THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

The President, Dr. George A. Leland, *in the Chair.*

Report by Dr. Emil Mayer.

Monday, May 5, 1913.

Migraine and Sphenoidal Sinus Disease.—Greenfield Sluder.—In a previous communication (last May), in which the question was raised as to the ætiology and treatment of migraine, Sluder made the statement that many of the recurrent headaches which bear the name of migraine are sphenoidal empyemata which have lost most, if not all, local signs, or which were started as such empyemata, and that the nerve-trunks had become involved either by extension of the inflammation (or its toxin) through the thin wall separating the sphenoidal sinus from the adjacent nerve-trunks. Sluder observed that the third, fourth, and three divisions of the fifth, sixth and Vidian frequently lie in close association to the sphenoidal sinus—a deduction drawn from specimens which he studied by cross-sections. His findings, with the exception of the Vidian nerve, were corroborated by Ladislaus Onodi (*Archiv für Laryngologie*, Bd. vi, Heft 2, July 10, 1912). This author's method was to follow the nerve-trunks in certain specimens, sometimes to remove the wall of the sphenoidal sinus, and then to study the relations of the nerve-trunks thereby exposed. He found that they were in these close associations for varying distances, sometimes even as much as 20 mm. He did not consider the cavernous sinus in these relationships. He pictures specimens where the sphenoidal sinus extended so close to the clivus of Blumenbach as to make transparency of the separating bone, and shows how this brings the sixth into these associations. From an inspection of specimens showing the nose and accessory sinuses from the eighth week of fœtal life to the twenty-fifth year, Sluder observed that the sphenoidal sinus spreads laterally at an early age, reaching to close proximity to the second division of the fifth as early as two and one half years, and that this condition runs almost constant throughout the series. Its development (Davis) begins in the antero-lateral aspect of the body, and slowly extends backwards, spreading, however, rapidly laterally to approach the foramen rotundum, and then proceeding backward. As early as the sixth year the Vidian canal may be approached. Sluder considers that if he is right in the conclusion that the mode of production of these headaches is the close association of the sphenoidal sinus to the nerve-trunks, and that the inflammatory processes are transmitted through the thin bone separating the cavity of the sphenoid from the associated nerve-trunks, then it is necessary that such anatomical associations be formed in early life as an explanation of such headaches beginning in early life. Another year of clinical observation strengthens Sluder's belief that the pathological process underlying these cases is a hyperplastic sphenoiditis. From an observation of 100 cases he concludes that the second division of the fifth and Vidian are the nerves most frequently involved (95 per cent.). They may be involved singly, or together, then making the picture which would otherwise emanate from the spheno-palatine ganglion. It is difficult to differentiate this class of

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cases from spheno-palatine ganglion neuralgia; hence one should be carefully on guard. The drugs which have so far proved of greatest benefit are: One per cent. carbolic acid in oil; 2 to 10 per cent. oil of wintergreen and aqueous solutions of sodium salicylate, 2 to 5 per cent. These have been successful in allaying the pain long after the sinus was satisfactorily opened and the wound healed.

Ulceration of the Larynx, with Exfoliation of Cartilage from Typhoid Fever.—J. H. Bryan.—The frequency of this complication in typhoid fever in Europe, according to Landgraf, is 11 per cent. of all fatal cases; according to Griesinger, 26 per cent; Kanthack, 26 per cent.; Ouskow 40 per cent. It is difficult to arrive at any conclusion as to the frequency of this complication of typhoid fever. The figures given by Jackson seem to show that a much larger number of cases of laryngeal involvement occur in America than is indicated by the figures given by Thomson. The epidemic in which Jackson made his observations was, however, an unusually severe one, and the subjects were largely of a poorly nourished type, and this may account for the apparently greater frequency of this complication in this country. We cannot get at the truth in this matter until more careful observations are made, not only in the hospitals, but in private practice as well.

