In general, the indications for the early treatment of malignant disease of the larynx are the prompt recognition of a malignant neoplasm of a given type impossible of treatment by other methods, situated favourably for radical extirpation in a suitable patient, and operated on by one absolutely qualified for the successful accomplishment of such work.

Mr. BUTLIN: The author makes two propositions:

1. Every malignant growth of the larynx of intrinsic origin, which can be dealt with, should be treated by a radical operation, in the absence of a decided indication to the contrary; and the operation should be performed with the least possible delay.

2. Every tumour of the larynx, suspected to be malignant, of intrinsic origin, of limited extent, and apparently within reach of free removal, justifies an exploratory thyrotomy in a suitable patient, in the absence of evidence of infiltration of the surrounding structures, and of affection of the lymphatic glands.

The author endeavours to prove the justice of these propositions by showing that radical operations have been sufficiently successful, and that exploratory thyrotomy is not attended with excessive dangers.

The best cases for operation.

The after-treatment of operation cases.

By the courtesy of the editor of "The British Medical Journal," the papers presented in this Section, and in that of Otology, will subsequently be published in this Journal. The above is merely a *résumé* of the papers presented for the opening of the discussions.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Seventeenth Annual Congress, held at Rochester, N. Y., June 17th, 18th, and 19th, 1895.

President—Dr. JOHN O. ROE, Rochester.
Secretary—Dr. CHARLES H. KNIGHT, New York.

[*Scientific Proceedings reported for the* JOURNAL OF LARYNGOLOGY, *by* Dr. JAMES E. NEWCOMB, *New York, Fellow of the Association.*]

First Day—Monday, June 17th.

THE PRESIDENTIAL ADDRESS.

THE President welcomed the members of the Association to the seventeenth annual congress of the society, and also extended to them the hospitality of the city of Rochester, it being the first time the Association had met in that city.

He briefly reviewed the good work done by its members during the past year, and called attention to the able and comprehensive retrospect of the achievements of the society since its organization which was given

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by the President last year. He also spoke of the great advantage derived by the members from association in organized and specialized medical bodies as illustrated by the achievements of the society, and of the importance of a permanent enthusiasm and punctual attendance of each and every member.

He then took for his subject, *The Relation of Damp Air to Diseases of the Air Passages, and the Relative Prevalence of these Diseases in the Region of the Great Lakes.* In discussing this subject he first called attention to the importance of distinguishing between humidity and dampness, and to the relation between the amount of moisture that the air will sustain and the temperature of the air, and that air becomes damp only as it approaches the dew point. An atmosphere may be very humid, and contain a large amount of moisture, and still be far from being damp if the temperature is uniformly warm ; whereas in a lower temperature the air may contain a very much less amount of moisture and at the same time be very damp. This is because the air approaches or reaches the degree of saturation.

He pointed out the relation of damp air to diseases of the air passages, and showed that exposure to a damp atmosphere is one of the most potent causes of catarrhal affections of the nose, throat and lungs. A warm humid atmosphere may in some cases be decidedly beneficial in these affections, while a damp atmosphere is very detrimental. A cold atmosphere must necessarily be a very dry one in order to be salutary to diseases of the respiratory organs.

He also noted the relation of damp air to phthisis, as first pointed out by Prof. Bowditch, and the catarrhal conditions of the air passages caused thereby which renders them an excellent feeding-ground for the bacillus, and the person proportionately susceptible to tuberculous infection. He spoke of the pernicious habit indulged in by many people of sleeping with their windows so widely open as to allow the cold, damp air to enter directly into their sleeping apartments without having been first rendered warm and thereby fit for respiration, and showed that the damp night air becomes specially detrimental when the temperature is below 65° Fahrenheit.

He then called attention to the excessive humidity and dampness of the region of the Great Lakes, due to the chilling of the atmosphere by the cold waters of these lakes, which are largely derived from the regions of the north. As this cool water passes down through the lakes it cools the surrounding atmosphere, condenses its moisture, thereby increasing the cloudiness of this region and the dampness of the atmosphere, by lowering the mean temperature, especially during the spring months. And it is on account of these influences that diseases of the nose, throat and lungs are more prevalent in this region than they are in regions removed from such influences.

Desiccated Thyroids in Goitre. Paper by Dr. E. FLETCHER INGALS (Chicago.)

During fifteen years, the writer has seen 81 cases of bronchocele and exophthalmic goitre. He has been accustomed to treat them with

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the iodide, tincture of iodine, and injections of carbolic acid, in glycerine. For the past three or four years he has used the thyroid products, and in his last 6 cases the desiccated thyroids prepared by Armour & Co., of Chicago. Of this preparation, 6 grains represent one entire gland. Abstracts of the clinical histories of these 6 cases were then given. He has collated the results of 44 other cases in the practice of other physicians. In one series of 25, all but 7 were improved by the desiccated gland, though headache was noted in 30 per cent.; dizziness in 37 per cent., and increased rapidity of the heart in 25 per cent. Out of the whole 50, the size of the neck was reduced in 38. Out of 7 cases of myxœdema, 5 were benefited, though the change in bodily weight was practically nothing, some gaining and others losing.

Of disagreeable symptoms, headache was noted in 18 per cent.; dizziness in 20 per cent.; trembling in 14 per cent.; increase of pulse rate in 11 per cent.; weakness, 17 per cent.; nausea, 7 per cent.; loss of weight in 25 per cent., and in one case, strong uterine contractions. He would conclude as follows :—

1. Thyroid products exert a strong physiological action upon the nervous and circulatory systems.

2. These systems result from a daily equivalent of from 1½ to 2 glands.

3. Internal administration does as well as the hypodermatic method.

4. The daily dosage of the desiccated product should begin with gr. ij., t. i. d., and gradually be increased up to gr. vij., t. i. d.

5. The effect on bodily weight is uncertain, varying in the same individual from time to time.

6. Some of the disagreeable effects noticed may be due to incidental gastric disturbance.

7. The products are serviceable in myxœdema.

8. The size of the enlarged gland is reduced, except the cystic forms of enlargement, which do not seem affected.

9. Outside of the above-named conditions there is no evidence that the thyroid therapy has any place in medicine.

The discussion was opened by Dr. E. L. SHURLY (Detroit). He had used the remedy in some 15 or 20 cases, but with disappointing results. He narrated the case of a boy fifteen years old, from whom the thyroid was extirpated. After the operation he developed somewhat, but did not seem to grow. Three or four years later, he was apathetic, and had a thin piping voice. Examination showed a normal movement of the arytenoid and the cords, but the latter were deficient in tension. Feeding for two years on thyroid extract improved the laryngeal and mental conditions. In view of the disastrous results which follow the entire extirpation, he thought that laryngologists should protest against entire removal by the surgeon. If only a small portion of the gland was left, these untoward results did not follow.

Dr. W. E. CASSELBERRY (Chicago) had used thyroid extract in one case of exophthalmic goitre with improvement, but not cure. He narrated the experience of Paul Bruns, of Tubingen, who had found that good results depended very largely on the age of the patient. In the cases

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under ten years, all were cured; in those from ten to twenty, three-quarters were cured, while in those from forty to sixty, very few were cured. Béchere had shown that it was possible to produce a fatal result in monkeys in ten days, by feeding them with the extract. Sudden death had resulted from heart failure.

The Influence of Chronic Affections of the Throat upon certain Defects of Speech. By Dr. BRYSON DELAVAN (New York). Read by title.

The influence of adenoid and tonsillar obstruction upon the pronunciation of certain consonant sounds is well known, as is the effect upon pronunciation of the relaxation of the soft palate, due to the above causes and to catarrhal conditions of the throat in general. The number of consonants thereby mispronounced is greater than is supposed, and several such mispronunciations which may persist through life apparently owe their origin to this cause.

Particular attention, however, is called to the effect of the above throat conditions upon *stammering*. While stammering may be due to other than peripheral causes, and while many thus affected have perfectly normal throats, it is a well-known fact that speech is more difficult with them when from hunger, fatigue or illness the pharynx and soft palate are relaxed. Where relaxation is habitual, the vocal defect is likely to be exaggerated in consequence. Not only is this statement true by analogy, but practical experience also proves it. Stammerers suffering from irritation and relaxation of the throat have been greatly benefited by the cure of their throat affections, as the writer has had occasion to observe in many instances, and while the vocal defect may not always have been eradicated, the improvement has been marked.

In view of this, it is urged that chronic affections of the throat in stammerers be relieved if possible before the patient is placed in the hands of the vocal instructor. The work of the latter will be greatly facilitated, and the results much improved if the above suggestion be carried out.

Electrolysis by a Current Controller for the Reduction of Spurs of the Nasal Septum. Dr. W. E. CASSELBERRY read a paper with this title.

