

bone in cholesteatoma, as it often occurred without blockage of the external orifice, as in cases of caries with large postnasal or meatal openings. He considered it to be a chronic infective ulceration, absolutely independent of pressure.

Dr. DUNDAS GRANT, in reply, denied that in all cases of cholesteatoma there was coexistent ulceration. In complete cases the pre-existent ulceration had healed. He had not committed himself to the opinion that the dilatation of the cavity might not be in part the result of infective ulceration, but he was in favour of the view that it was mainly attributable to pressure, such as was exercised by an aneurism when it eroded the sternum, or by cholesteomata of the external auditory meatus on the bony walls of that passage. He was glad to find Dr. Pritchard's views so closely coincided with his own. He looked on cholesteatoma as a "desquamative dermatitis," the stages being the formation of a derma lining the cavity, then the inflammation of this derma resulting in desquamation, and the agmination of desquamative products.

SOCIETIES' PROCEEDINGS.

EIGHTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.

Held in Washington, D.C., June 2, 3, and 4, 1902.

President: CHARLES W. RICHARDSON, M.D., of Washington, D.C.

(Continued from page 488.)

Dr. EDWARD B. DENCH (New York) read a paper upon *Various Operative Procedures for the Relief of Chronic Suppurative Otitis Media and their Comparative Value.*

In a consideration of the topic he confined his remarks to those cases of long standing in which suppuration had persisted in spite of the ordinary measures for relief. In all cases the cause of the otorrhœa was diseased bone within the tympanic cavity. In order to effect a permanent cure, it was necessary that all diseased foci should be removed, and that any wound resulting from the surgical interference should be made to heal as quickly as possible, in order that all regions previously diseased might be quickly covered with normal epithelium. In cases where the caries was confined, either

to the ossicles or to the ossicles and those parts of the tympanic cavity which were easily accessible through the external auditory meatus, excision of the ossicles and thorough curettement of the tympanic cavity through the external auditory canal constituted the ideal procedure, both on account of its simplicity and its safety. The author showed, both from his own statistics and those of other operators, that the simple operation of removal of the ossicles and thorough curettement of the tympanum effected a cure in at least one-half of the cases operated upon, and he advised this procedure, provided the cases submitted to the operation were carefully selected. In every case in which this operation was undertaken the author emphasized the necessity of a thorough and complete search for the incus. The reason for this was that this ossicle was most frequently the initial seat of the intratympanic caries, and even though only a small fragment of the ossicle remained, this would be sufficient to keep up the suppuration. It should be remembered that the incus usually lies close to the margin of the tympanic ring. Occasionally it may be displaced into the lower part of the tympanic cavity by the operator in extracting the malleus. The speaker drew attention to the fact that, while many operators considered the operation as finished with the removal of the ossicles, it was important to bear in mind that the operation was not complete until all diseased bone had been removed from the tympanum by the thorough use of the curette. Hæmorrhage could usually be controlled by packing with sterile gauze strips or with gauze strips saturated in a sterile solution, either of adrenalin chloride or of suprarenal extract. When there was extensive caries of the middle ear it was necessary to thoroughly expose the tympanum and the adjacent cells by the free removal of the osseous walls. When the mastoid cells were also involved, the mastoid antrum was entered as the initial step of the procedure, and the author advised this as the first step in practically every case in which the radical operation was indicated. His custom was to make the incision through the soft parts, $\frac{5}{16}$ to $\frac{1}{2}$ inch behind the line of the posterior auricular fold. The anterior flap was then dissected forward and the posterior margin of the bony meatus exposed. The author found that if he dissected out the fibro-cartilaginous meatus from the bony canal that this membranous tube would rupture posteriorly close to the level of the drum membrane. He favoured entering the mastoid antrum through the cortex rather than following the course advised by Stacke of entering the mastoid antrum through the external auditory canal as the initial procedure. The operator was next

advised to follow the upper wall of the external meatus inward and remove the floor of the tympanic vault, thus throwing the tympanic vault and the antrum into one large cavity. The next step was to break down the bridge between the opening already made in the mastoid and the external auditory meatus. This procedure involved the removal of the posterior wall of the external auditory meatus. This should be done freely, the bridge being taken away completely down to the floor of the external auditory canal, as far as two-thirds of the posterior wall of the meatus should be removed completely and made continuous with the mastoid opening. It was considered unsafe to remove the posterior wall of the canal to this extent throughout its entire depth, for fear of injuring either the facial nerve or the horizontal semicircular canal. If the bone was removed according to the plan already described, the horizontal semicircular canal and the aquæductus Fallopii lying just below it could be easily seen by the operator, and all diseased bone remaining could be removed without injury to these structures. Where the mastoid cells were pneumatic, these were to be thoroughly explored until firm bone was reached. Hæmorrhage sometimes constituted an obstacle to the operation, but could always be controlled by firmly packing the cavity with gauze. In some instances the operation was prolonged on account of persistent oozing from the bony structures, but in no case was hæmorrhage so severe as to prevent the completion of the operation. The middle ear and mastoid having been thoroughly cleared out, it was next necessary to provide an epithelial lining for the extensive bony cavity thus formed. Such a cutaneous lining was obtained by forming flaps from the posterior wall of the fibro-cartilaginous meatus and from the concha. The exact form of flap to be employed must vary with each individual case. The writer had found that in most cases it was wise not to limit these flaps to the fibro-cartilaginous meatus, but to take some tissue from the concha as well, in order to secure a large amount of cutaneous covering for the exposed bone. He had also found that it was of material advantage in most cases to dissect out the fibro-cartilaginous tissue from these flaps, so that the integument might be applied more perfectly to the bony walls of the cavity. There was danger in this operation of injuring the facial nerve, the horizontal semicircular canal, the labyrinth, and the lateral sinus. Any of these accidents could usually be avoided by care on the part of the operator. Comparing the results of these two operations upon the function of the organ, the writer stated that the surgeon could generally promise that the hearing would probably not be worse

after the simpler operation of removal of the ossicles, but would, in the majority of cases, be improved. The effect of the radical operation upon the hearing was somewhat uncertain. In many cases it remained the same as before the operation, in a few it was made worse, and in others the hearing was improved. It was, therefore, wise, prior to the performance of the radical operation, to caution the patient that the function of audition might be greatly impaired as the result of the operative procedure.