Thyrotomy for Cancer of the Larynx.—D. Crosby Greene.—In a paper presented to this Association in 1906, the results of an investigation of the lymphatic drainage of the larynx by means of submucous injections of methylene-blue and mercury were reported. The results obtained are confirmatory of those reported by others in showing that the network of lymphatic vessels which extends beneath the mucous membrane throughout the interior of the larynx is richer in the number and size of the vessels in the supraglottic region, relatively poorer in the subglottic portion, while on the vocal cords the vessels are very small and widely separated. These anatomical facts account for the slow growth and late development of the disease in the cervical lymphatic glands in cases of epithelioma of the cords. Certain details of the technique of thyrotomy have an important hearing on the immediate and after-results of the operation. The steps of the operation are: (1) Ether by inhalation preceded an hour before by $\frac{1}{4}$ gr. of morphine and $\frac{1}{150}$ gr. of atropin. (2) With the head slightly extended a median incision is made extending from the lower border of the hyoid bone to the lower border of the cricoid cartilage. This incision is carried down until the thyroid and cricoid cartilages and cricothyroid membrane have been definitely exposed. (3) A 1 per cent. solution of cocaine is injected through the cricothyroid membrane into the cavity of the larynx. (4) The patient is now placed in the Trendelenberg position and a thick pad placed under the shoulders to bring the larynx into prominence. (5) The cricothyroid membrane is next incised in the median line, and through this incision a swab of 10 per cent. solution of cocaine is introduced and applied to the laryngeal mucous membrane. (6) The thyroid cartilage, after a pause of five minutes, is divided from below upwards. In young subjects this may be done with a knife, but in the majority of cases where the cartilage has become ossified, it is best to use strong curved scissors with dull points. (7) The thyroid wings are now widely retracted and an examination of the growth made under good illumination. (8) Beginning at the free margin of the thyroid cartilage, on the affected side in front of the growth, the internal perichondrium is elevated from off the cartilage with

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a sharp elevator from before backwards to a line well behind the limits of the growth as well as above and below it. All the soft structures are thus freed from the underlying cartilage. (9) Parallel horizontal incisions are now made with scissors above and below the growth. These incisions are carried about half an inch behind the posterior limit of the growth. (10) The growth with its surrounding tissue is now entirely removed with a wire snare by which the posterior attachments are severed. When the growth is so extensive, even though confined within the cavity of the larynx that the larynx cannot be opened without cutting into the growth, recurrence is not only possible but probable.

Decannulation and Extubation after Tracheotomy and Intubation respectively.—Chevalier Jackson.—The different forms of laryngeal stenosis associated with difficult decannulation or extubation may be classified into the following types: (1) Pain: Breathing through the neck with a properly placed tracheotomy cannula is so much easier than breathing through the mouth, that once the patient becomes accustomed to it for quite a while he does not feel that he is getting enough air through the mouth, even though the larynx is perfectly patulous. In addition to this there is a nervous habit arising from previous experience with the stenosis that terrorises the patient the moment he feels the slightest dyspnœa. (2) Spasmodic: This form of stenosis may be associated with panic, or may be excited by subglottic inflammation. It is usually overcome by the same means as those suggested for panic, together with the treatment of inflammatory conditions that may be present. Doubtless one of the chief causes of adductor spasm is the prolonged wearing of the intubation tube. (3) Paralysis: Bilateral ankylosis of the crico-arytænoid joints may prevent decannulation until the laryngeal stenosis is relieved. This operation is not to be advised except in such cases as have remained rigid for a period of twelve months or more, and this is not meant to include the fixation that is associated with malignant, tuberculous, or luetic infiltrations. (4) Neoplasms: Decannulation in neoplastic cases will depend upon the nature of the growth and its curability. (5) Hyperplastic. (6) Cicatricial: (*a*) Loss of cartilage; (*b*) loss of muscular tissue; (*c*) fibrous. The hyperplastic and cicatrical types of organic stenosis preventing decannulation may be classified as follows: (1) Tuberculosis. (2) Lues. (3) Scleroma. (4) Acute infectious diseases: (*a*) diphtheria; (*b*) typhoid fever; (*c*) scarlatina; (*d*) measles; (*e*) whooping-cough. (5) Decubitus: (*a*) Cannular; (*b*) tubal. (6) Trauma: (*a*) tracheotomic; (*b*) intubational; (*c*) operative; (*d*) suicidal. Conditions outside of the paralytic and neoplastic forms are almost all the result of inflammation, often with ulceration and the secondary tissue changes. In the infective granulomata it is practically always the mixed infections from oral sepsis that do the harm. The chief exception to this is diphtheria, which is in many cases a distinctly necrotic process. In the rare cases in which laryngeal tuberculosis of such a severe type as to require tracheotomy is cured, decannulation presents little difficulty after the infiltrations are reduced. The reduction of these infiltrations by the galvano-cautery through the laryngeal speculum is readily accomplished. Should cicatricial stenosis from ulceration remain, it is to be treated in the same way as cicatrices from other causes—by laryngostomy. In those old cases of luetic fibrosis little amenable to the older methods of treatment salvarsan has accomplished wonders. Emil Mayer has recommended the use of radiotherapy in the treatment of scleroma. So far, however, the results have been so