The author disclaims any idea of indorsing electrolysis as a universal substitute for the surgical method, but has sought to determine the scope, or better stated, the exact limitations of the process by electrolysis. A *résumé* of the previous literature is given, and then follows a description of the McIntosh current-controller which in connection with the Edison electric light circuit he has adapted to this use, as a substitute for the primary galvanic battery heretofore employed. The controller together with a milliampère metre, cords and needles, is contained in a small drawer within easy reach as the operator sits in position for the treatment of patients, and is always ready for immediate use without waste or corrosion. By means of it, electrolysis is as easily and readily applied as the galvano-cautery, except for the few minutes additional time that its energy needs to accomplish the work.

The current strength necessary for electrolysis of nasal spurs is from

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15 to 40 milliampères measured with the resistance of the spur in the circuit, and to supply this current from 15 to 30 cells of a galvanic battery would ordinarily be used with a corresponding electro-motor force of from 12 to 20 volts or more. The Chicago Edison current has an electro-motor force of 110 volts, which must be reduced by the current-controller, aided by one 16-candle power lamp ("in series") in the circuit. The ampèrage can be correspondingly reduced so that with the spur in the circuit it measures the requisite number of milliampères.

The controller is composed of a number of resistance coils of varying size, with sliding contacts arranged in two rows; the decimal slide, by means of which the electro-motor force can be divided into tenths, and the centesimal slide which divides the electro-motor force into hundredths, so arranged that the patient may be placed in a "shunt" to one or more coils of either grade.

Thus, for instance, in treating Case I., with one lamp in the circuit, which in itself affords sufficient resistance to reduce the original 110 volts to 55 volts, as an initial current with which the controller has to start, the needles were first inserted into the cartilaginous spur. Then the decimal slide was pushed to | which represents the removal of sufficient coil resistance to give 1 of 55 volts, then to 2 which gave $\frac{2}{10}$ of 55 volts, or 11 volts, at which time the metre registered 40 milliampères, which was adequate, maintained for eight minutes, to accomplish the purpose. In this case the sitting was repeated once to reduce another section of the spur. In other cases, having secured a current of 11 volts in this manner it was gradually increased to 13 or 14 volts, by the use of the centesimal slide, each joint of which would add $\frac{1}{100}$ of 55 volts or about $\frac{1}{2}$ volt. The metre in different cases, with 11 to 14 volts, would register from 15 to 50 milliampères, according to the amount of resistance of the spur.

The controller is constructed and tested with a view to safety. The bipolar method was used exclusively and needles of irido-platinum preferred. A very sharp point can be given this substance and its penetrating power is almost equal to steel. Not being oxidizable, irido-platinum needles can be used repeatedly, and, hence, can be permanently soldered to metallic conductors, running through a light handle which constitutes the needle-holder.

The author has devised such an instrument which meets all requirements. Steel being oxidizable requires changing of needles for every treatment, with annoyance incidental to adjustment in the holder. Even steel will not penetrate bone and irido-platinum will easily penetrate cartilage.

Ten cases are reported which for the sake of brevity and to enable one to draw definite conclusions therefrom are classed in three types, according to the composition and location of the spur.

Type I., *Strictly Cartilaginous Spurs*, includes five cases successfully treated. Much care is necessary not to produce a perforation. One to three sittings are required. The pain is but slight, but an occasional disposition to faint is observed. A duration of six to eight minutes is sufficient.

Type II., *Mixed Cartilaginous and Bony Spurs*, includes three cases

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in which the spur was reduced in size only, the amount of reduction being commensurate with the proportion of cartilage contained in the spur. The bony parts cannot be penetrated by the needles, and are but little affected by the electrolytic process.

Type III., *Bony Spurs*, includes two unsuccessful cases.

Conclusions.—As demonstrated by the cases reported under Type I., strictly cartilaginous spurs can be thoroughly removed by electrolysis, one, two, or at most three operative sittings being required. It is more tedious and less brilliant than the surgical method, but is not accompanied by any liability to immediate hæmorrhage, and by only a remote possibility of secondary hæmorrhage.

It is not to be endorsed as a universal substitute for the surgical method in even this limited class; but the number of individual cases both in this type and in Type II. for which it is applicable is many, and with the efficiency, convenience and compactness of the McIntosh current controller, which adapts the Edison electric light circuit to its use, together with properly constructed irido-platinum needles, it is considered a valuable addition to our resources.

As demonstrated by the cases reported under Type II., it will not thoroughly remove spurs which belong to that large class of mixed cartilaginous and bony substance; but it will reduce them in size, the amount of reduction being commensurate with the proportion of cartilage of which they are composed. The majority of such cases would therefore be better treated surgically, as being the more thorough method; but instances will arise in which the surgical method being declined, or being for some reason inexpedient, benefit may accrue from the use of electrolysis.

As demonstrated by the cases reported under Type III., spurs composed wholly or largely of hard bone cannot be successfully treated by electrolysis for the reason that needles cannot be caused to penetrate properly, and, further, it is doubtful if the process be adequate, even if the needles should penetrate, to the resolution of hard and dense bone.

Spurs or excrescences and not deviation of the septum is the subject of this paper. Electrolysis is powerless to correct deviated septa of any form.

In discussing this paper, Dr. J. E. NEWCOMB (New York) related his personal experience in two cases. He was not able to accept the statements of those Continental observers who claimed that electrolysis would destroy bony growths.

Dr. W. H. DALY (Pittsburg) had used electrolysis, but discarded it in favour of the surgical method. Electrolysis is a waste of time, as it is more of a theory than a fact, for what we really accomplish is the result of a cauterizing process. He prefers the trephine driven by the De Vilbiss motor. The current controller devised by the reader of the paper could not be used with the alternating current, which is the one most generally employed for commercial purposes.

Dr. SHURLY thought electrolysis in nasal spurs analogous to trying to amputate a thigh by lunar caustic.

Dr. JONATHAN WRIGHT (Brooklyn) thought that the method was an

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admirable one in cases of phthisis and other conditions of debility where one wished to avoid shock and loss of blood. Such patients are in a delicate condition, and it is easy to start them downhill.

Dr. INGALS thought it possible to remove soft spurs with the galvano-cautery, especially if we used a fine point heated to whiteness.

Dr. J. H. LOWMAN (Cleveland) had heard the discussion on this topic at the last international medical congress, and had inferred that the weight of opinion among conservative rhinologists was against the method.

Dr. S. HARTWELL CHAPMAN (New Haven) thought Dr. Casselberry's apparatus defective in that it did not subdivide the current sufficiently to prevent shocks and faintness.

Dr. J. W. FARLOW (Boston) thought the avoidance of hæmorrhage a great point in favour of electrolysis. He has seen severe hæmorrhage follow the use of the saw even in non-bleeders.

Dr. DALY preferred to check nasal bleeding in these and similar conditions by means of padded intra-nasal splints made of aluminium.

Dr. CASSELBERRY said, in closing the discussion, that severe inflammatory reaction was apt to follow the use of the cautery on the septum. Dr. Chapman's objection was a valid one, and he hoped to be able to remedy this defect in the current controller.

After the reading of papers at the opening session, presentation of instruments was in order. Dr. J. W. GLEITSMANN (New York) exhibited a *Conchotome* devised by him for removal of portions of the middle turbinate. Dr. J. W. FARLOW (Boston) exhibited a *Portrait of Ferdinand I. of Germany*, who is supposed to have had adenoids. Dr. M. J. ASCH (New York) showed a *Modification of Gradle's Post-Nasal Forceps*, also a *Dilating Intubation Apparatus* and a *Mouth-Gag*. Dr. A. COOLIDGE, junior (Boston), showed a *Dilator* for use in syphilitic adhesions of the soft palate to the posterior pharyngeal wall. Dr. J. C. MULHALL (St. Louis) presented a *Current Controller* for use with the alternating current.

Is Acute Tonsillitis in any way dependent on the Rheumatic Diathesis? Paper by Dr. GEORGE B. HOPE (New York). Read by title.

The paper takes the ground that the theory of acute tonsillitis, very generally attributed to an underlying rheumatic or gouty diathesis is, in the writer's experience, not substantiated by clinical observation, and believes that the accepted version is largely due to the natural disposition to fall into line with time-honoured views and unconsidered general statements.

The issue is made that patients subject to attacks of tonsillitis do not commonly afford a history of rheumatism proximate or remote, while, on the other hand, the rheumatic individual rarely suffers from inflammation of the tonsil; that it is noteworthy that the tonsil in later life becomes less and less disposed to acute attacks, while the rheumatic age is more confirmed. Furthermore, as a local acute manifestation, rheumatism should select a sero-fibrous rather than a muco-fibrous or lymphatic structure as the tonsil. Carrying the argument further, it is claimed that

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suppurative peritonsillitis is clearly of an infectious nature, and is frequently a sequela of intra-nasal operations quite independent of climatic or constitutional conditions.

