ; but in consequence of this intermediate situation the disorders are less complete and more easily compensated in the unilateral form.

Mechanism.—One only. Total paralysis of all the muscles of the larynx, that is to say, lesions destructive of the pneumo-gastric, or the recurrent in the region of their course, where these trunks contain all the motor nerves of the larynx (from the anastomosis of the spinal accessory to the terminal ramification of the recurrent).

Laryngoscopic formula.—Glottis fixed in both phases in an attitude of inertia, forming a narrow triangle, the posterior base of which does not exceed five millimetres, cords wavy and relaxed (want of tension), atrophied and shortened (lowering of the arytenoid), which is allowed by the posterior crico-arytenoid to project forwards.

Physiological consequences.—Respiratory affection moderate, aphonia complete in the bilateral form.

Unilateral form.—Compensation in both phases by the movements of the healthy cord. In respiration, a symmetrical glottis, half opened on the affected side, entirely on the healthy side. In phonation, compensatory excursion of the healthy side, which passes over the median line, and more or less exactly meets the immovable cord ; glottis closed, but oblique. Defective tension of the affected cord however persists, which nothing can compensate ; consequently there is dis-accord between the vibrations of the two cords (bi-tonal voice).

This classification has already met with two objections. It has been reproached with being only a physiological reverie, where observation counts for nothing, and again as containing nothing new, and being only a schematic translation of the nomenclature of clinicians. The second of these objections is, I believe, the very best answer which could be made to the first. So, starting from a totally different point of view, my argument has met with the results of the clinic, and perhaps this argument is less theoretical than one is pleased to pretend ; and in fact, the morbid forms to which reasoning has led me differ but little from those to which the examination of the patients has led clinicians. I find these forms, in part, in the divisions which Ruault, in the "Traité de Médecinee," has established on the data of laryngoscopic observation. I find them more clearly yet in the nomenclature of Gottstein, but nowhere so completely as in the division of the old clinicians into vocal, respiratory, and total paralysis. It is to this traditional classification that theory has led me, and the scheme which I have traced is only the rational interpretation of this primitive nomenclature ; but if my scheme resembles, in its conclusions the classical nomenclatures, it differs entirely from them by the means at which it is arrived, and it is for its principle that it deserves the originality which I contend for it. While the old classifications were based only on observation of the patient, or on the analysis of the muscular mechanics of the glottis, the method of classification which I propose starts from a different point of view. It is founded exclusively on the nervous physiology of the larynx, on the two methods of activity which I have formerly distinguished ("Archives de Physiologie," 1892)

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in the function of this organ, and on the independence of the centres, and of the nervous trunk which govern this double activity.

All my argument is contained in this notion of nervous physio-pathology, and the classification which I deduce from it is made by it and for it; it is this idea which I believe to be new, and which does not exist, so far as I know, in any of the older nomenclatures.

VACHER: Motor disorders of the glottis do not always have as a cause a material lesion of the nervous system, there is a whole series of troubles which are purely dynamic and which pathological anatomy is unable to explain, such as hysterical aphonia, chorea, etc.

CARTAZ: There is no difficulty in understanding the incompleteness of our documents upon the pathological anatomy of the laryngeal centres when we think of the special difficulties which such observations present. In most cases the alterations are not limited merely to the regions of these centres, but there are complex anatomical lesions, in which it is always very difficult to isolate the element which has determined the laryngeal trouble during life. The only observations truly demonstrative are those in which the laryngeal affections are observed more or less free from all foreign elements. The cases of Garel and Déjerine from this point of view have an exceptional value. As to the question of paralysis of the abductors, Raugé seems inclined to side himself with the advocates of contraction. There, however, exist incontestable cases where the nervous filaments of the abductors and the abductor muscles themselves have been found alone degenerated.

RAUGÉ: Cartaz is right in insisting upon the great rarity of observations relative to diverse lesions of the laryngeal centre. Almost all those formerly published are in some sense incomplete: some are *post mortem* observations without laryngoscopical examination, others are cases without autopsies. The only facts which can be used are those in which the examination of the patient has been rigorously practised during life, and followed by complete autopsy, including not only the brain but the whole nervous apparatus of the larynx. I am far from admitting in any exclusive fashion the doctrine of contraction. I believe that the glottic closure, which some wish to attribute constantly to the paralysis of dilators, whilst others see always the phenomenon of contraction, can be explained, according to the case, as one or other of these mechanisms, that is why I have cautiously kept in the preceding nomenclature the designation permanent adduction which does not prejudge the nature of the phenomenon.