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unsatisfactory that they practically constitute the only cases in which decannulation is impossible. When typhoid fever was prevalent in Pittsburg, it was found that the ulcerative lesion in the larynx was practically always the result of mixed infection, but in some instances it was due to thrombosis of a small vessel with subsequent necrosis. The after-treatment of these cases is chiefly by prolonged intubation, and in some cases by laryngostomy. Scarlet fever may be followed by acute laryngeal stenosis which is cicatricial. Occasionally foreign bodies may ulcerate through from the œsophagus into the trachea. A properly fitting tube will not cause any ulceration, if it is free from roughness or sharp edges and is removed sufficiently often to be cleaned. For diphtheria and like conditions he had never seen any improvement on the original O'Dwyer apparatus. When a tracheotomised case reaches the stage when it is to be trained to breathe through the mouth, it is necessary to occlude the cannula. For the reduction of exuberant granulations nothing has yielded better results than resorcin. As a stimulation to epithelialisation the German preparation scarlet red in a sterile 20 per cent. mixture has yielded excellent results during laryngostomy.

Congenital Occlusion of the Post-nasal Orifices.—Charles W. Richardson.—In July, 1912, a case came under observation in which there was complete osseous obstruction of the post-nasal orifice at as early a period in the life-history of the patient as any observer has noted such a condition. Only a few cases are recorded in which the obstruction was observed in infancy. It is not possible to tabulate all the cases recorded in the literature, but they do not exceed 100. The obstruction of the post-nasal orifice may be membranous or osseous. The former are usually found posterior to the nasal cavities in the naso-pharyngeal cavity, but lie in contact with the post-nasal orifices so as to obstruct them completely, while the latter are usually placed within the chamber a millimetre or more from the free border of the posterior nasal orifice. To these two forms may be added congenital atresia, by which the bones entering into the formation of the post-nasal orifice become united, thus more or less completely obstructing the post-nasal orifices. The child under observation had marked difficulty in breathing. It struggled for air and the face became suffused and slightly cyanosed, the condition being relieved when it began to cry. Whenever it ceased to cry there would be a recurrence of the difficult breathing. Examination demonstrated complete obstruction of the post nasal orifices. By the end of the second week the child learned to maintain mouth-breathing, and also learned to feed in a short time, and has developed in a normal manner. The question is: When is the proper time to operate? The marked success with this case seemed to favour the expectant surgical policy in these cases.

Foreign Bodies in the Œsophagus.—Cornelius G. Coakley.—The first patient, a boy, aged sixteen, thought he had swallowed a piece of plate in his soup. He had a temperature of 105° F., rapid pulse and pneumonic area in the right lung, when first seen. Examination of the pharynx showed œdema extending from the vault of the naso-pharynx as far down as one could see with the laryngeal mirror, or feel with the fingers. It much resembled a retropharyngeal abscess. The X ray showed a triangular foreign body. It was jagged, and evidently had cut into the mucous membrane so as rapidly to infect the pharyngeal mucosa, and the secretion from the infected pharynx passing into the larynx, setting up a septic pneumonia within twenty-four hours. The boy died

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fourteen hours after the operation from acute septic pneumonia. This case shows the necessity for the prompt operative relief for removal of sharp foreign bodies. The same day a boy was seen, three years of age, who had swallowed a coin. The X ray showed the coin at the level of the sixth cervical vertebra. The child had no symptoms. The coin was removed by operation and the child suffered no subsequent discomfort. In this instance the coin had been in position for five days before it was removed.