The conclusion reached from the above is that the favourite anti-rheumatic remedies, as guaiac or the salicylates, as addressed to the causation are either erroneous in practice or act independently, and by methods not clearly stated; such remedies should not be considered specifics, but should be adjusted to the varying conditions of the subject. Moreover, it is not proven that the treatment does abort or mitigate the course of the disease.

Second Day, Tuesday, June 18th.

Cases of Lipoma. By Dr. FARLOW.

Case I.: *Lipoma of the inside of the Cheek.* Patient, a boy aged two, previously well; mother noted blood in his mouth, and the next day consulted Dr. Farlow. On the inner side of the cheek was a reddish, lobulated, pediculated mass, soft and freely movable; not ulcerated. Removed without bleeding by cold snare.

Case II.: *Lipoma of the Larynx.* Patient, male, aged sixty-six, in good health. Seven years before a tumour was felt projecting from the throat up into the mouth, and a piece two inches long was removed by scissors. Case first seen by Dr. Farlow in March, 1893. The mass had again grown, and the patient was obliged to wrap a piece of cloth about it and hold it to one side, so as to prevent injury by the teeth, as it was apt to project beyond the lips. He experienced suffocative attacks from the falling backward of the mass down between the cords into the trachea. A portion was removed with curved scissors and the cold wire snare, but patient did not return for completion of the operation. Later, came back with recurrence of the growth and return of old symptoms. In December, 1894, three pieces were removed with the hot snare, and the throat completely cleared. Attachment was seen to have been just in front of arytenoid cartilage. Microscopical diagnosis of both cases: "submucous polypoid lipoma."

Some Remarks on Removal of the Tonsils. Paper by Dr. FARLOW.

The writer confined his remarks entirely to the choice of operative methods. We must first break up all adhesions to the faucial pillars. In cases of large projecting tonsils with associated adenoids, he gives an anæsthetic, first removes the tonsils, and then the adenoids. His favourite instrument for the former is a specially devised écraseur, with the usual No. 5 steel wire. The instrument is based on the model of Hooper's snare, but the canula is straightened, and weak points reinforced. Operation would be easy if large tonsils were always found in large mouths, but, unfortunately, they frequently exist in children with small mouths and narrow jaws. The tonsil must be thrown out of its bed by external pressure, and then encircled by the wire, which can be tightened as slowly or as rapidly as desired. After operation, ice is freely used. Cocaine may be employed where the tonsils alone (no adenoids) are to

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be removed. Sections of extirpated organs have shown that the écraseur cleans out all the tonsillar tissue down to and even including the sheath. Dr. Farlow has also used the Ruault tonsil-punch, and Hartmann's conchotome, for the deeper masses high up between the faucial pillars. He employs small curved knives to break up the surface of the organs, so as to afford a hold for the punch forceps. The galvano-cautery he regards as too tedious.

Dr. F. H. BOSWORTH (New York) regarded the tonsil as merely diseased tissue, and whenever he cut into lymphoid tissue he expected more or less bleeding. Severe hæmorrhage was rare in children. The large rounded masses could be easily sliced off with the guillotine. In the diffuse cases, with adhesions to the faucial pillars, we must dig the tissue out. No one instrument would answer for every case.

Dr. INGALS thought that bleeding often resulted from small tonsils, whose removal is indicated, though they may not be large at the time of operation. Cocaine has very little effect on the tonsils, and bleeding is more liable to occur after its use.

Dr. CARL SEILER (Philadelphia) thought that the longer diameter of the tonsils was horizontal rather than vertical, and that most of the instrument makers overlooked this fact.

Dr. DALY thought that more bad surgery had been done on the tonsils than on any other part of the body. Mackenzie's tonsillotome only half completes the operation, and its use must be followed by that of the knife and forceps, in order to do the necessary trimming. He had had four or five cases of alarming hæmorrhage.

Dr. CASSELBERRY thought that children sometimes bled, and he never operated without having at hand a reliable galvano-cautery to serve as a hæmostatic in case of need. In regard to separation of adhesions, he was careful to isolate the muscular structure of the pillars, and if he could do this, he did not mind sacrificing a little mucuous membrane.

Dr. SHURLY thought that in every instance we should be careful to estimate the nature of the tonsil we had to deal with, and the amount of tissue which ought to be removed. Bleeding may come from an abnormal distribution of arterial twigs. In ignipuncture he did not follow the crypts, but burned diagonally across them, making two or three punctures at each sitting, and endeavouring to set up an acute inflammation in place of an old proliferating one. He would differ from Dr. Seiler as to the direction of the long diameter of the tonsil.

Melancholia cured by Intra-Nasal Operation. Paper by Dr. BOSWORTH.

His patient, a business man, aged forty-two, was seen in April, 1891. In 1876 he had suffered from influenza, and afterwards from hay fever, which came on in August of each year. In 1881 he began to suffer from depression, insomnia and melancholia—at first periodically, but later constantly, gradually becoming unfitted for business. His eye-balls felt too large for their sockets, and he complained of a twisting feeling between the eyes at the root of the nose. He fell into the hands of various physicians, who at different times operated for varicocele, stricture and hæmorrhoids, castrated him, prescribed glasses, cut the

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tendons of the eye muscles, enucleated one eye, ligated the internal pudic artery, cauterized his spine, put a seton in his neck, and circumcised him. He did not improve, and became so despondent as to contemplate suicide. Examination of the nose revealed a complete occlusion of the right side by a bulging of the cartilaginous septum and a myxomatous degeneration of the left middle turbinate, with evidences of ethmoid disease. The nostrils were freed by saw and snare with great and immediate relief to the aprosexia and gradual improvement of the psychical symptoms and hay fever. He finally became fully restored to health, and was now attending to business.

Ethmoid and Sphenoid Disease; Brain Abscess and Death.

Dr. BOSWORTH also reported the case of a dentist, aged thirty-three, who had complained for some time of an offensive purulent discharge from the left nostril, and later from the right. When first seen he had had for four days headache, neuralgia of the left side of the face and head, but no fever, and he was in good general condition. Pus was seen running down between the left turbinate and the septum. Penetration with a sharp gouge into the ethmoid region gave notable relief for about a week, but he again became worse. With a three-sixteenths of an inch burr an effort was made to enter the sphenoidal sinus, but it was not possible to determine whether the chamber was actually penetrated or not. The next day there was a chill temperature of 106°, semi-coma, paralysis of the left arm and face, a second rigor, and death in twenty-four hours after the initial chill. No autopsy was held. The old symptoms were thought to be due to the ethmoid disease; the headache, etc., to involvement of the sphenoid, and the final symptoms to brain abscess lasting about twenty-four hours. The case suggested to the writer—first, that ethmoid disease, while not primarily dangerous, might secondarily become so by leading to involvement of the sphenoid, and, secondly, that true primary disease of the latter cavity is very rare. He had only seen two undoubted cases of the latter, but one hundred and fifty of ethmoid trouble.

Further Contribution to the Study of Suppurative Disease of the Accessory Sinuses, with the Report of Cases. Paper by Dr. J. H. BRYAN, Washington, D.C.

Case I. *Abscess of the Right Maxillary Sinus resulting from Dental Caries.* Male, aged thirty-nine. Nasal discharge for several years, with neuralgia and some loss of general health. Examination showed tenderness on pressure over the right canine fossa, and slight hypertrophy of the inferior turbinates. No discharge noticed *in situ*, but on blowing the nose there was a slight escape of foul-smelling pus from the right nostril. The upper first and second (right) molar teeth were carious. These were removed by a dentist, who found projecting from the root of the first molar a piece of a needle, one-eighth of an inch long, which had penetrated the floor of the antrum. Patient remembered that, eight years before, he had picked his tooth with a needle, which had broken off, but, as he had no subsequent pain, he had forgotten all about it.

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Treatment: Irrigation by hydrogen dioxide and salinated solution of boric acid. Cure in three weeks. Relief to all general constitutional symptoms.

Case II. *Suppurative Ethmoiditis terminating in Caries of the Anterior Ethmoidal Cells.* Male, aged sixty-eight. For past ten years has had neuralgia at the inner angle of the left orbit, radiating over the same side of the face and head; was always increased by an acute head cold; discharge from the left nostril for some years of yellowish pus; no orbital swelling or visual disturbance. The left middle turbinate was slightly enlarged, and pus escaped from beneath it. Probe detected anterior ethmoidal caries. Treatment: Ethmoidal cells opened by sharp curette. Relief to all neuralgic and orbital symptoms, and cessation of discharge.