HELME: What difference does Raugé make between permanent adduction and paralysis of the abductors?

RAUGÉ: The term paralysis of the abductors has the fault of affirming, in order to interpret the trouble observed, a physio-pathological mechanism of which nothing proves the exactitude. It is an unfortunate term, in all cases contestable; that of permanent adduction, which is only the definition of a laryngoscopic appearance, is applied, on the contrary, to all cases, whether of paralysis or contraction. One will never, therefore, risk being mistaken from the employment of this term in a case where the vocal cords are abnormally fixed in their phonatory position.

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As to determining whether this adduction is paralysis of the abductors or spasms of the antagonists, that is a question always delicate, but which may be generally resolved by an attentive laryngoscopical examination; the relaxation of the cord in the case of paralysis, its shortening produced by the falling forward of the arytenoid, its floating and excavated appearance, are sufficient to enable one to refer the clinical appearance to its true mechanism.

MOURE: We cannot at present be absolutely certain of the situation, or even of the existence of the laryngeal cortical centre. Though this nucleus is rendered very probable by physiological reasoning, it is necessary that it should be demonstrated in a peremptory fashion, by clinical observation and researches on the cadaver. There are, in the question of cerebral localisation, facts which have been definitely acquired, and others which still remain problematical. The question of the laryngeal centre is amongst this latter doubtful class, as Prof. Pitres has recently declared to me. As to the nature of the malformations produced by the lesions of this nucleus, we possess too few facts to establish them in any absolute fashion. Certain authors declare that they have seen, in such cases, the glottis in a cadaveric position; these are facts of observation which we must accept for the moment, and shall have to interpret later their apparent contradiction of physiological reasoning.

RAUGÉ: Lesions of the cortical centre can affect the larynx only in its vocal functions. They leave absolutely intact the movement of respiratory abduction, which depends upon the bulbar centre. It is, therefore, physiologically impossible that alterations limited to the cortex should be expressed by the cadaveric position, which answers to the complete suppression of all glottic activity.

FERRAS. *Laryngeal Hæmorrhage simulating Hæmoptysis.*

The author related a case of a girl, aged twenty, of robust constitution and full health, who very often submitted her larynx to violent and continued exercise in working in the garden, she having exchanged a town life for that of the country. Her health soon failed; she became pale, thin, amenorrhœic, sad, and sang less often. There was neither dysphonia nor aphonia. Coughing attacks occurred, and she spat blood —first a little, then a larger quantity, lasting all the morning, and amounting to about half a wineglassful. With absolute rest the hæmorrhage ceased. Being afraid of phthisis, she came next day to consult the author, who found no trace of epistaxis or of hæmorrhage from the throat or pharynx, or of disease in the lung, but in the larynx the mirror revealed the presence in the postero-superior portion of the inter-arytenoid space of two little veins anastomosing at obtuse angles. A part of the most prominent vein near the base of the right arytenoid presented a slight tear closed by an inter-venous clot. The laryngeal mucous membrane was injected generally a little less over the vocal cords. In no other part was there any trace of hæmorrhage. The author thinks the case interesting, having no knowledge of other cases where the seat of the hæmorrhage has been so clearly defined. Very often, as in this case, where amenorrhœa has been noticed, it is a woman who has been the

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subject of the observation, which is confirmed by the remarks of Beyer, Moure, Stepanow and Poyet. This case well shows the value of the laryngoscope in general medicine.

CARTAZ. *Laryngeal Affections in Syringomyelia.*

The author relates the results of laryngeal examination practised on seventeen patients in the clinics of Drs. Raymond, Déjérine, Duflocq and Marie. The frequency of bulbar manifestations in syringomyelia has been noted, and certain authors have described these manifestations as one form in part under the name of the bulbo-protuberantial form. Cartaz has studied only the sensory and motor disorders of the larynx and pharynx, leaving on one side the multiple affections of the trigeminal, the hypoglossal and the ocular nerves.