Symposium on Phlegmons of the Upper Respiratory Tract; Report of a Case.—F. E. Hopkins.—This case illustrates the possibility of erosion of a large blood-vessel. The patient was a male, aged twenty-six, of poor resistance, because of leading an irregular life and having had a recent acute illness. He had suffered from measles and while convalescing took cold. There was marked swelling on the left side with severe pain, but the patient was not prostrated, and at no time did his temperature go above 101° F., or his pulse above 80 or 90. Deep incisions were made, but these yielded no pus, and there was no evidence of pointing. Two days later a hæmorrhage occurred which was controlled by pressure. On the following day a terrific hæmorrhage occurred and quickly proved fatal. Such an examination as could be made immediately following death showed rupture through the posterior pillar, the flood from an eroded carotid finding exit there. Such a mass of cellular infiltration should be explored with a blunt instrument, even the finger, following unfruitful incision. The wonder is not that phlegmons threatening life occasionally develop, but rather, considering the frequency with which infections of this region occur, that they are so rare that an active professional life may pass and not a single one come under observation. Microscopic findings are of little value in determining the treatment of these cases. Early and effective drainage is the best assurance of a favourable result. Suffocation from flooding of the larynx by the sudden rupture of an abscess has been reported, and tracheotomy has been required because of closure of the pharynx by infiltration and œdema.

Inflammation of the Lateral Columns of the Pharynx leading to Abscess Formation.—Henry L. Swain.—Any isolated mass of lymphoid tissue can in a general way be expected to act when inflamed exactly after the fashion of the faucial tonsil. The adenoid or pharyngeal tonsil may show acute as well as chronic inflammation. The same is true of the lingual tonsil. If we continue to remove root and branch from young children all of their adenoids and faucial tonsils, there will be abundant need to devote more and more attention to these masses of lymphoid tissue as well as to the lingual tonsil. In years gone by, when adenoids were removed from children and the faucial tonsils were left untouched, the latter subsequently enlarged into a perfectly healthy growth, as though needed by the system. If the faucial tonsils are ruthlessly removed, there will be enlargement of the lingual tonsil or lateral columns of the pharynx, as there has been of the faucials following the older simple adenoid operation. If this is logically true we will find not only acute inflammations of these structures, but also phlegmons. We have assumed more or less arbitrarily that as the lateral column of the pharynx is no mean mass of lymphoid tissue, and as it has been known to have all other kinds of inflammation to which lymphoid tissue is heir, we have a logical right to expect that there may also be the phlegmonous type. He recently had had six cases of œdema of the

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larynx, in two of which there was no quinsy at all. There was inflammation of the lateral column of the cord (? pharynx.—Ed.) in both these instances, and there was in one a marked general, what may be called rheumatic, infection, where various joints of the body were affected, but with no persistence of the symptoms in any one place for any length of time. In these various cases of œdema one has to look to some other cause than pressure.

(*To be continued.*)

MEETING OF THE GERMAN OTOLOGICAL SOCIETY.

Stuttgart, May, 1913. (*Monatss. f. Ohrenh. Year* 47, *No.* 7.)

Abstract Report of Proceedings.

Closure of the Eustachian Tube with a Horn Peg.—Laurowitsch (Jena).—This method had been used as a routine procedure by the author with extremely satisfactory results in his radical operations. It was also most successful as a means of checking a persistent discharge due to a purulent condition of the tube in cases operated on previously and otherwise healed.

Experimentally produced Occupational Deafness.—Hoessli (Basel).—The author has continued his research in this direction (see vol. lxiv, *Zeitschrift f. Ohrenh.*), and has come to the following conclusions: (1) If the incus is removed from one ear of the animal (guinea-pig) under investigation this labyrinth shows no change after ten weeks' residence in the copper kettle, whilst that of the sound ear on the opposite side becomes the seat of advanced destructive processes. (The copper kettle, which constitutes the cage in which the animals are kept, is essentially a cylinder of metal on which four small mechanically driven hammers strike.) (2) If the middle ear has been damaged by inflammatory or adhesive conditions, the labyrinth on this side, in a similar way, is unaffected. (3) If the animals were insulated within the cage by means of a 2 cm. thick piece of felt they suffered in the same way as the controls not so insulated. (4) The degenerative process commences in all these tests in three to four weeks. The conclusion is that air-conduction plays by far the greatest part in the production of occupational deafness, and that any interruption of this route tends to protect the termination of the cochlear nerve.

Disturbances of Hearing and Equilibration in Lues.—O. Voss. (Frankfurt-a-M.).—(1) Lesions of the inner ear occurring in the course of lues are almost without exception the result of the disease. (2) The more common occurrence of such lesions during the secondary stage of the illness since the introduction of Ehrlich's salvarsan is due to the insufficiency of the dose administered. (3) The basis of the histological changes is the effect of a coincident cerebro-spinal meningitis of luetic origin. (4) These consist in a neuritis of the cochlear nerve, and in inflammatory changes in its peripheral end-organ. (5) The site of the

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