Case III. *Abscess of the Left Frontal Sinus, resulting from Nasal Polypi and Hypertrophic Rhinitis.*—Male, aged fifty; left nasal discharge for some years. Intense pain in left forehead, left nasal obstruction, and general impairment of health. A severe attack of influenza greatly increased his painful symptoms. Marked mental depression; secretion profuse and muco-purulent in character. Supra-orbital ridges were very prominent, and skin over left sinus was red and swollen, the blush running down on the eyelid. Left nostril blocked by polypus springing from middle turbinate, with marked hypertrophy of inferior turbinate, which was adherent to a long spine extending out from the nasal septum. Treatment: Removal of polypi and bony spine, with reduction of middle turbinate. Free drainage was thus established. The fronto-nasal duct was unusually large. Rapid relief of all symptoms. There is still (ten weeks) a slight mucous secretion from the sinus, which is decreasing. Case is still under observation.

Case IV. *Abscess of the Frontal, Ethmoidal and Maxillary Sinuses, with Caries of the Fronto-Ethmoidal Cells.* Female, aged forty-eight; frequent catarrhs of the upper respiratory tract for the past twenty years, with thick yellowish discharge from the left nostril for the past seven months. No pain in teeth, which were absolutely sound; occasional headache, giving way to painful sensations over whole left face; teeth of that side seemed to project further than those of the opposite side. Pain was especially severe over the supra-orbital ridge, with slight swelling of this, and the infra-orbital region; with tenderness in the former situation and over the canine fossa. There was slight turgescence of the right inferior turbinated, and deep swelling of the inferior and middle left turbinates. The nose was full of pus, which discharged freely anteriorly, and, in the reclining posture, posteriorly. Transillumination showed opacities of left frontal and maxillary sinuses, and the usual field for red and green was somewhat narrowed. Treatment: Extraction of the first molar tooth, trephining through the alveolar process, and the escape of pus. Irrigation as in previous cases. In two weeks pus ceased to form in this cavity, but it was still seen in the middle meatus, and the severe headaches continued.

After awhile the frontal sinus was opened under ether, and thoroughly explored with a probe; but no dead bone was found. The sinus was

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irrigated, and a drainage tube inserted. In the course of a month, the pus flow had nearly ceased, and the patient was about to be discharged, when pus again appeared in the nose and through the fistulous opening in the forehead, with a return of all the painful symptoms. The sinus was reopened, granulations scraped away, and the opening enlarged. After irrigation with a 1-6000 bichloride solution, the cavity was packed with iodoform gauze. All measures seemed inefficient to check pus formation, and during one irrigation it was discovered that fluid injected into the antrum (where pus had reappeared) came out through the frontal opening, showing that there was a direct connection between the two cavities. Later, diseased bone was detected about the anterior ethmoid cells, and with the electric burr free drainage was established. Patient gradually recovered, having been under treatment for ten months.

Dr. BRYAN then discussed the general symptomatology of this class of cases, and laid down the general surgical rules which should govern their treatment.

Dr. WRIGHT related the history of a case of obstinate antrum disease, in which several operations had been performed, and in which it was extremely difficult to determine the exact source of the pus as the antral mucosa had seemed healthy. He would advise against early operation, as the cases sometimes subsided spontaneously.

Dr. INGALS had seen three cases of sphenoidal disease. He thought the best method to attack the sinus was from below rather than anteriorly. This he did by means of an instrument used by the dentists, in which the drill revolves at right angles to the axis of the shafting.

Dr. GLEITSMANN preferred to open from the front, using the Schaffer probe, passed in the classical direction. He had seen in one case profuse secondary hæmorrhage, requiring anterior and posterior plugging.

Dr. SHURLY had seen many cases of nasal discharge, which he referred to as neuritis due to organic disease of the olfactory bulbs. He had not regarded them as of ethmoidal origin.

Dr. DALY advocated severing the attachments of the nose on one side, and laying it over on the cheek, as being the safest and easiest way to reach the sphenoidal cells.

Dr. MULHALL thought the cranial cavity with its brain contents much better protected, naturally, in the sphenoidal than in the ethmoid region. He would again call attention to the valuable teachings of Grünwald's monograph on this topic. Sphenoid disease, apart from ethmoid, he believed to be very rare.

A Consideration of some of the more important Principles of Intra-Nasal Surgery. Paper by Dr. W. K. SIMPSON (New York).

The more we can apply surgical principles to the treatment of morbid nasal conditions the greater will be our success. Conservative surgery may be defined as the art of knowing when not to interfere. Intra-nasal surgery has been carried too far, and the pendulum is now on the return swing. It was inevitable but that we should make some mistakes, but these ought to serve as landmarks to guide us against further errors.

Dr. Simpson desired to dwell especially upon the treatment of ob-

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structive and hypertrophic rhinitis. In all these conditions there was a pre-surgical or pre-operative period, during which we should do as much as possible by regulation of clothing, diet, and general environment. In mixed conditions, with a tendency to atrophy, we should be careful not to do too much, else we may inaugurate a worse state of affairs than the one we wish to relieve. Moreover, we must remember that in nasal architecture we rarely encounter perfect symmetry with a smooth nasal interior. In deciding to operate we should choose that method with the least shock and hæmorrhage, leaving a smooth, hard surface, with the least possible destruction of the mucosa, leaving the greatest amount of normal secreting surface, and attended with the least possible danger of infection.

In the case of the operation wound rigid antisepsis should be aimed at. Nasal surgeons are apt to get careless in their minor work. The thumb and forefinger, with which cotton is wound on applicators, should be kept scrupulously clean. The nose is not a closed cavity, and hence perfect asepsis is impossible, but we should approximate thereto. Much of the "grippe," "heavy cold," etc., after operative work is in reality a mild sepsis.

Dr. Mulhall believed that sepsis would never follow galvano-cautery if the tip was heated white and not allowed to cool *in sitû*. The slight hyperæmia of the mucosa caused by the radiant heat was quickly dissipated by the use of a salinated solution of sodium bicarbonate.

Ludwig's Angina. Paper by Dr. J. E. NEWCOMB (New York).

The author traced the history of the affection from its first appearance in medical literature. The name itself is objectionable on the general principle of nomenclature in disease, and, moreover, it is probable that the malady was noted by Heim some thirteen years before Ludwig. Modern writers define it as a diffuse phlegmonous inflammation of the floor of the mouth, and of the inter-muscular and subcutaneous cellular tissue of the sub-maxillary region, which may resolve or end in abscess or gangrene. Many writers confine the site of its occurrence to the submaxillary region, but this is not in accord with the earlier view. Moreover, it is evident that different men have had different things in mind when writing under the same title.

It has always been a moot question whether the morbid process is or is not deserving of a special name and consideration as a special process. Ludwig gave as the characteristic local features—(1) a peculiar wooden-like induration of the connective tissue which will not receive impressions; (2) a uniform spread of this induration in such a way that it was always bordered by a zone of entirely unaffected cellular tissue; (3) a hard sublingual swelling with a bolster-like mass around the interior of the lower jaw of a deep red or bluish-red colour.

While it is impossible to harmonize the various contradictory statements made it would seem that the disease should be regarded as an intensely infectious phlegmon, occurring under peculiar anatomical conditions. It is, in fact, one form of septic sore throat with, in the majority of cases, a very uncertain etiology. Actinomycosis has been suggested as a causative factor, but not proven. The ordinary suppura-

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tion germs have been found. Fatal cases show a uniform disintegration of cervical cellular tissue and muscular substance, large sloughs mixed with an ichorous fluid or offensive pus, which may burrow down along the cellular planes to the sternum, mediastinum, or even pericardium.

Predisposing causes favouring the entrance of virulent germs are dental caries, eruption and avulsion, diseases of the buccal glands, herpetic ulcerations on the lips and tonsillitis. Cold as an exciting factor signifies little, for we now know that "colds" are frequently the result of some infection whose nature and mode of access to the tissues cannot always be made out.

In the true Ludwig's angina the pus originates in the sublingual hollow of Sebileau—*i.e.*, the triangular pyramidal space, the apex of which, situated below, corresponds to the point where the mylo-hyoid muscle borders the genio-glossus, and the base of which (situated above) stretches along under the tongue. Its external (oblique) wall is formed by the internal face of the inferior maxilla and the mylo-hyoid muscle; the internal (vertical) by the genio-glossus and the hyo-glossus. After the sublingual gland becomes first affected, and the submaxillary later. The microbes determining the sublingual phlegmasia may penetrate the submaxillary sheath, or the sublingual pus may dissociate the fibres of the mylo-hyoid muscle, and thus invade the submaxillary region.