Dr. GEORGE L. RICHARDS (Fall River, Mass.) presented a paper on *Chronic Suppurative Otitis Media: When should Radical Surgery be Employed in its Treatment, and of what should this Consist?*

Out of sixty-four cases of brain and cerebellar abscess, he had found 82 per cent. to be the result of long-standing chronic purulent otitis media. Out of 9,000 autopsies at Guy's Hospital, the cause of death in two-thirds of 1 per cent. was chronic suppurative otitis media. The small proportion, however, was no argument for shirking the duty of explaining to the patient that he was carrying in his head what was equivalent to a charge of dynamite. According to his experience, hearing was generally improved by operation. Ossiculectomy was advised by many aurists as the first operation to be done. Distressing nausea and vertigo often followed this operation, and facial nerve paralysis, inward as two-thirds the length of the canal—that is, the outer lasting several months, was sometimes observed. He therefore preferred in most instances to do the radical operation. It was essential to have good illumination for this operation, preferably that obtained from the forehead electric light. The tympanic opening of the Eustachian tube should not be overlooked in the process of curetting the cavity. Most of his patients had left the hospital in less than two weeks after the operation, and several of them in another week had returned to work. The after-treatment, though simple, might last from six weeks to six months.

Dr. S. MACCUEEN SMITH (Philadelphia) advocated the early recognition and treatment of acute suppurative disease of the ear in order to prevent many of these cases from becoming chronic. A very large percentage of these cases could be cured if proper treatment were early instituted. Early incision of the membrana tympani could do no harm, and would often arrest the process before suppuration had begun. His experience had been that in a rather large percentage of cases in which the tympanic operation had been done the radical operation would be subsequently demanded. He preferred the Stacke-Schwartz operation, because

of the diminished danger to important contiguous structures. The lateral sinus was certainly more forward in these chronic cases, as pointed out in Dr. Richards' paper. The effect on the hearing was of slight and secondary importance.

Dr. R. C. HOLMES reported another case of facial paralysis coming on after ossiculectomy, and curetting of the upper and posterior wall. Complete paralysis developed on the seventh day, and disappeared in about two weeks. He had never been in favour of the Stacke operation, because of the liability of wounding important structures. A study of a great many temporal bones and taking plenty of time in operating would minimize these dangers. He had frequently exposed the dura and the lateral sinus, and did not think there was any danger in so doing. He preferred to open up and see what he was doing, so as to effect a permanent cure. He believed that there should be 100 per cent. of cures after one or more radical operations, barring intracranial complications. He was satisfied that Dr. Dench's method of using the incus hook was better than that taught him by Schwartze, and he had proved by actual experiment that by the latter method there was danger of dislocating the incus into the antrum. He preferred to do the plain Stacke-Schwartze operation, and the actual time of operation with him varied from twenty minutes to an hour and a half. If one cut freely into the cartilage one was likely to have perichondritis result, with consequent shrinkage of the ear. In the majority of cases he left the wound open at first, allowing it to close in the second or third week. In young persons it could sometimes be closed at once. In the vast majority of cases the hearing had been better or not injured. Chronic suppuration, even of a low grade, was unquestionably deleterious to the general health, as was shown by a slight rise of temperature and a sallow complexion. The mouth of the tube should be most thoroughly, almost severely, curetted.

Dr. JAMES F. McCaw (Watertown, N.Y.) asked what was the experience of the members with ossiculectomy as to the formation of a new tympanic membrane, and what had been the effect on audition? • This question was prompted by personal experience. Subsequent to this new membrane formation improvement in hearing had been afforded by the use of the Valsalva method. Immediately after the operation the hearing had been enormously augmented. The formation of the tympanic membrane had required about two years.

Dr. M. D. LEDERMAN (New York) said that he thought all would agree that the radical operation would be the future treatment

of chronic suppurative otitis media, but the dangers must be taken into consideration. At the last meeting of the Society he had reported a case in which there had been a malposition of the lateral sinus. In using the chisel heroically one was apt to make too rapid progress. Where there was mastoid involvement there was danger of sinus thrombosis from the opening of a sinus previously healthy. He knew of three such cases; hence the necessity for the cautious removal of the diseased tissue around the sinus. He recalled a case in which reformation of the drum took place in four weeks, the case being one of long-standing suppuration. At that time the patient complained of pain, and, fearing retention of secretion, the membrane was removed, and also some granulation tissue found in the attic. This caused severe vertigo and vomiting, which necessitated the patient's remaining in the office for two hours. One of his cases had been compelled to stay in bed for two weeks because of severe vertigo and vomiting. He would again insist upon the great importance of thoroughly curetting the tympanic orifice of the Eustachian tube.

Dr. ROBERT LEVY asked what was the average length of time the discharge lasted after the two flap methods described? Also, in those instances in which the posterior wound was allowed to remain open for three or four weeks, what was the after-treatment of this portion?