Schlesinger has published a note on twelve cases, and has shown that in a number of cases the disorders remained unperceived, and that they may be more frequent than is supposed. Of the seventeen cases examined there was a sensory or motor modification in nearly half; four times abolition of reflexes, seven times paræsthesia or anæsthesia, five times paralysis of one vocal cord; paralysis of the posterior crico-arytenoid in three cases, once with most distinct atrophy of the vocal cord, once of the paralysis of the recurrent. Sensory affections are more frequent than motor. They occur, however, independently of each other, corresponding generally to the side most affected, without, however, following any constant rule. In some cases anæsthesia of the palate is complete when the syringomyelic manifestations are rather unilateral. In the larynx the motor troubles are characterized by more or less complete paralyses (they have been found to be bilateral); but there have not been observed, as in tabes, spasmodic attacks leading to ictus or suffocation. The onset of these accidents is insidious, occurring generally when the disease is already accentuated, although in one of the cases cited by Cartaz it was evident from the origin of the disease. The course is progressive and fatal. These accidents are not always the appanage of syringo-melias of old date; you will find them sometimes in cases of patients quite recently affected, while others, helpless from the disease for long years, have no marked lesion of the superior respiratory passages.

CASTEX had examined the larynx of a patient affected by paralysis agitans. The voice was tremulous, though no trembling of the cords was seen with the laryngoscope; they were only soft and flaccid.

CARTAZ had also observed two cases of paralysis agitans with a tremulous voice, but had distinctly seen fibrilear movements of the cords in both cases.

WAGNIER. *A case of Tracheal Ozæna.*

A girl of sixteen years of age, in 1893, began to experience fœtidity of breath. She had true nasal ozœna, with crusts in the nose and naso-pharynx. Later on, after a cold, crusts were observed in the larynx, and the fœtidity of breath was no longer cured by nasal washes. Viscous masses were removed from the trachea, and the odour was overpowering, the nose being kept free by irrigations. Intra-tracheal injections of oily and aqueous solutions were only partially successful.

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Bacteriological examinations showed the presence in the crusts of two kinds of diplococci, one of which was stained by Gramm's method, liquefied gelatine, and produced fœtid cultures. The other diplococcus resembled Lœwenberg's microbe of ozœna.

MOLINIÉ had met with Lœwenberg's coccus in a case where there was no fœtidity, and doubted if his conclusions could be applied to all cases.

BEAUSOLEIL. *Secondary Hæmorrhage consecutive to Ablation of Adenoid Vegetations.*

These hæmorrhages occurring some days after operation are very rare according to published literature. The author reports the case of a girl of fifteen, in whom he used Gottstein's curette for the removal of adenoids, which were hard and voluminous, and traversed by numerous vessels on the surface, some of which appeared to be dilated. Eight days after the operation there was abundant hæmorrhage through the nostrils and mouth, persisting for eleven hours, and finally arrested by irrigation of perchloride of iron. This left the patient enfeebled, and the least movement threatened syncope. The bleeding recurred, though more slightly the two succeeding nights. The case resembles those reported by Segond and Lacoarret.

As to the cause of these secondary hæmorrhages, the author thinks that age plays the most important part, all these patients having gone beyond the most favourable age for operation, *i.e.*, five or six. With increased age there is fibrosis of the growths involving the blood vessels, and when the clot or scar closing their wounds falls, there is hæmorrhage. The author also insists upon the importance of a varicose condition of the naso-pharynx, sometimes found in the production of abundant hæmorrhage.

CASTEX thought that the danger of secondary hæmorrhage was lessened by using hot antiseptic irrigations, prolonged for several days before operation, removing any adenoiditis.

CARTAZ was surprised to hear of such methods before operation, for it is useless to operate if the liquid passes through the nose, and if it does not, then the naso-pharynx is not cleansed, moreover, there is danger to the Eustachian tubes. Besides adenitis and hæmophilia, dilated veinules in the naso-pharynx were a cause

WAGNIER: Hæmorrhages are due to the use of cutting instruments, and he preferred the hot or cold snare, and forceps that tear but do not cut. He is of opinion that the nose is irrigated too much, leading to hypertrophic rhinitis.