The local symptoms are those of a phlegmon exerting pressure, and the constitutional correspond, assuming either a sthenic or asthenic type. Special importance is attached to the presence at the inner aspect of the dental arcade of a pad or button-like area of hardness. Conditions requiring to be differentiated from angina Ludovici are simple submaxillary adeno-phlegmon, osteo-myelitis of the jaw, and the (rare) hygroma of Fleischman.

Under the title of angina Ludovici only about 100 cases have been found, and in only 58 of these are the particulars given; 44 were males, 9 females, and 5 infants (sex not stated); maximum age sixty-six years—minimum, three months; 40 per cent. occurred between the ages of twenty and thirty years. Of the 58, recovery is noted in 33, and death in 25. Bacteriological examination in 9 showed the presence of streptococcus pyogenes (4), staphylococcus pyogenes aureus (1), albus (1), and erysipelas cocci (2); in one instance there was found a bacillus a little longer and narrower than the bacillus coli communis, but clearly distinguishable from the latter by culture reaction.

Our modern conceptions of infections enable us to sum up treatment as early incision, subsequent rigid antisepsis, and a general supportive treatment.

Dr. Newcomb, in conclusion, referred to the recent contribution to the subject by Semon, of London, who has advanced the proposition that angina Ludovici, along with phlegmonous pharyngitis, œdematous laryngitis, acute laryngeal œdema and erysipelas of the pharynx, are all practically the same thing, viz., septic throat inflammations, differing only in localization and severity, and having the same general etiology. He maintains that this view constitutes a simple clinical application of bacteriological principles to this *group* of septic inflammations.

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DISCUSSION ON TUBERCULOSIS OF THE UPPER AIR P SSAGES.

This was opened by Dr. WRIGHT, who spoke on etiology. He said that the stand formerly so boldly taken, that the tubercle bacillus was the sole factor in the etiology of tuberculosis, was no longer tenable. No one could, even for a moment, doubt that the *sine quâ non* in the etiology of what we now recognize as tuberculosis was the tubercle bacillus. This was partly due to the fact that pathologists, since the discovery of Koch, had ruled out of the category of tuberculosis those lesions which do not show the presence of the bacillus. This was a great gain in clinical as well as pathological classification ; but it has blinded many to the fact that, after all, the micro-organism is only one factor, which has been thrown into the foreground because of the impossibility of definitely understanding as yet the other factors. He called attention to the fact that the bacillus in the organism did not necessarily mean clinical tuberculosis or even histological tubercle. Its presence has been demonstrated in the upper air passages of healthy people. It is probable that every human being in civilized life received, at some one or more periods, a dose of the tubercle bacillus, sufficient, were the other factors also present, to produce fatal tuberculosis. Nearly one half have had demonstrable tuberculosis during their lives.

The speaker next called attention to evidence which went to prove that, besides the general systemic resistance to the activities of the tubercle bacillus, there resided in the upper air passages, not only a special protective arrangement against the entrance of the bacillus through the epithelium, but that there must necessarily also be some special withstanding influence after the bacillus had gained an entrance. He mentioned the various explanations which had been advanced to account for the passage of the bacillus through the epithelium. He stated that, in the infant and adult, the columnar epithelial lining was seen *post-mortem* to have a wavy undulating outline ; that it appeared too redundant to tightly fit the true cartilaginous tube of the larynx. This he demonstrated by a drawing of a section of an infant's larynx, and referred to Fraenkel's photographs of similar sections in the adult. This, together with the loose areolar tissue beneath, he claimed, was evidently a provision of nature in the normal state against the rupture of the epithelial lining, when the tube was dilated and put on the stretch by coughing, excessive use of the voice, etc. When the mucous membrane has become damaged and stiffened by inflammatory processes, there must be a tendency to produce larger or smaller gaps in the columnar epithelium, through which pyogenic cocci may enter the tissues beneath. He claimed that clinical evidence, as well as microscopial, tended to show that the tubercle bacillus, at least in adults, entered from the surface. Tubercular laryngitis in children was a rarity ; nevertheless, there was no conclusive proof that the bacillus was not carried, at least in some instances, to the larynx, by the lymphatics. There was no explanation why this should not occur as frequently, at least, as in the joints, except, possibly, the scantiness of communication between the external and internal lymphatics.

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The discussion was continued by Dr. C. C. RICE (New York), who considered *Diagnosis.* (Paper read by title.)

The object of the paper was rather to cite the usual and unusual manifestations of tubercular diseases of the upper air passages than to follow the beaten track and endeavour in minute detail to tabulate the *differential diagnosis* of tuberculosis of the upper air passages as cited in the text-books.

Tuberculosis of the nares is an exceedingly rare disease. Willigk in 476 autopsies found only one in which the nose was involved. It is manifest in two forms—(1) the ulcerations, which resemble tubercular ulcerations elsewhere, and are found on the septum and the floor of the nose; (2) small papillary growths usually attached to the turbinated tissues.

The writer thought tuberculosis of the nares may be easily overlooked, since it may coexist with syphilitic ulcerations on the septum, and because small growths are often removed from the turbinated side without submitting them to microscopical examination. It is possible that some of these latter are of tubercular structure. We should be suspicious of any chronic ulceration of the nose which resists the effect of iodide of potash when it is associated with pulmonary disease.

Tuberculosis of the Palate and Pharynx.

In Willigk's 1307 autopsies of tubercular cases the larynx was involved 237 times, and the pharynx once.

The writer believed that tuberculosis of the fauces is usually associated with a *general acute tuberculosis* rather than with the chronic process commonly found in the lungs. The cases reported as primary in the fauces were not clearly proven. It is probably true that the infiltration takes place at the same time in different organs. Occasionally the disease is seen manifested in the miliary nodules in the soft palate before it undergoes ulceration. The only differential diagnosis of importance was, he thought, the syphilitic ulcer, and the same difference exists between these two ulcerations here as elsewhere.

Tuberculosis of the Larynx.

The author believed that 80 per cent. of all the cases of laryngeal tuberculosis can be easily diagnosed, but in the remaining 20 per cent. care needs to be exercised, and that in perhaps one-half of this number a decision cannot be reached without the aid of the microscope and the employment of iodide of potash.

The author considered the diagnosis of tuberculosis laryngis from three points of view. Firstly, he spoke of the diagnostic points of the ordinary or typical cases; secondly, he mentioned the very early appearances in the larynx, which are thought to be significant of an incipient tuberculosis, and which sometimes exist before it is easy to recognize any disease of the lungs; and, thirdly, he cites the irregular cases, difficult of diagnosis, because they may coexist with other disease of the larynx, or because they present unusual pathological conditions.

In regard to the first class of cases, he thought nothing could be more

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typical than the semi-œdematous, semi-inflammatory swelling of the tubercular infiltrations and the superficial "moth-eaten" appearing ulcer which follows with its grey surface. These lesions differ from all others in that they are usually symmetrically bilateral and occur upon a very anæmic surface. The author thought it of little importance to consider the question as to whether the ulcerations are of different character in phthisis of the larynx, as he had little faith in the existence of "catarrhal" ulcerations, and thought the use of the words "aphthous" and "diphtheritic" as applied to ulcerations useless and misleading.

He mentioned as the earliest manifestations of tubercular laryngitis localized anæmia of the hard and soft palate in an otherwise healthy pharynx, and, with this, enlarged capillaries merging from the different portions of the palate towards the uvula; secondly, enlargement of the papillary layer in the inter-arytenoid commissure, feebleness of action of the internal adductor muscles of the larynx. He thinks the presence of recurring papillomata of the vocal band a suspicious circumstance, and he believes that there is often an intimate relation between them and tubercular laryngitis. He considered localized congestion of the arytenoid cartilages or the slightest appearance of bogginess suspicious.

Under the third division he mentioned as one of the difficulties of diagnosis the frequent coexistence of tubercular and syphilitic ulcerations in the larynx, and thought the patient may have pulmonary tuberculosis and syphilitic ulceration of the larynx at the same time.

He cited as unusual one or two cases which presented that pathological condition common enough to syphilis, but very rarely seen in tuberculosis—namely, adhesive inflammation at the anterior ends of the vocal bands. He also cited three forms of growths which are seen at times in the tubercular throat. First, the granular hyperplasia, which is the ordinary granulation tissue; second, the wart-like excrescences frequently seen in the inter-arytenoid commissure, and which are closely allied to the laryngeal papillomata; and third, the small round tubercular tumours appearing beneath unbroken mucous membrane, microscopically found to consist of a tubercular structure usually containing tubercle bacilli.