Dr. DENCH said that the drum membrane sometimes reformed, and it seemed often to make the hearing worse. He did not think the special flap method required had any effect on the time the discharge lasted; he ordinarily expected this time to be from six weeks to two months.

Dr. G. HUDSON MARKEN (Philadelphia) reported a case, and exhibited the patient, of a *Naso-pharyngeal Tumour*.

He was a youth of eighteen, having a tumour attached to the posterior third of the left nostril and to the vault of the pharynx. Both nostrils were practically occluded. The tumour filled the vault of the pharynx. A small section of the growth had been examined by Dr. David Riesman, who reported it to be an œdematous fibromatous growth characterized by stratified epithelium. On July 7, 1901, under ether, a portion of the growth had been removed with a snare and No. 10 wire. The tumour was very vascular, and the operation was followed by considerable hæmorrhage. This specimen was examined by Dr. W. M. L. Coplin, and thought to be granulomatous. Nothing had been done since that time, and the patient had become apathetic in

regard to it. There had not been much change in the case, except the appearance of an infiltration of the muscles of the cheek. Antisyphilitic remedies had been employed without effect.

Dr. H. W. LOEB said he did not place over-much reliance on the diagnosis by the microscope of this class of cases. He would suggest that in this particular case electrolysis be used. He had seen marked improvement in three such cases, not only in a reduction of the vascularity, but in the size of the growth, and others had reported good results. One of his cases had been kept under observation about ten years. He did not like the infiltration in the cheek, because in one of his cases that proved to be malignant, and had acted in a similar manner; the mass proved to be an extension of the growth around the posterior surface of the superior maxilla. In one case, thought to be a fibrosarcoma with elastic fibres, the tumour grew from the vicinity of the Eustachian tube. The course of the case did not point to its being a sarcoma.

Dr. EWING W. DAY (Pittsburg) said that he had, unfortunately, met with a number of such cases. One of them was a very extensive fibroma. The patient would not consent to removal of the superior maxilla, so he had made the incision as for that operation, except not going under the eye. He had then cut into the maxillary antrum, and cut away the inner wall of the antrum, leaving the nostril attached to the outer border of the bone. When the antrum and the nasal cavity were thus thrown into one cavity, he was able to reach the root of the growth, and remove it without producing much hæmorrhage. He had been surprised at the wide field of operation thus obtained. This operation had been done three years ago, and there had been no recurrence. If he had to do the operation again, he would leave only a ridge to anchor the nose to, and so prevent the ballooning that now takes place in this patient when blowing the nose.

Dr. J. A. STUCKY said he believed that if this infiltration of the nose were left untreated it would require an external operation. From his own experience he felt that it was not possible to make a snare that would remove the tumour from Makuen's patient. Mention was made of an exceedingly trying case of the kind that had fallen to his own lot.

Dr. J. O. McREYNOLDS (Dallas, Texas) advised using a cold wire snare, and holding it in position while an assistant tightened the snare as much as possible. Having made a pedicle in this way, the galvano-cautery loop should be thrown around the growth. This method would allow some of those growths to be removed that

would ordinarily break snare after snare. A case was cited in which the superficial layers of the growth indicated only fibroma, but examination of the deeper ones showed sarcomatous elements.

Dr. M. D. LEDERMAN (New York) said that he had some experience with Dr. Dawbarn's method of operating in order to starve out these growths in the rhino-pharynx, and he would suggest that Dr. Makuen consider this method in connection with his case. A case was referred to in which the patient had been seen five years after the Dawbarn operation, and there had been at that time no return of the growth.

Dr. EDWARD B. DENCH remarked that Dawbarn's method embraced ligation of the external carotids and their branches, with complete excision of the ligated vessels.

Dr. G. H. MAKUEN said that it had been impossible to get the cold wire snare around the tumour, because it extended so far down on the posterior pharyngeal wall. The patient and his family would probably not consent to any other radical operation.

Second Day—Tuesday, June 3.

Dr. JOSEPH T. GIBB (Philadelphia) reported a *Case in which Laryngeal Symptoms complicated Purpura Hæmorrhagica.*

The patient, a man of forty-two, had been well up to three weeks before admission to hospital on November 3, 1901. At that time he had been vaccinated, and ten days later the legs became swollen and a hæmorrhagic rash appeared upon them. About this time there was a bloody discharge from the bowel. There were subsequent crops of hæmorrhagic spots, and eventually the urine became bloody. On December 19 the speaker had first seen him because of an attack of dyspncea and crowing respiration that had existed for thirty-six hours. The entire larynx was red, the breath sounds were weak, and there was marked laryngeal stenosis. On the following day, after vomiting much chocolate-coloured mucus, the breath became nearly normal, and the larynx then showed less infiltration and the surface of the mucous membrane was covered with fluid blood. An application of cocaine and adrenalin gave marked but temporary relief, the hæmorrhage recurring, the patient dying the next day of exhaustion. Evidently the dyspncea was due to hæmorrhagic œdema of the submucosa of the larynx, similar to the subcutaneous purpuric spots in simple cases. The relation of the illness to the vaccination was interesting, but by no means clear. The possible relation between the adrenalin and the last hæmorrhage was also worthy of consideration.

Dr. JOHN O. McREYNOLDS (Dallas, Texas) reported a *Case of Severe Hæmorrhage occurring after the use of Adrenalin.*

The case was that of a man of twenty-five, from whom he removed without difficulty an exostosis situated rather high in the nose. The hæmorrhage occurred almost immediately after the patient left the office, but he did not see the man for about two hours, and then he was almost exsanguinated. The hæmorrhage was controlled by packing the posterior nares.

Dr. W. FREUDENTHAL (New York) exhibited a device which he used for controlling hæmorrhage during and after operation. It consists of a double ice-bag which is applied like a saddle over the nose, and is strapped around the head. In addition, he obtained valuable assistance from the use of stypticin internally.