HELME had seen three cases of secondary hæmorrhage, and in all three cases a small triangular osseous crust had been removed with the curette. The anomaly may have been a vestige of a septum prolonged backwards, or an exaggerated pharyngeal tubercle.

BEAUSOLEIL did not believe that the cause of secondary hæmorrhages was to be found in cutting instruments, or due to the section of a portion of mucous membrane, but it was to be explained by the nature of the growth, and varicose dilatation of the vessels of the naso-pharynx. He had also observed the crusts referred to by Helme.

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CARTAZ. *Two cases of Lymphadenoma of the Tonsil.*

One occurred in a man, aged sixty, who presented pain on deglutition, and slight hoarseness, slight loss of flesh and strength, and enormous hypertrophy of both tonsils. The lingual tonsil was also enlarged, also the submaxillary glands. There was no enlargement of the spleen, but other glands were large and hard. A portion of the left tonsil removed with a snare, presented the microscopical appearance of lymphadenoma. The blood was markedly leucocytotic, and the patient had frequent insomnia and incessant agitation.

In consequence of old syphilis, specific treatment was given, but without effect. The patient was then put upon increasing doses of Fowler's liquid. The tonsils diminished a little, and deglutition was more easy. Four months after there was marked improvement, the tonsils being much less. The treatment was kept up for two years, when the patient died of cachexia, hypertrophy of the mesenteric glands having occurred, all the others, along with the tonsils, having remained stationary

The second case was that of a woman, aged sixty, who had pronounced enlargement of the left tonsil, painful deglutition, and dyspnœa. The right tonsil became affected. Scarifications and slight cauterisations of the tonsils performed at first left ulcers, which lasted for some months, but which were nearly cured by treatment with arseniate of soda. She got severe crises of spasmodic dyspnœa, and painful deglutition increased —the swallowing of a few drops of liquid threatening suffocation. She also had insomnia. Both tonsils were enormous, and of soft consistence, with indurated patches. There was enormous cervical and submaxillary adenopathy, especially of the left side. The spleen was hypertrophied. By reason of impending asphyxia, the tonsils had to be removed a few days later. Immediate relief followed to the respiration and swallowing, but the patient died of cachexia five weeks later, the cervical adenopathy having become enormous.

The author thinks that the early bilateral enlargement of the tonsils indicates lymphadenoma, and remarks upon the persistent insomnias of these patients. Arsenical treatment is the only one which has given satisfactory results in these cases, arresting the march of the disease. No surgical operation is justifiable, as it is only a local manifestation of a general disease. Partial ablation may be necessary for the relief of obstruction.

BEAUSOLEIL had presented to the Anatomical Society of Bordeaux a case of tonsillar lymphadenoma. After removal of a fragment of the tumour grave accidents followed by reason of the rapid growth of the tumour. The patient underwent more serious operation, and died shortly afterwards.

RAOULT. *Inflammations of the Lingual Tonsil of Dental and Buccal Origin.*

The author has been surprised at the frequency of these affections in patients with lingual adenitis; of 120 cases, he has noted dental and buccal lesions in 35. The removal of carious teeth, and rigorous care of the mouth, causes the pain on deglutition to cease. In 12 cases the

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author found that the buccal or dental cause was the only one; in 23 cases it was superadded to naso-pharyngeal trouble. The lesions of the lingual tonsil, redness and swelling, may persist long after the cause of infection has been removed. Antiseptic mouth washes, and applications of tincture of iodine to the gums are the measures indicated. The carious teeth are removed some days later, and the base of the tongue is swabbed with menthol in oil. Cauterisation of the lingual tonsil has been required in only 10 of the 35 cases. The author thinks it is necessary to examine the state of the mouth and teeth in all patients who complain of symptoms which point to a lesion of the fourth tonsil.

(To be continued.)

BERLIN LARYNGOLOGICAL SOCIETY.

April 20th, 1895.