Treatment was discussed by Dr. SHURLY, who confined his attention to medicinal measures. He enumerated the various drugs which have during the last few years been suggested for tuberculosis. To modify laryngeal and pharyngeal ulcerations he had found profit from inhalations of chlorine gas, topical use of iodoform, and solutions of sodium formate. As internal specifics, iodine and chloride of gold and sodium had power of positive value. Oils of cloves and castor assist in some cases. He advocated gavage, which reduces fever, and markedly increases vitality. We should always combine vegetable food with the usually employed meat extracts. Alcohol in laryngeal phthisis is generally too irritating. We should never take away hope from our patients. As an application in dysphagia, sodium formate, or bicarbonate with eucalyptus, cocaine and morphine, are useful. Tracheotomy increases suffering, and in his hands curetting and scarification have done no good.

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Surgical Treatment of Laryngeal Tuberculosis. This was considered by Dr. J. W. GLEITSMANN (New York).

Dr. GLEITSMANN confined his remarks to the consideration of curettement with the single or double instruments. Surgical treatment is, broadly speaking, either endo- or extra-laryngeal. The former includes incision with knife or scissors, curettement, submucous injections, electrolysis or galvano-cautery ; the latter, laryngectomy, with excision of diseased parts, extirpation of the larynx and tracheotomy ; altogether, eight sub-divisions.

Gleitsmann has found recorded eight total and seven partial extirpations of the larynx for tubercular disease. In four of the total cases the diagnosis was made before operation, two were made on account of lupus, and two had been diagnosed as carcinoma ; of the partial cases, five were made for tuberculosis, one for lupus, and one for supposed carcinoma.

As to curettement it is steadily gaining in favour. Only six out of seventy publications consulted are indifferent to or oppose it. We cannot hope that it will exert a favourable influence on the almost always present pulmonary complication, but we are justified in speaking of a cure of the larynx, when, in spite of the continuance of the pulmonary disease, the laryngeal symptoms have subsided, when the larynx bears a normal aspect, and, furthermore, when no trace of the disease is found *post-mortem*, conditions which are established beyond a doubt, and enumerated in literature. Relapses may occur, but curettement does not, of course, remove the diathesis, nor does any other treatment.

This procedure is contra-indicated in advanced lung disease, in disseminated laryngeal tuberculosis, presenting one large ulcerated surface, and in severe laryngeal stenosis. Two writers claim to have observed outbreak and hastening of the pulmonary process after curettement, but this is probably *post* and not *ergo propter*. Lesser objections are hæmorrhage, pain and difficulty of operations. Bleeding can, however, be averted by a solution of lactic acid and ferric chloride ; strong cocaine applications will almost entirely obviate pain, and the remedy may be injected directly into the tissues. Difficulty of operating is now a logical objection to any legitimate procedure.

Curettement is analogous to the excision of a tuberculous point. It removes a diseased area, a focus of infection which is a constant drain on the already debilitated patient. It is, in properly selected cases, more effective, quicker and better in results than any other procedure. The infiltration of the arytenoid region, the great cause of dysphagia, can often be remedied at one sitting by the double curette. Healing is prompt, and cicatrization rapid. Moreover, the suffering of patients due to abundant nerve proliferations (Gouguenheim and Balzer) justifies arytenoidectomy. Even in active pulmonary disease, with hectic, diminution of dysphagia means more nourishment taken, and a consequent improvement in the general condition. Additional advantages gained are improvement in voice, cough, and respiration.

Indications for curettement are :—

1. Primary tubercular disease, without lung complication.

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2. Cases with concomitant lung disease, either incipient, or which has stopped short of softening, or hectic.

3. Especially circumscribed ulcerations and infiltrations.

4. Dense, hard swelling of the arytenoid region, ventricular band, posterior wall, tuberculous tumours, and affections of the epiglottis.

5. In advanced lung disease, with distressing dysphagia from arytenoid infiltration.

Contra-indications are :—

1. Advanced pulmonary disease and hectic.

2. Disseminated tubercular disease of the larynx, leaving little or no area of healthy tissue.

3. Extensive infiltrations producing severe stenosis, where tracheotomy is indicated.

As to *technique*, Heryng's single curettes are best suited for cleaning and scraping of ulcerations ; Krause's double curettes and Heryng's rotary curettes for excision of tuberculous infiltrations. Sub-glottic lesions can be operated upon with Scheinmann's forceps ; and with laterally bent forceps an attempt may be made to reach also Morgagni's ventricles. Absolute quiet after operation is necessary ; and, until cicatrization is complete, daily applications should be made of lactic acid, or pyoktanin (one or two per cent.). Cicatrization occurs in from seven to twenty-eight days. Ulcerations well defined do better than if shallow and extended. Dense infiltrations, which are generally localized, do better than œdematous conditions.

After giving the statistics of Heryng, Gouguenheim and Krause, with their 455 cases, Dr. Gleitsmann narrated his own experience. The double curette was used in 12 cases, all with lung complication ; two operations were for infiltration of the posterior wall alone ; one for such, with affection of the ventricular band combined ; four arytenoidectomies ; three arytenoidectomies and excision of the ventricular band, and two of the latter alone. Arytenoidectomy had to be performed a second time on two patients, on account of recurring infiltration. One patient died from heart failure, and another from advanced lung disease ; four are without recurrence of laryngeal disease, from six to ten months ; one had an affection of the posterior wall ; another of the ventricular band, and two of the arytenoid region.

As to intra-laryngeal injections, Dr. Gleitsmann has used the lactic acid plan of treatment, and also that of creosote in an oily menstruum, recently suggested by Chappell, of New York. With lactic acid, he has seen one instance in which the injection of a few drops into an already infiltrated arytenoid region was followed by considerable swelling of the latter, and curettement became necessary, with a relief of symptoms following. With electrolysis the writer has had no personal experience. Tracheotomy is regarded as a justifiable procedure in urgent stenosis.

The paper closes with a most extensive bibliography of the whole subject, more than two hundred references being contained therein. While it is not claimed that it is complete, it is probably the most extensive yet published on this subject, and lays all students of laryngology under great obligations to its compiler.

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Closing Session, Wednesday, June 19th.

The discussion on tuberculosis was continued by Dr. T. MORRIS MURRAY, of Washington, D.C., who had used lactic acid in some seven or eight cases of local ulceration. One case was curetted within two weeks of death—the uvula being also infiltrated. The ulcer healed, and the patient was rendered much more comfortable.

Dr. INGALS said that, comparing one thousand cases of operative with the same number of non-operative cases, he believed that more would recover in the latter category than in the former. A few cases recover under simple measures. He has used lactic acid without scraping, but in the deeper cases of infiltration curetting is necessary, though he regarded it as of doubtful propriety to cut away large masses of tissue. As a local application, he has used perchloride of iodine in solution (gr. i-iij.—℥j). Cocaine he does not like, from its effects on the nervous system. Moreover, patients were not so well able to bear pain afterwards. For a local sedative, he preferred a mixture of tannic and carbolic acids, with morphine. It caused some smarting at first, but no pain afterwards.

Dr. DALY had seen cases recover under diet and inhalations, but especially iodoform, with which he salinated the patient. We are still remiss in the matter of public hygiene while we allow phthisical cases to travel in sleeping cars, stay at public hotels, etc. Creosote should be given in those cases where it can be borne.

In closing the discussion, Dr. WRIGHT expressed his scepticism as to the value of any treatment of laryngeal tuberculosis. While some cases healed under curetting and lactic acid, most of them did not. The disease did not always give symptoms, even where the ulcerations had penetrated even to the cartilage. The cures reported had been in cases limited to the first stage of the disease. Few cases were suitable for radical operation.

Necrosis of the Middle Turbinate. This was the title of a paper by Dr. A. B. THRASHER (Cincinnati).

The frequency of disease in this region is partly accounted for on anatomical grounds. The situation of the middle turbinate in the narrow apex of the naris, hemmed in on both sides by solid bony walls, leaves little room for inflammatory swelling, and causes great pressure when the parts are swollen. In acute rhinitis the lower turbinate is doubtless affected more frequently than the middle, but there is also less danger of implicating the deeper structures, or of occluding any of the natural openings of the accessory cavities. When the middle turbinate is inflamed the pressure on the adjacent walls is great, and the openings of all the sinuses are easily closed, thus causing a mechanical retention of the normal secretions, which in consequence may lead to a purulent inflammation.

While ethmoiditis is a comparatively frequent disease, necrosis of this bone is certainly rare. So seldom is it present that Zuckerkandl declares he has never seen it. Woakes declares that necrosis is present, as a rule, whenever there is ethmoiditis. This statement, however, is not

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sustained by the published examination of his twenty cases, the pathologist only finding true necrosis in two out of the twenty.