Dr. J. A. THOMPSON thought the hæmorrhage was due to injury of one of the small arteries of the septum. Hæmorrhage could be much more easily controlled by the use of cotton saturated with a styptic than by the use of gauze.

Dr. J. A. STUCKY said that adrenalin should be used in the strength of one to six or eight thousand. He was accustomed to control nasal hæmorrhage by the use of a little strip of dental rubber, over which is placed a piece of Bernays' sponge or splint.

Dr. H. BERT ELLIS (Los Angeles, Cal.) said that, according to his experience, hæmorrhage was much less likely to occur after adrenalin alone than after the combination of adrenalin and cocaine. Patients put on the chloride of calcium prior to operation were rarely troubled with secondary hæmorrhage.

Dr. M. A. GOLDSTEIN said that it was his custom to saturate the gauze with oil or melted vaseline in order to make it impervious, and hence suitable for controlling hæmorrhage. He believed the Simpson modification of the compressed cotton splint, shaped in the form of a nasal plug, was a very satisfactory means of controlling nasal hæmorrhage.

Dr. WM. L. BALLENGER (Chicago) read a paper entitled *A Physiological Statement of some of the Symptoms of Mouth-breathing.*

He said that examinations of guinea-pigs which had been kept in an atmosphere saturated with starch-powder and nitrate of silver showed a remarkable thickening of the lining of the air-vesicles, and this had led him to suspect that possibly a pathological change in the air-vesicles might in some way cause an auto-intoxication which would find expression clinically in mouth-breathers. In this class of cases the respiratory function of the

nose was lost, and he did not doubt that this loss resulted in certain changes in the respiratory apparatus of the lung, which impaired its capacity to carry on the interchange of gases. Faulty metabolism necessarily resulted, and carbon dioxide accumulated in excess in the blood, and then acted as a violent poison to the leucocytes. The scavenging function of these cells was thus impaired, and the "half-way" products of oxidation were left to circulate through the system. Oxygen being taken up in deficient quantity still further added to the toxic properties in the blood, and gave rise to the nervous and developmental phenomena so familiar in mouth-breathing in children.

It therefore seemed rational to him to assume that the complex symptom of mouth-breathers was largely due to some change in the air-vesicle walls of the lungs, whereby the normal interchange of gases was interfered with.

Dr. EUGENE VANSANT (Philadelphia) thought the cases in which the respiratory function was abolished were very rare. In a case of severe adenoids in a child asleep there would still be found nasal respiration. If these persons were true mouth-breathers there would not be much difficulty. It was because they remained nose-breathers that nervous disturbances arose. There was not the slightest doubt that there was immense thickening of the epithelial lining of the pharynx and larynx, but he was disposed to doubt that such thickening extended to the air-cells except in severe cases of long standing.

Dr. J. A. THOMPSON said that the interchange of gases was practically an osmosis, and it was well known that this would not take place through a dry membrane. Where nasal respiration was abnormal the pulmonary alveoli became unnaturally dry, and this was probably one of the features in the deficient osmosis and oxidation of the blood.

Dr. W. FREUDENTHAL (New York) said that some years ago he had made a number of experiments on this subject, and had found that children with pronounced adenoids gave off about one-ninth or one-eighth of the normal quantity of moisture. Four months after the removal of the adenoids one boy gave off about the normal amount of moisture from the nose. If the nose failed to supply the moisture to the air this would be supplied for a time by the pharynx, but the latter would soon fail also.

Dr. BALLENGER, in replying, said that it was not necessary to have complete nasal obstruction in order to produce the pathological conditions discussed in his paper. The point made by Dr. Thompson seemed to him very well taken.

Dr. W. FREUDENTHAL (New York) read a paper on *Electric Light in Diseases of the Respiratory Organs*.

At first he had hoped to affect the deeper tissues by the actual passage of bactericidal rays into them, but it was found that these just penetrate the epidermis and cutis. In studying the therapeutic effects of the electric light, one must distinguish between the incandescent and the arc light. The author said that he had been experimenting on this line as early as 1889. He had found the arc light preferable even for the larynx. He made use of the ordinary search-light, in front of which the patient sits at a distance of 6 or 8 feet. Most of the screens suggested for removing the heat were objectionable because they absorbed in large amount certain other important rays. He used the electric light in the treatment of both laryngeal and pulmonary tuberculosis, and although he had never cured an advanced case by this means, the treatment was of value, just as was the use of morphine, heroin, or hydrotherapy; indeed, the electric-light treatment stood on the same level as hydrotherapy, but was superior to the latter because it relieved pain and facilitated expectoration.

Because of the neurotic element in cases of hay asthma, the results of the electric-light treatment has been even more conspicuous.

Dr. H. HOLBROOK CURTIS asked the effect of direct sunlight on laryngeal phthisis.

Dr. ROBERT LEVY said that he had never been able to satisfy himself from the published reports that the application of sunlight or artificial light was an important adjunct to the treatment. Equally good results, he thought, could be obtained in high altitudes where sunlight was most abundant.

Dr. FREUDENTHAL said that he had applied sunlight, and was accustomed to advise his patients to expose themselves to sunlight, preferably while undressed.

Dr. FRANK E. MILLER (New York) read a paper on *Corditis Cantorum, or Nodes, with special reference to Etiology and Treatment*, and illustrated it by lantern-slides and by the presentation of several patients, together with a demonstration of the exercises employed in carrying out the treatment.

Dr. JAMES F. McCaw (Watertown, N.Y.) read a paper reporting a *Case of Primary Epithelioma of the Uvula and Soft Palate, Treated with the Roentgen Rays*.