KUTTNER showed a patient who had had a severe cold for ten to twelve days. For twenty-four hours she could swallow no solids, and fluids returned through the nose. Mucous membrane anæmic; the velum palati and the muscles of the posterior pharyngeal wall paretic; sensation intact; the left half of the larynx fixed; the left vocal process remains in the cadaveric position. For three days the patient could swallow nothing. On the fourth, fluids were taken; on the seventh a few solids, and on the sixteenth day from the beginning the swallowing was normal. Mobility returned slowly in the larynx. Firstly, short spasmodic movements of the cord to the midline, and back to the cadaveric position, showed themselves. This condition is still present. It may be a post-influenzal neurosis. Kuttner had seen three cases of recurrent paralysis recover. These showed first choræiform movements of the cords; then adduction and abduction from the cadaveric position to full function of the posticus.

ROSENBERG had seen two cases of recovery in recurrent paralysis.

P. HEYMANN showed (1) a specimen of a laryngo-carcinoma which had destroyed the inner half of the larynx, invading the pharynx by the ary-epiglottidean fold, and then destroying the base of the tongue and the cartilage. (2) A patient, seventy-one years old, with cervical lordosis. The spine of the third or fourth cervical vertebra was absent.

AHRONSON. *Foreign Bodies in the Upper Air-Passages.*

1. A patient, who some time previously had drawn a piece of bone into the air-passages, had a severe left-sided catarrh, with muco-purulent secretion; the discharge often offensive. He was sent to Ems, where, after lung gymnastics and inhalations, the bone was expectorated.

2. A patient, aged thirty-five, muco-purulent, and sometimes bloody expectoration, of three years' standing. The lungs were normal. Subsequently a piece of chalk was expectorated, which probably had lodged in the trachea beneath the glottis. The dyspnœa disappeared.

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3. Momentary inhalation of a pin.

4. Wounds of the oral surface of the epiglottis from swallowing fish-bones.

B. FRAENKEL thought that chalky concretions were not rare in the lungs.

LUBLINSKI.—*On Paralysis of the Upper Air-Passages from Infectious Diseases.*

The author had seen six cases of laryngeal paralysis after typhoid. Four cases occurred in men, and two in women, and the ages were between sixteen and thirty-nine years. The first symptom usually showed itself after defevescence, once first in the fourth week; once pleuro-pneumonia was the origin. Material lesions of the nerves are seldom observed in those of paralysis of the soft palate. Paralysis of the cubital nerve and paraplegia coexist, so one must assume that it is a peripheral neuritis or an anterior polio myelitis. In the slighter cases spontaneous recovery occurred; in some only improvement. Two cases were fatal—one subsequent to pleuro-pneumonia, the other from the severity of the typhoid. A bilateral paralysis of the posticus gave *quoad sanctionem* the worst prognosis.

Lublinski observed twice abductor paralysis in typhoid, thrice paralysis of one recurrent; once of both recurrents. The first cases required tracheotomy for relief. Differential diagnosis is to be made from peri-chondritis of the cricoid and anchylosis of the crico-arytenoid joint. After the antitoxin treatment of diphtheria, paralyses of the vocal cords, of accommodation, of the ocular muscles and of the lower extremities, appear fairly frequently and equally on both sides. It seems to Lublinski that the occurrence of paralysis is more frequent since antitoxin treatment than formerly. Also paralysis of the vocal cords is noticed after influenza. Lublinski observed one case of paralysis of the left posticus which recovered in the fourth week.

May 25th, 1895.

EDMUND MEYER showed a case of tuberculosis of the hard palate; tubercle bacilli had been demonstrated in the pus.

FLATAU showed a boy, aged three years, with adenoid vegetations and hypertrophied tonsils, who had at the extremity of a long, broad uvula a papilloma, which on microscopical examination showed typical adenoid tissue; aberrant tonsil.

(2) A seamstress, of twenty-three, who was seized with sudden and severe pain over the antrum. By operation, two separate collections of pus were found, one in the alveolus, and one sub-orbital, whilst the antrum was fairly free. Transillumination had given negative results in this case.