Dr. Thrasher can see no reason why prolonged disease of this bone may not result in necrosis, just as is the case with other bones of the body. The projection of the middle turbinate into a narrow cavity where a small amount of swelling will cause pressure and occasion retained secretions either in the ethmoidal cells or in pockets formed by the unequal contour of the adjoining surfaces, all of which conditions are favourable to the development of violent inflammation, destruction of the vitality of the bone and consequent necrosis. Given a case of ethmoiditis and a polypus springing from under the middle turbinate, the conditions are certainly fairly ripe for the development of a necrosis of the middle turbinate. On the other hand, that a polypus may spring from a membrane bathed in the secretions from a purulent ethmoiditis is quite possible, as the analogous condition of aural polypi from a purulent otitis media with necrosis is certainly rather common.

No causal relation is believed to exist between cysts of the middle turbinate and necrosis of this bone, yet in one well-marked cyst of the anterior extremity of the middle turbinate well-marked evidence of beginning necrosis was discovered after removal.

The following clinical histories were given of two undoubted cases of necrosis of the middle turbinate.

Married woman seen in 1891 for a severe pain in left side of the nose radiating over entire left side of the face and head. Pain was constant, although subject to periods of exacerbation, so regular and so intense as to have called forth a prolonged anti-malarial treatment. Left side of her nose was slightly swollen. There was a creamy discharge from the left naris, flowing down from beneath the middle turbinate, and a bad odour, but not such as would lead one to expect necrotic bone. The anterior extremity of the left middle turbinate could be seen much swollen pushing hard upon the septum, and down upon the lower turbinate. The enlarged middle turbinate had much the appearance of a fibroid tumour. Severe influenza one year before.

This projecting mass was removed with a cold snare, the portion taken away being one inch long by about one-third in its vertical, and one quarter in its lateral diameters. The anterior extremity was somewhat bulbous. The mucous membrane was tightly drawn over a spongy bone, and perhaps one third of the outer portion of the bone was entirely dead. The adjacent ethmoid cells were exposed and thoroughly scraped with a sharp curette. There appeared to be no involvement of the other cavities, and with nothing else than a mild detergent spray the parts healed kindly, and the bad symptoms disappeared. The amount of pain experienced by the patient was so great that malignant disease was feared, yet the bad symptoms subsided quickly after the operation, and had not returned up to within six months ago, when the patient was seen for the last time.

A male, aged twenty-eight, seen in 1892, for an obstruction of nasal breathing. He suffered severely from neuralgia of the supra- and infra-orbital nerves, for which he had been under medical treatment for about

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two years, with but slight temporary relief. The right middle turbinate presented as a large rounded mass, pushing out the outer wall of the nose, and filling the middle meatus. There was but little discharge, and that seemed to come from an hypertrophied lower turbinate on the same side. The left naris was much narrower than the right, but otherwise normal. In an endeavour to remove the growth, *en masse*, with a cold snare, the tissue broke down, leaving a large open cavity, with exceedingly thin walls. A part of the bony tissue removed bore well-marked evidence of being dead. There seemed to be no connection between the opened cyst and the ethmoid cells.

The sensation imparted by the probe while exploring this region often causes us to expect dead bone when we only feel rough or denuded bone. In neither of the foregoing cases was the odour of dead bone prominent, not as it is, for example, in syphilitic necrosis. In neither of the two cases was the writer sure of necrosis until he had removed the specimen, and only in the first case did he suspect it. The symptoms of middle turbinate disease are manifold :—

1. Pain, generally referred to the infra- or supra-orbital nerve, sometimes to the eye or orbit (more especially when the ethmoid cells are also involved) and occasionally to the ear.

2. Nasal discharge, sometimes of exceedingly unpleasant character. The discharge from the cells themselves often irritates the membrane in front, giving rise to a sore and red nasal extremity.

3. Obstruction to breathing and anosmia, but frequently the breathing channel is not impeded, even in severe inflammation of the middle turbinate.

4. Obstruction of the natural openings of the accessory cavities, notably the antral, frontal and anterior ethmoid, occasioning in each case its own train of symptoms.

5. External deformity of the nose only, and when the ethmoid cells are involved, the eye is often misplaced by orbital swellings.

6. Various reflex nervous phenomena.

Treatment.—When the middle turbinate is causing trouble, it is necessary, as a rule, to resort to surgical measures. In conditions of simple imflammation, a mild alkaline spray may be followed by relief; or, where there is much congestion, a little cocaine, and in worse cases scarification, or better still, a deep incision with a narrow sharp-pointed bistoury, may be needed. When, however, the case is of long standing, and you have reason to suspect either an osteitis or a necrotic bone, then a prompt removal of the offending tissue is advised. When this can be accomplished by a cold snare, this method is to be preferred. The drill or trephine may be necessary, to enable the snare to take hold. Casselberry's saw-tooth scissors work admirably well, in some instances. The Curtis drill is useful, in case the bony tissue is very firm, and it can be used at the same time to open up the ethmoid cells and break down the inter-cellular walls. It is not thought that this is a proper region for the use of the electro-cautery. The inflammation following the use of the cautery on the middle turbinate, except on the anterior tip, is apt to occasion serious swelling, painful pressure, and great danger of septic

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infection. The cold steel wire snare does the work nicely, in the large majority of cases, and, in the writer's experience, has been followed by no serious symptoms.

Dr. THRASHER also related the history of a case of *Congenital Osseous Stenosis of the Naris.*

Baby C., aged eighteen months, was brought for impaired nasal respiration in April, 1895. He was a well-nourished, handsome boy, but inclined to mouth-breathing. There was a muco-purulent discharge from the right naris anteriorly. Digital examination of the vault of the pharynx revealed a mass of adenoids, to which was immediately attributed the nasal trouble. Under chloroform narcosis the adenoids were removed, when with the index finger of the left hand in the naso-pharynx the writer passed a curette through the right naris and ran against an obstruction just before he reached the finger in the naso-pharynx.

He could find no opening large enough to pass a small nasal curette. Firm pressure with the curette broke down the partition, which was of thin bone, somewhat thicker near the septum, and thinning out to apparently the thickness of an egg-shell at the outer wall. This osseous web was seemingly united to the lateral wall at the posterior extremity of the lower turbinate, but was not attached to the turbinate, as it could readily be detected by the finger in the naso-pharynx.

Dr. LANGMAID stated that he had seen three cases of congenital occlusion of the nares. He thought that in these cases the nose became functionally inactive, and that it was frequently some time after the removal of all mechanical obstacles to the respiration that mouth-breathing finally ceased.

Dr. INGALS had seen no congenital closure cases, but thought that partial closure of the posterior nares was very common, and frequently overlooked in adenoid cases. He always made it a point while operating on the latter to pass a probe through the nose, and so determine the patency or non-patency of the nostrils. This could be done while the patient was still anæsthetized.

Cysts of the Oro- and Naso-Pharynx.

Dr. JONATHAN WRIGHT reported two cases of this nature, criticizing some of the statements made ten years ago by Tornwaldt with regard to diseases of the so-called pharyngeal bursa, and the frequency of naso-pharyngeal cysts. Sinuses in the naso-pharyngeal mucous membrane are not, Dr. Wright maintains, very common, and cysts are very rare. Many catarrhal cases owe their origin to neither cysts nor sinuses. Finally the so-called "bursa" is not a normal characteristic, but the result of chronic inflammations. Dr. Wright spoke of the mode of formation of such cysts by the agglutination at their edges of the folds and projections of the mucous membrane in infancy and adolescence, whereby result sinuses or closed cavities. In the former may be produced and discharged thick muco-pus, while in the latter the accumulation of and distension by muco-pus of the surrounding walls gradually leads to cyst formation. Glandular retention cysts are excluded, as glands are

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exceedingly scarce in the neighbourhood of lymphatic tissue in the naso-pharynx, and, when they are seen, show no tendency to cystic dilatation.

Dr. WRIGHT also drew attention to drawings made of a section through the folds of the mucosa in the pharynx of a still-born child. Near the bases of the folds were evident oblong spaces, either just where the lymphoid tissue bordered on the connective tissue, or just within the confines of either of these two historical elements. These spaces were lined with a single layer (frequently incomplete) of endothelial cells. These openings should be considered as lymph spaces, visible, because they were not gorged with the round cells which crowd them elsewhere. It is possible that retention cysts might originate from these spaces becoming closed cavities. The writer then gave the clinical histories of the cases suggesting the title of the paper, and presented drawings of sections made.

Papillary Fibroma of the Septum Nasi.