A screen of block tin with a cylinder of the same material served to direct the X rays upon the desired part. The diseased

surface had healed very satisfactorily under the treatment, the chief feature of the healing process being the comparative freedom from cicatricial tissue and slight degree of contraction.

Dr. C. G. COAKLEY said that he had used the X rays in a case of epithelioma of the superior maxilla, supposed to be of about three weeks' duration. The man refused surgical operation, and was treated by the X rays for a week by Dr. William James Morton, with some improvement. The patient then went away for a short time on business, and on his return the disease was found to have advanced very considerably.

Dr. OTTO J. STEIN (Chicago) referred to a case of leukoplakia of the soft palate and mouth that he had treated for about three months by the usual method without benefit. Last December the X-ray treatment of the case had been begun by Dr. Pusey, and after two months he had reported the case as a failure. After another period of two months the result was still negative. In Dr. McCaw's case it seemed difficult to determine how much of the good result was due to the surgical measures and how much to the X rays.

Dr. McCaw said he believed most of the good results that would be obtained from the X rays in this class of cases would be after incision of the growth. The result would also vary somewhat, depending upon whether a "hard" or a "soft" X-ray tube were used.

Dr. C. DUNBAR ROY (Atlanta, Ga.) reported a *Case of Laryngeal Papilloma in a Child, with Remarks.*

He had used the method of spraying the larynx with alcohol as recommended by Dr. Delavan, and with good results in some instances. Various methods of treatment were discussed by the author. He advised that the children should be kept under observation, and the milder methods given a fair trial before resorting to surgical intervention. In adults, especially if there were interference with the breathing, the endolaryngeal method might be tried. In children prolonged tracheotomy might be required. Laryngotomy should be done only when all other methods had failed.

Dr. WENDELL C. PHILLIPS (New York) insisted upon the great care necessary in making the diagnosis of what seemed to be benign neoplasms of the larynx, because many of these proved to be malignant. In one such case occurring in his own practice the growth proved to be an epithelioma in a very advanced stage.

Almost anyone observing this growth would have declared it to be a papilloma, yet microscopical examination showed its true nature.

Dr. THOMAS J. HARRIS said he wished to emphasize the value in prolonged papillomatous formations of opening the trachea. A case was recalled in which the growths had been removed repeatedly by Dr. Nichols endolaryngeally, and in which alcohol had also been used unsuccessfully. Prolonged tracheotomy was then resorted to in order to give the part a prolonged rest. This succeeded admirably.

Dr. C. G. COAKLEY spoke of the similarity in structure of so-called papillomata and syphilitic growths. He was in favour of removing the papillomata in both children and adults as soon as possible. Where the base was broad they were, of course, difficult of removal. It was his habit afterward to make use of alcohol in order to postpone recurrence. Where the attachment was small one removal would often suffice.

Dr. W. B. SHIELDS (St. Louis) referred to the case of a physician of seventy years upon whom he had operated twice, supposing the growth to be a papilloma from its gross appearance. Microscopical examination showed it to be a sarcoma.

Dr. Roy, in closing, said that he was opposed to the method of Coakley and Phillips of removing a portion of the growth for examination, because this afforded an excellent opportunity for auto-intoxication and for the change of a benign into a malignant neoplasm. He was not in favour of removing a growth in the larynx as soon as found. It was better, in his opinion, to watch it carefully, and test the effect of various medicinal applications.

Dr. D. J. GIBB WISHART (Toronto, Ont.) read a paper on *Abductor Paralysis of the Larynx*.

He reported a case of primary abductor paralysis occurring in a person apparently suffering from tabes dorsalis, and giving a history of syphilis. The crico-arytenoid articulation in this case did not seem to be responsible for the position of the cords. The patient was tracheotomized, and the tube had been worn for several years with great benefit.

Resection of the recurrent laryngeal nerve was justifiable if the disease were steadily progressive. Both iodide and arsenic had been given internally. Dr. Wishart said that he had seen a second case last winter with a history of œsophageal stricture in the practice of Dr. H. D. Bruce. The patient refused operation, and remained under observation only a few days.

Dr. W. H. HASKIN (New York) reported a *Case of Epithelioma of the Tympanic Cavity involving the Mastoid.*

The patient was a woman of forty-two, first seen in April, 1901. She complained of intense pain in the left ear, radiating over the head and down the neck. There was also an offensive otorrhœa, and a history of a discharge from the ear at intervals for thirty years. A polypus was removed with a snare. Subsequently there had appeared what was thought to be a malignant growth. A complete mastoid operation was done, and pus found in the tip of the mastoid and disease in the squamous portion. Examination of the tumour indicated that it was not malignant. On June 24 the patient was readmitted with a swelling below the ear. The sinuses were opened up, and the granulations removed were then reported to be epitheliomatous. When seen on April 15, 1902, there were large secondary growths around the ear.

Third Day—Wednesday, June 4.

Dr. EDWARD B. DENCH (New York) exhibited two drawings showing the anatomical relations in a subject recently dissected of the right and left internal jugular veins. Upon the right side the internal jugular was of small size and gave off but one branch, the common lingual and facial trunk, throughout its entire extent. Almost the entire return circulation from the head and face was carried on through the left side. The external jugular and anterior jugular were very large, as were also the lingual and facial veins. The thyroid and laryngeal branches were in like manner exceedingly well developed. Almost all of the return current from the head and face passed through the superficial and deep vessels of the left side. The drawings were of interest from the fact that the otologist is frequently called upon to excise the internal jugular vein for thrombosis of the lateral sinus. With a distribution of the vessels such as was shown in the plates exhibited, ligation upon the left side would have been attended with considerable difficulty, and would have only been efficacious had all of the collateral branches of the vein been secured. The plate was presented in order to bring to the attention of the Society the very marked anomalies which might exist in the venous circulation in this region.