B. FRAENKEL exhibited (1) a man of fifty-eight, with a button-shaped swelling in the nasal vestibule, of rapid growth, which had bled spontaneously. When examined with a probe the tumour, inserted in the ala nasi, began to bleed. Microscopically were found connective tissue with

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an enormous number of dilated blood vessels; the tumour was covered with squamous epithelium. (2) A foreign body of several years duration, which was seen in the left lower meatus of the nose; it had the appearance of bone. It consisted of a hard layer, with a soft centre.

SCHOTZ asked if it was not connected with a tooth.

A. ROSENBERG showed a case previously reported by Schedwulst, diagnosed after a long time, as aortic aneurism; the signs of recurrent paralysis supervened.

ALEXANDER exhibited a case of bleeding nasal polypus.

KUTTNER reported a case of a septal polypus the size of a cherry stone, which had not bled, and which microscopically tallied with Fraenkel's case. He observed later three granulations of the tip of the nose, which also had never bled.

28th June, 1895.

KIRSTEIN described an *Electric Forehead Lamp for Rhinoscopy.*

BERLINER showed coloured *Models of Different Diseases of the Larynx.*

P. HEYMANN spoke on *the Fibres of the Vocal Cords.* These run parallel at the edge, reaching to and dividing at the anterior commissure. At the vocal processes they have a different arrangement.

BEUDA had by means of maceration in a five per cent. solution of acetic acid removed the epithelium of the vocal cords, and demonstrated in the specimens presented, that the fibres are seen, some parallel, some dividing, and in front and behind gradually blending in the strata. A stellate formation of fibres at the vocal process is probably to protect the epithelium against mechanical thickening. In apes there are no fibres; in dogs, slight indication; in the newborn, none.

GRABOWER hoped, from further investigation of the fibres, elucidation of the course of changes, especially in relation to carcinoma.

B. FRAENKEL claimed priority in this matter. Every part of the vocal cords is characterized in a measure by the arrangement of the fibres. In consequence of increased fibrous tissue and thickened epithelium, an instantaneous alteration to pachydermia results. The carcinoma buds are destructive to the fibres; they form atypical buds.

P. HEYMANN conceded full priority to Fraenkel.

BEUDA believed that the maceration method was not applicable to carcinoma and pachydermia.

B. FRAENKEL. *The Anatomical Nomenclature* in rhinology, laryngology, and otology. He proposed the acceptance of the nomenclature determined by the Anatomical Society.

FLATAU, HEYMANN, and THORNER agreed, and the proposal was adopted by the Society.

26th July, 1895.

STEINER exhibited a case of *Rhinoplasty for Lupus* treated by the method of James Israel. As the material from the forehead had been used up in a previous abortive attempt, Steiner took a six millimètre long

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bony flap from the tibia, which formed good union and gave a very good result.

DRUMMOND MEYER showed a preparation of *Empyema of the Ethmoid* dilated like a bony bladder.

B. HEYMANN demonstrated *Plaster of Paris Models of Nasal Preparations*, the work of Dr. Britz Heilbrann.

B. FRAENKEL had removed by operation a *Tumour, the size of a Hazel nut*, from the right vocal cord, which exhibited myxomatous characteristics microscopically. He showed both the tumour and microscopical preparation.

SIEGEL (Britz). *On Foot and Mouth Disease.* This is an ailment affecting the whole alimentary canal from the mouth to the anus, especially affecting the large intestine, the liver, and kidneys. One not infrequently finds a rash on the skin, which stands midway between measles and scarlet fever. As the affection of the mouth frequently stands prominently in the symptoms of the illness, it becomes of laryngological interest. In the mouth one sees redness and œdema. The parts chiefly affected are the uvula, pillars of the fauces, and gums, in which scorbutic-like changes occur. The tongue is acutely swollen to a thickness of two to three centimètres. Blebs, with subsequent ulceration, are to be found in the whole mouth, pharynx, and glottis. The gums are frequently retracted, and the mucous membrane desquamating. In most cases weakness and constipation are present as general symptoms. From clinical observation and numerous sections, Siegel thinks he has found a bacterium, which is found in the excrement, and especially in the internal organs of animals. At the conclusion of the paper he exhibited cases and specimens of pure cultures, with some from animals.