Dr. WRIGHT also exhibited drawings of a case of this nature. In a previous paper ("New York Med. Journ.," December 26th, 1891) he called attention to the confusion in nomenclature introduced by Hopman, in calling papillary hypertrophies and papillary fibromata by the one name of papilloma. Differing as they do in pathogenesis, structure, and usual situation, and having only in common occasionally the same appearance to the naked eye, there is no excuse for the term which has, unfortunately, been adopted by the majority of authors. The history of the case reported by the writer is, briefly, as follows :—

A Roumanian woman, twenty-eight years old, had frequent epistaxis in childhood, but was not sure from which nostril. For past seven years had left nasal obstruction on forced inspiration. On examination there presented anteriorly in the left nostril a vascular, soft, papillary, pedunculated, movable mass, which was easily and completely removed by the cold snare with only moderate hæmorrhage. It was irregularly globular and flattened by pressure from the ala. The site of all ailment was the upper part of the cartilaginous septum, at a spot about two centimètres from the columna. After removal, inspection showed that this spot coincided with a region which was subjected to the attrition of the upper edge of the triangular cartilage which forms the ridge known as the "plica vestibuli" (Zuckerkandl), and which in this case rubbed against the septum when the lower edge of the triangular cartilage rolled out by muscular action in the dilatation of the alæ nasi during inspiration. The base of the growth was cauterized. No recurrence in nine months.

Microscopical examination showed the pedicle to be made up of fibrous tissue, with numerous branches covered with columnar epithelium, approximating a squamous type where subjected to irritation. The stroma was scanty, but contained a large number of lowly-organized blood vessels honeycombing the neoplasm at some points. There were some serous infiltrations of the stroma, with a moderate number of round cells. Occasionally the epithelium formed digitations into the stroma. In places the columnar epithelia still retained their

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ciliæ. Even with a one-twelfth homogeneous immersion objective it was impossible to make out any stickle cells among the squamous epithelium.

Dr. NEWCOMB stated that he had recently removed with the cold snare, and without bleeding, a naso-pharyngeal cyst. Examination had not yet been made.

Dr. LANGMAID had also recently removed a fibro cyst from the naso-pharynx. Its attachments forbade the use of the snare, and avulsion was employed without bleeding.

The Relation of Vaso-motor Disturbances to Disease of the Upper Tract.

This topic was discussed by Dr. DALY. He spoke of the usual tumescent condition of the nasal mucosa, and of the pallid condition described by Glasgow, in which there was a constant leakage of sero-mucus. His statistics showed a cure in 63 per cent. of catarrhal and hay fever asthma, in which treatment had been directed to the interior of the nose, and in 40 per cent. of asthma of the spasmodic variety.

He would conclude that :—

1. Abnormal vaso-motor disturbances may be either primary or secondary.

2. Both may be active and progressive.

3. The surest and quickest relief is afforded in those cases in which surgical interference finds its proper election.

Dr. MULHALL thought that there were two kinds of vaso-motor disturbance in the nose, analogous to the changes in circulation of the blood from anger, which made some people flushed, and others pale. Much relief could be afforded in this class of cases, by proper exercise and mode of life, without any intra-nasal treatment whatever. He advocated daily cold water frictions, mild galvanism, a dose of 1-120 gr. atropia, in the morning, on an empty stomach, and one-drop doses of Fowler's solution, after meals.

Dr. SIMPSON put less faith than formerly in the theory of reflex disturbance. Nasal polypi might excite asthma from great irritation ; but there were other causal influences behind the polypi. He narrated several clinical cases to illustrate his point, and thought that if we would closely examine our patients, it would be found, in many instances, that the cause of the trouble was near the seat of disease we had to treat.

The Cigarette Habit.

This was the title of the closing paper of the Congress, read by Dr. MULHALL. Chewers, he said, smokers, and snuff-takers each derive a special variety of satisfaction fron the use of tobacco. Cigarette smokers, from their usual habit of inhaling the smoke, derive more pleasure than cigar or pipe smokers. The smoke does not penetrate into the pulmonary structure beyond the first division of the bronchi. The smoker accustomed to certain degrees of satisfaction does not find it in either a milder or stronger cigarette, or in a cigar. The feeling experienced is a pleasurable irritation of the laryngeal and tracheal fibres of the pneumogastric nerve. It is a nicotine satisfaction.

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The amount of absorption of this drug varies according to the extent of surface—which in inhalers is three times that of non-inhalers. Three cigarettes are considered to have the nicotine strength of one cigar, and there is no reliable evidence to sustain the assertions of the anti-tobacco champions that the cigarettes are adulterated with opium or other deleterious drugs. Cigarette smoking is a "deadly" habit because of its frequency. Its effects are analogous to those of giving a certain amount of drug in small and frequent doses.

The constitutional effects are those of tobacco in all forms—always nicotinism. On the young the results are most pernicious, though less harmful in adolescence. Cigarettes may be said to teach the use of tobacco. The first cigarette never nauseates. Locally the drug may aggravate pre-existing trouble, but it rarely originates any disease worthy of the name. There may result a slight hyperæmia of the mucosa, or an insignificant catarrh, with a pearly secretion ejected in small pellets with a single slight cough. Once in a while a whistling *râle* is heard over the bronchi, but only in the case of deep and excessive inhalers.

Mario, the great tenor, inhaled constantly, and between the acts of the opera. Maxwell, the St. Louis murderer, while in prison inhaled forty cigarettes daily, and, though he was a nervous wreck, his throat did not show any signs of disease, as was proven by a *post-mortem* examination.

Dr. INGALS remarked that he could not accept the doctrine that tobacco did no harm to the throat, as he had seen pronounced tracheal cough in inhalers.

Dr. SEILER thought that the habit of continual spitting of some cigar and cigarette smokers was the real cause of the local trouble, as this habit led to an abnormal dryness of the pharynx.

Dr. LANGMAID believed that he could tell by the colour of the mucosa of the pharynx whether a man smoked or not. Cigars have less bad effect on the throat than pipes, owing to the heat in the stem of the latter, and to the relatively larger mass of fire in the bowl. He thought that the effect on the young of tobacco in any form was especially destructive to the power of consecutive thought. As to Mario, it was notorious that he never really exerted his vocal powers more than once a week. The rest of the time he merely intoned. He thought that, as a general thing, tobacco was distinctly deleterious to the finer qualities of the singing voice.

During the Sessions of the Congress, the following papers were read by title :—

"Foreign Bodies in the Œsophagus." Dr. HARRISON ALLEN, Philadelphia.

"Cyst of the Maxillary Sinus." Dr. CHAS. H. KNIGHT, New York.

"Pemphigus of the Pharynx and Larynx." Dr. M. R. BROWN, Chicago.

"Compensatory Arytenoid Movement." Dr. WILLIAM PORTER, St. Louis.

"A Study in Diphtheria." Dr. S. H. CHAPMAN, New Haven.

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The following gentlemen were elected to Active Fellowship in the Association :—

J. E. BOYLAN, M.D., Cincinnatti, Ohio. Thesis, Herpes Chronica Pharyngis.

F. E. HOPKINS, M.D., New York. Thesis, Œdema of the Larynx, with report of a case.

THOS. HUBBARD, M.D., Toledo, Ohio. Thesis, The Treatment of Acute Laryngitis.

J. E. H. NICHOLS, M.D., New York. Thesis, The Intra-nasal Causes of Headache.

The election of Officers for the ensuing year resulted as follows :—

President—Dr. W. H. DALY, Pittsburg, Pa.
First Vice-President—Dr. JONATHAN WRIGHT, Brooklyn, N.Y.
Second Vice-President—Dr. A. W. DE ROALDES, New Orleans, La.
Secretary and Treasurer—Dr. H. L. SWAIN, New Haven, Ct.
Librarian—Dr. J. H. BRYAN, Washington, D.C.

Pittsburg was selected as the next place of meeting, the date to be determined by the Council.

FRENCH SOCIETY OF OTOLOGY, RHINOLOGY, AND LARYNGOLOGY.

Meeting, May 1st, 1895.

On Acute Ulcerative Lacunar Tonsillitis. By Dr. E. J. MOURE, Lecturer in the Faculty of Bordeaux.

As the title of this paper indicates, my object is not to study in this place the different forms of ulceration which may have their seat in the buccal tonsils, but to call attention to a somewhat unrecognized lesion, or at least one which has been very inadequately described up to the present.

I have chiefly undertaken this work for the purpose of indicating a point in the pathology of the tonsils, and it is my endeavour to make it a chapter by itself, devoted to a series of lesions which have generally passed without being perceived or have been buried under various appellations, a fact which I shall have little difficulty in demonstrating.

I. Without carrying my bibliographical researches back to Hippocrates or Galen, and without professing to have gone through all the French and foreign literature, I have, for all that, carried out a considerable amount of research in the treatises on international medicine in the different dictionaries, and in the majority of special writings, in order to be able to affirm that most authors are dumb with regard to this question. Almost all of them accept a uniform classification in which infectious ulcers (tuberculosis, syphilis, formerly scrofula) alone occupy a distinct place side by side with the ulcerations arising from eruptive fevers, to which all give equal importance.

Without recalling here the names of the numerous authors in whose

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