Dr. THOMAS H. FARRELL (Utica) presented a *Specimen of a Tubercular Larynx.*

The larynx was obtained post-mortem from a case that he had observed at intervals for five years. The ulceration was found to

encircle the larynx, with the exception of a small strip on the anterior surface of the body of the cricoid. The specimen was interesting, because in spite of the long period of infection the posterior commissure was not involved, and the appearance bore considerable resemblance to syphilis.

Dr. WENDELL C. PHILLIPS (New York) exhibited an *Outfit for Mastoid Cases*.

He said that about two months ago, at the suggestion of Dr. J. F. McKernon, of New York, an outfit had been prepared by Van Horn and Co., of New York, for use in mastoid cases. This, as modified by himself, was exhibited to the Society. One complete outfit was kept in stock, and could be procured on telephone order or on prescription. The outfit consisted of all necessary appliances, dressings, and medicines necessary for any mastoid operation.

Dr. PHILLIPS read a paper on *Pus Examination in Middle-Ear Suppuration*.

He said that modern practice favoured the routine bacteriological examination of all cases of suppuration of the middle ear, this examination to be made immediately after paracentesis, so as to eliminate organisms subsequently introduced from without. The micro-organisms found their way into the middle ear through the inflamed Eustachian tube. Some of the most virulent of these organisms were frequently found in the Eustachian tube, and even as far as the antrum, without any attendant morbid process. It had been demonstrated that they might even be found in the circulation without giving rise to pyæmia or septicæmia. From these facts it was evident that other factors, such as alterations in the resisting power of the patient and in the nature of the pabulum on which they live, must be necessary to excite a morbid process. Several varieties were apt to be found in the same specimen, and hence it was the rule for the bacteriologist to state which organism predominated. Some of the organisms found in the pus from middle-ear disease are: the *Micrococcus lanceolatus*, the pneumobacillus of Friedlander, the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus, albus, and citreus*, the Klebs-Loeffler bacillus, the tubercle bacillus, the *gonococcus*, the bacillus of influenza, and the *Diplococcus intracellularis meningitidis*. In the examinations he had had made he had been surprised at the frequency with which the last-named bacillus had been present. In one of his cases the smegma bacillus had been mistaken by the first examiner

for the tubercle bacillus. Many clinicians had reported that in the cases in which the pneumococcus was present complications were very apt to arise, and, while this was true, his experience indicated that the staphylococcus, either alone or in combination, was the most virulent.

Dr. W. H. HASKIN (New York) said that in a case which he had had under observance he had found time and again the smegma bacillus, and had been impressed with its close resemblance to the bacillus of tuberculosis. However, it was rarely, if ever, found singly; the tubercle bacillus was very rarely found in middle-ear disease, and he believed in many of the reported cases this error had been made of confounding the smegma bacillus and the bacillus of tuberculosis.

Dr. E. B. DENCH said that an early bacteriological examination in an acute case proved very helpful in making a prognosis, particularly as regards mastoid complications and infection of the lateral sinus. They had found at the New York Eye and Ear Infirmary that in cases of streptococcus infection there was very apt to be mastoid involvement. In these cases it was now their practice to make no effort to abort the mastoid inflammation, except by incision of the drum. If the case did not promptly show signs of improvement the mastoid was at once opened.

Mention was made of a case in which the symptoms had developed within a few hours, and the examination showed a streptococcus inflammation. Only one ear was affected at first, and the other drum membrane appeared perfectly normal, yet within two hours the membrane of the second ear became inflamed, and streptococci were found on this side also.

Dr. M. D. LEDERMAN (New York) said that he had had examinations made in several cases of chronic suppuration, and the bacillus of meningitis had been found. The pathologist did not attach any special significance. Where there were symptoms pointing to inflammation of the bony structure in these cases it was well to operate early.

Dr. JOHN M. INGERSOLL asked what was the effect of the colon bacillus in these cases.

Dr. C. R. HOLMES (Cincinnati) said that the importance of such examinations could not be denied, yet unless such examinations were made by experts the results would be misleading. They should be made a matter of routine.

Dr. PHILLIPS, in closing the discussion, said that if doubtful about the advisability of doing a mastoid operation, the finding of numerous streptococci should decide in favour of immediate

operation. He had had almost no personal experience with colon bacillus infection in these cases.

Dr. C. R. HOLMES (Cincinnati) presented a lady to show the deformity left after a very extensive double mastoid operation done five years ago.

Dr. EWING W. DAY (Pittsburg) read a paper on *Two Cases of Mastoiditis, one resulting in Thrombosis of the Cavernous Sinus, the other Complicated with Tumour of the Cerebellum simulating Abscess.*