EDMUND MEYER described two cases of the same disease. The first occurred in a child, who came under treatment for a prolonged affection of the oral mucosa, with weakness and constipation. Under internal cleansings with chlorate of potash the mouth quickly healed, but the constitutional symptoms persisted for a long time. The second was in a girl of twenty-one years of age. Symptoms—severe pain, which rendered taking of nourishment impossible, excessive weakness, offensive diarrhœa, tongue thickly coated, on the edges of which were extensive ulcers, also on the lips and on the left posterior faucial pillars. The gums acutely swollen, ulcerated, and covered with very thin fibrinous membrane. In both cases Siegel obtained a bacterium from the evacuations.

ROSENTHAL showed a case of *Aneurism at the Root of the Arcus Palati pharyngeus* the size of a coffee bean; pressure on the carotid stopped its pulsation. He maintained this aneurism showed a practical consequence of tonsillotomy.

B. FRAENKEL had not rarely seen pulsating vessels the size of a crow quill on the posterior wall of the pharynx. In Rosenthal's case one had the aneurism as well as abnormal pulsation to deal with. These aneurisms do not enter into the question of tonsillotomy, but aneurisms occur exactly on the site of the tonsils. *Meyer* (*Trans.* R. LAKE.)

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Königlicher Verein der Aerzte in Budapest. Meeting, March 2, 1895.

Discussion on Serum Treatment.

HOGYES believes that the mortality of diphtheria is so variable that up to now statistics prove no influence of Heilserum. In the experiments upon animals the minimising effect is always applied; in men, the curative effect is specially urged.

WEISS recommends serum treatment.

TANGL: If the serum has any effect the subsequent paralyses and nephritis would not be exhibited.

PERTIK, also believes that statistics up to the present do not prove the efficacy of serum, but further experiments should be performed.

PURJESZ believes that favourable statistics are obtained from the circumstance that now all the milder forms of diphtheria also come into hospital for treatment. He has observed a case under the care of Prof. Widerhofer cured by serum. Three weeks later there was recurrence. Serum treatment was given on the first day of the disease but death followed. *Michael.*

Med. Gesellschaft in Leipzig. Meeting, February 12, 1895.

Experimental Contribution to Thyroid Gland Treatment.

FRIEDRICH: Report on some experiments made on dogs, with exact tables, but without any new results.

TILLMANNS has applied the thyroid gland treatment to a myxœdematous child, three years old, with the best results.

J. A. HOFMANN prefers the tabloids to the use of the simple gland.

TAUBE relates the case of a little cretin, with very large head, who every week had two thyroid glands. The first time he became somewhat better, but then died suddenly.

FREDHEIM treated a case of scleroderma. The patient had palpitations and tachycardia, and the treatment had to be interrupted.

HOFFMANN showed the curve of the weight of a lady with great obesity, who lost weight as soon as she took thyroid gland, but increased when the use of the medicament was stopped. *Michael.*

Aerztlicher Verein in Nürnberg. Meeting, February 21, 1895.

CNOPF reported eighteen cases of diphtheria treated with local applications and injections of Heilserum; two of the patients—11 per cent.—have died. *Michael.*

Aerztlicher Verein in Hamburg. Meeting, June 11, 1895.

THOST showed a soft rubber canula for the treatment of laryngeal stenosis in children. He also showed two patients wearing this canula. *Michael.*

Wiener Laryngologische Gesellschaft. Meeting, June 7, 1895.

PANZER showed an instrument for removal of the inferior nasal turbinated body.

ROTH had used a similar instrument.

CHIARI had used Panzer's instrument with the best result.

CHIARI showed a child upon whom he had performed trepanation of the frontal sinus, and had removed a necrotic piece of bone, which had produced profuse suppuration.

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WEIL showed a papilloma which he had removed from the septum.

ROTH reported a case of retro-nasal phlegmon, which ended in abscess of the pharyngeal tonsil. The symptoms were the same as in a pharyngeal phlegmon. Eight days after the commencement there was discharge of pus through the nose and mouth. The patient was much relieved, and was cured in short time. The patient had often had lacunar angina.

GROSSMANN remarked that pharyngeal phlegmon is in most cases a peritonsillar abscess.