The first case was that of a child of eleven years, admitted to the hospital on January 12, 1901, in a septic condition. It was at once operated upon, but by the following day the temperature had risen to 104° F. A pocket of pus was found and evacuated. On the morning of the twelfth day the right eyelid was swollen and discoloured, but the ophthalmoscopic examination was negative. A diagnosis of infective thrombosis of the cavernous sinus was made. An exploratory incision into the orbital cavity failed to evacuate any pus. On the twenty-second day ulceration and sloughing of the cornea began as a result of pressure, and the temperature varied from 100° F. to 103° F., and the pulse was rapid and weak. On the twenty-fifth day the lids of the other eye became similarly affected. One eyeball collapsed as a result of the sloughing, but in the other eye this was prevented. The patient slowly recovered. It was evident that the thrombus could not have been an infected one. The child had passed through measles and typhoid fever within a few months of the onset of the mastoiditis. The second case was that of a child of seven years, admitted to hospital in April, 1901. It had suffered from a chronic otorrhœa, and more or less headache. There was no swelling over the mastoid, but tenderness on deep pressure. There was convergent strabismus and optic neuritis in the right eye, and the gait was slightly staggering. The mastoid was opened and found normal, and the skull was then opened over the left cerebellar lobe, expecting to find an abscess, but none was found. The patient did well, but soon became stupid, and a hernia of the cerebellum occurred. The post-mortem showed softening of the frontal lobes and a tumour, the size of a hen's egg, in the right lateral lobe of the cerebellum. The lower lobe was softened. The aqueduct of Sylvius and the ventricles were greatly dilated. The microscopical examination had not been completed.

Dr. T. PASSMORE BERENS (New York) read a report of an *Exploratory Operation for the Relief of a possible Cerebellar Tumour or Abscess. Recovery from Operation. Death three Months Later.*

The patient was a child of fourteen, who responded slowly, though correctly, to questions. Paralysis of sixth, seventh, and eighth nerves; vertigo, vomiting, and progressive paresis of extremities were present. Operation gave temporary relief, and death occurred eventually from hæmorrhage into the brain. The autopsy showed a large mass involving the pons and upper half of the medulla, which was found to be a glioma.

Dr. W. C. PHILLIPS said that he had followed the case reported by Dr. Berens, and remembered that at the time of the operation not one of the otological staff of the hospital were convinced that it was an operable case. The operation was done at the request of the neurologists, and in the manner indicated by them.

Dr. BERENS said that the subsequent history showed the operation to have been justifiable, because the boy was entirely relieved of his pain, and greatly relieved of vomiting, probably by the drainage of the cerebro-spinal fluid, and his life was prolonged, probably at least two months, by the operation.

Dr. HENRY J. HARTZ (Detroit) read a paper on *The Pathology and Diagnosis of Otitis Media Insidiosa—i.e., Sclerosis.*

He said that the hyperplasia began within the bone, and involved especially the articulation of the stapes and the oval window. This process constitutes not only a hyperplasia, but also a hyperostosis and metaplasia, and might localize itself in any of the structures of the labyrinth, and in the chain of ossicles. When confined to the labyrinth the integrity of the acoustic nerve might be affected in a purely mechanical way, and induce Ménière's complex of symptoms. In this sclerotic process the cartilage disappeared, becoming converted into osseous tissue, and when the tip of the cochlea was involved the patency of the Eustachian tube was threatened. In most cases the membrane of the middle ear had been found thickened, as a result of hyperæmia, but there were few signs that the disease was the result of middle-ear suppuration. Rheumatism, gout, syphilis, scrofula, and diseases of the nasopharynx, such as adenoids and enlarged turbinates, were looked upon as predisposing causes. The duration of the process had been known to vary from three to thirty years. The diagnosis was made by the exclusion of all other forms of progressive deafness, and by the functional test. Statistics showed that about 10 per cent. of all middle-ear diseases were examples of true sclerosis, or

the result of spongiöse formations. There was usually a high degree of deafness in both ears, and the process began usually between the age of twenty and thirty years. Women were more often affected, and 17 per cent. arose during the puerperium. The deafness of old age must be excluded. Most important of all was the exclusion of catarrhal and suppurative diseases of the middle ear and tube. By the determination of the lower tone limit one could say whether the sclerosis was in the sound-conducting apparatus. Dr. Hartz demonstrated Professor Bezold's continuous-tone tuning-forks. Microscopical sections of the labyrinth and middle ear showing spongiöse formation in the cochlea and ossicles were exhibited. Some of the specimens were made by Liebemann, Katz, and Bezold.

Dr. WILLIAM L. BALLENGER (Chicago) said that this paper was the clearest exposition of the subject that he had heard. The cases had been divided into two broad classes, one involving the oval window, and the other in which the disease was chiefly confined to the labyrinth. To this might be added a third class, made up of a mixture of these two. A positive diagnosis was usually made only by microscopical and post-mortem study. The disease was not always slowly progressive, but sometimes proceeded by leaps and bounds. This was probably to be explained by the involvement of the region of the greatest functional activity—*i. e.*, the region of the oval window. If the more remote parts of the bone were involved, then the deafness would be more insidious. He believed, with Dr. Hartz, that the functional tests of the ear were as important to the otologist as the ophthalmoscope to the ophthalmologist, and he was therefore pleased that this set of instruments had been exhibited.

Dr. C. R. HOLMES said that the subject was comparatively new and not very easy to master, although certainly a very important one, as stated by the last speaker. The tests were time-consuming, but it would well repay the patient to liberally remunerate the specialist who would carefully make the differential diagnosis, and so save months of inappropriate and ineffective treatment.

Dr. THOMAS J. HARRIS (New York) read a paper entitled *Prognosis in Chronic Catarrh of the Throat and Ear: Some Remarks by a Would-not-be Pessimist.*

He said that most cases of catarrh were dependent upon an underlying cause—*e. g.*, the lymphatic diathesis, a chronic derangement of the gastro-intestinal canal, the uric acid diathesis, etc. The common error was to look too intently at the local picture.

He believed our progress in the treatment of chronic catarrh of the ear had been very slight as compared with advances in diagnosis. Tubal therapeutics and pneumo-massage were at best too often of temporary benefit, and sometimes of decided harm. A promise to check the deafness was often all that could be given with safety. Prophylactic measures were of the greatest value, especially the early removal of the ever-present adenoids.

Dr. WENDELL C. PHILLIPS said that he believed the author of this paper had made these pessimistic statements only to arouse opposition and excite discussion. We were all conscious of failures in certain cases. He did not think it was possible, for example, to convince any member of this Society that it was desirable to abandon the use of the Eustachian catheter, even though aurists of high reputation, having lost interest in their work, had stated their belief that this instrument was almost useless. He was very glad to have the opportunity to champion the use of the catheter when intelligently applied.

Dr. C. R. HOLMES said he believed in the use of the aural catheter. It was well not to promise too much in these cases. All that he would say to his patients was that he hoped to be able to secure to them as good hearing as they possessed when in their best physical condition. He was decidedly opposed to the removal of nasal spurs, unless they were distinctly responsible for some pathological condition. In some cases a turbinectomy would make the subsequent use of the aural catheter unnecessary. Much depended upon habits of life.

Dr. T. PASSMORE BERENS said that the practice of removing turbinates wholesale was no longer popular, and more dependence was placed upon hygienic treatment.

Dr. J. A. STUCKY said that at the present time he used the catheter once when formerly he used it perhaps fifty times, and he did not interfere with spurs unless they were actually doing harm. He did, however, remove pathological conditions of the turbinate.

Dr. MAX GOLDSTEIN said that if the author of the paper had confined his criticisms to the sclerotic form most of those present would probably agree with him. One should sharply distinguish between the sclerotic and the hypertrophic form.

Dr. W. L. BALLENGER said that he understood that all the author of the paper desired was that each case should be thoroughly studied and fashions in treatment avoided. We should not set our faces against the removal of nasal spurs, because at times these operations did much good.

Dr. G. L. RICHARDS mentioned a case in which after the removal

of an obstructing nasal spur the hearing improved very much without direct treatment of the ears.

Dr. WALTER A. WELLS (Washington, D.C.) reported a *Case of Thyroid Gland Tumour in the Larynx*.

He said that this condition was very seldom met with, there having been only nine or ten cases recorded in which normal thyroid gland tissue had been found in the larynx. His own case was peculiar, in that the main thyroid showed microscopically only colloid degeneration, whereas the intralaryngeal tumour had the microscopical characteristics of an adeno-carcinoma. In this case he had made use of the styptic action of gelatine with good result. The patient was a woman of fifty, who had had a goitre for many years before coming under observation. She sought relief because of a sensation of choking and paroxysms of dyspnoea. Although the history indicated a strong hæmorrhagic tendency after operative interference, the tumour was removed at several sittings, gelatine being freely used locally and successfully to control the hæmorrhage. Out of nine reported cases of thyroid in the larynx, six occurred in women, and four had been reported from one clinic, making it probable that this condition was not so rare as the statistics seemed to indicate.

Dr. M. A. GOLDSTEIN asked how the gelatine had been used in this case.

Dr. WELLS replied that a 10 per cent. sterilized solution of gelatine, to which had been added 1 per cent. of calcium chloride and $\frac{1}{2}$ per cent. of sodium chloride, was employed. It was applied on a cotton swab before and throughout the operation.

Dr. THOMAS H. HALSTEAD (Syracuse) read a paper on *Foreign Bodies in the Larynx and Lower Respiratory Tract in Children, with Report of Six Cases*.

The report included six tracheotomies in children under two and a half years old for the removal of foreign bodies lodged in the larynx and bronchus. Of the six cases, five recovered and one died. At the time of operation dyspnoea was urgent in all. In the cases reported the first spasm partially subsided after a few moments, and often misled both parents and physician to believe that the foreign body had been ejected. The dyspnoea recurred after a short interval, and became constant, with at times exacerbations. Cyanosis and epigastric recession were present in all cases, and because of the nature of the foreign bodies in his cases in only one would the X rays have been of service. In his first case a piece of

a shell of a pecan-nut was firmly lodged in the ventricle of the larynx. In the second case it was a coffee-bean, which remained in the right bronchus for one week. In the third case a peanut was extracted with much difficulty from the right bronchus, where it was wedged at a distance of 4 inches from the tracheal opening. The fourth case was somewhat similar to the third one, excepting that the foreign body was coughed up to the tracheal opening after the trachea had been opened and tickled with a cotton-covered probe to excite cough. The fifth case terminated fatally, death being due to pneumonia; the foreign body was not found, and although no autopsy could be obtained, there was every reason to believe that the case was one in which a gold ring had lodged in the bronchus. No X-ray apparatus was at hand at the time. The last case reported was that of a twelve-months old baby, in whom three fragments of egg-shell had lodged in the larynx, remaining there for two weeks, causing great dyspnoea. The consent to perform tracheotomy could not be obtained for two or three days after the diagnosis was made, and then the child was in bad condition, but nevertheless the operation was successful and the child recovered. The unreliability of statistics regarding operative and let-alone treatment was well shown by the fact that the author knew of a case in which a child died of pneumonia, and the discovery of a shoe-button in one of the bronchi was the first knowledge that the parents or physician had that a foreign body had passed into the air-passages. It was unsafe, the author thought, to postpone opening the trachea, particularly in children, after the ordinary methods failed to remove the foreign body.

Dr. C. HUDSON MAKUEN said that Dr. J. A. Killian had reported the removal of a fish-bone 22 millimetres long from the left bronchus of a child three and a half years old, under control of the eye, by means of bronchoscopy, without injury to the tissues; and that Dr. A. Coolidge junior, of Boston, had spoken of the ease with which foreign bodies may be removed from the trachea and bronchi through a straight tube placed in a previously-made tracheal opening, artificial light being reflected into the tube from a head mirror, and had reported three cases in which he had employed this method with entire success.