HAJEK. On suppuration of the sphenoid sinus. In a patient, forty-five years old, who had a discharge of pus from the fissura olfactoria, the author found suppuration of the sphenoid sinus. He treated it by opening the sinus and enucleation. Suppuration in this region, if not caused by local process, is always produced by sphenoidal empyema. *Michael.*

Zweite Versammlung Süddeutscher Laryngologen in Heidelberg. Meeting, June 4, 1895.

SCHMIDT (Frankfurt-a-M.). *Introductory Remarks to the Discussion upon the Diseases of the Accessory Cavities of the Nose.*

The author reviewed the situation of the question, and recommended for most cases a mild treatment without great operations, which are not without great danger.

GRÜNWALD (Munich) showed specimens, which proved that the necrotic processes of the ethmoidal region really exist in spite of the contrary views of many authors. He also showed specimens which prove how much the entrance to the cavities is revealed by removal of the anterior part of the middle turbinated bone. He recommends extensive surgical operations for the treatment of suppuration of the accessory cavities, and believes that unfavourable results are obtained if the operation does not remove all diseased parts. In one case of abscess of the frontal lobe caused by empyema of the frontal sinus he obtained complete cure by trepanation. The treatment must consist in free opening of the cavities, especially of the frontal sinus. The cavity must be filled with iodoform gauze. Then granulations will be produced and fill out the cavity. By this method all cases can be cured.

KAHN (Würzburg) showed a specimen of necrosis of the frontal sinus, and microscopical specimens of pathologically degenerated mucous membrane of the frontal sinus.

VOHSEN (Frankfurt-a-M.) recommended illumination in examination of the accessory sinuses. He also recommended the free opening of the frontal sinus in cases of empyema. He does not believe that it is possible to cure the disease through the natural channels.

SCHECH (Munich) believes that sensibility on pressure of the lower internal orbital wall is a valuable symptom of latent empyema of the frontal cavity.

DREYFUS (Frankfurt-a-M.) believes that meningeal diseases caused by chronic suppurations of the nose and the accessory cavities are not rare. He found increased sensibility only in two cases.

BECK (Heidelberg) described Czerny's method for opening the frontal sinus.

HELLMANN reported a case of empyema of the ethmoidal and frontal sinuses treated by enucleation. The patient died forty-four days later from meningeal symptoms. The *post-mortem* examination showed no relation between the operation and death, which was caused by meningeal apoplexy.

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KAHSNITZ has cured his cases by introduction of a tube in the natural passages, and by irrigation.

KILLIAN (Freiburg-i-B.) believed that by the formation of an osseous bridge the malformation caused by the operation can be diminished.

JURASZ (Heidelberg) treats empyemata of the antrum of Highmore by Mikulicz's method, and recommends it.

GRÜNWALD (Munich): The probe only has a diagnostic value in cases of empyema of the frontal cavity. It is necessary to remove the mucous membrane and the anterior wall of the sinus. From the nature of the secretion often no certain diagnosis can be made.

PROBSTING (Wiesbaden) remarked that œdema fugax is not characteristic of empyemata of the antrum of Highmore.

WERNER (Heidelberg) has examined the secretion of the accessory cavities, and has found streptococci, staphylococci, and bacterium coli.

KLEMPERER (Strasburg) does not believe that the bacteriological examination gives any results of prognostic value in the case.

SIEBENMANN (Basle) believes that the nature of the pus sometimes can be used in forming a prognosis of the cases.

M. SCHMIDT made some concluding remarks.

SEIFFERT (Würzburg). *On Broncho-stenosis.*

See the report of the paper in the "Münchener Med. Woch."

SIEBENMANN (Basle) showed microscopic specimens of hyperkeratosis of the epithelium of the tonsil, and some instruments.

FISCHENICH (Wiesbaden). *Phlegmon of the Face, the Nose, and the Naso-Pharynx.*

The paper will be published later.

KILLIAN (Freiburg-i-B.). *Intubation Treatment in the Laryngeal and Tracheal Stenosis of Children.*

The author describes the method of intubation, not differing from the well-known descriptions of this method. Of nine cases eight have been cured, and one died from suffocation. The author recommends the method. *Michael.*

PREPARATIONS RECEIVED.

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