He had been very subject to colds for some years, and in the intervals he was troubled by a fairly copious discharge of clear fluid from both nostrils and a heavy feeling in the head. Five years ago he had polypi removed from the left side and was told that the right side also required to be cleared, but owing to business matters he neglected having anything further done.

On examination the left side was found to be free from any recurrence, nor could any sign of pus be found either at the first or any subsequent examination.

On both sides there was a clear air-way in the region of the inferior turbinates and the septum was of normal thickness.

Immediately above this the septum was enormously thickened, especially on the right side, where it completely blocked any view of the middle turbinate region, being in contact with the outer wall of the nose. The thickening was soft, and dimpled on being touched with a probe. On the left side the thickening was not so marked, and it could be seen that the enlargement was not uniform, but that the mucous membrane was thrown into irregular folds or lobes. By measurement the septum was found to be $2\frac{1}{2}$ cm. thick at the anterior part.

By posterior rhinoscopy the upper and lower portions of the septum appeared normal, but the central half was enlarged and appeared about 1 cm. thick. No pus could be detected. Cocaine and adrenalin reduced the swelling to about half its usual size, and polypi were seen and removed from the right side. Neither the number nor size of these was great. After their removal one could make out that the enlargement extended backwards in the middle turbinal region and was apparently connected with the swelling seen by posterior rhinoscopy. At no time could any trace of pus be found, the only discharge being clear and watery.

By repeated applications of the cautery the septal swelling was reduced till free nasal respiration was established. The rhinorrhœa was cured, and the sense of smell, which had been very much impaired, was greatly improved. When last seen some months after the last cauterisation the septum was nearly normal in thickness, and the patient said that he had been entirely free from colds, that his head symptoms had disappeared, and that his general health had much improved.

SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE—LARYNGOLOGICAL SECTION.

January 9, 1914.

DR. D. R. PATERSON, *President, in the Chair.*

Thickening of the Palate and Upper Part of the Larynx, probably due to Congenital Syphilis.—H. Lambert Lack.—The cases showed diffuse thickening of the uvula, pillars of the fauces and adjacent parts of the soft palate, and of the epiglottis, arytænoids and

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upper part of the larynx. The condition was chronic and had not yielded to treatment by iodide or mercury or salvarsan. It was apparently stationary or varied very little and showed no tendency to ulcerate. There was occasionally slight difficulty in breathing. The cases were similar to two others he had previously shown, about which differences of opinion have arisen. In all but one the Wassermann reaction had been positive and the diagnosis of congenital syphilis rested entirely upon this. In none of the cases had any treatment been beneficial, nor had microscopical sections of portions of tissue removed thrown any definite light upon the pathology.

The PRESIDENT had seen several such cases and had been at a loss for an explanation, though most of them were before the days of salvarsan or the Wassermann reaction. As none of them improved under anti-syphilitic treatment, one was inclined to put syphilis out of court.

Dr. DUNDAS GRANT inquired whether thyroid extract had been given in combination with anti-syphilitic remedies, as it had been found that interstitial keratitis in children did not yield to ordinary specific treatment, but a beneficial effect was brought about when thyroid gland was added. He had not had an opportunity of trying it.

Mr. STUART-LOW had had two cases of this kind in which ordinary specific treatment was of no use. He had found the application of menthol ointment and massage to the sides of the neck most beneficial. Exercise for the muscles of the pharynx, particularly singing and reading aloud, had been very useful. In the cases shown the tonsils were large and very septic, and he strongly recommended that they should be enucleated and the adenoids removed. It was quite likely that these septic conditions aggravated the pharyngeal trouble.

Mr. HERBERT TILLEY said the point mentioned by Mr. Stuart-Low had also struck him when looking at the first case. As Dr. Lack had a series of cases it would be interesting if he were to enucleate the very large tonsils in the first case. Two of the three cases had abnormally large tonsils, and on that account alone it might be wise to enucleate in order to eliminate any possible septic factor in the cases. He referred to Dr. Brown-Kelly's interesting monogaph on the subject, in which there were histological observations on some of his cases.[1]

Dr. FITZGERALD POWELL said that the odd thing was that despite the use of salvarsan the Wassermann test remained positive. It appeared to be the result of congenital syphilis in which the infiltration and thickening remained.

Pharyngeal Pouch; Removal under Local Anæsthesia.—W. H. Kelson.—Patient, a male, aged seventy, was admitted to hospital in November, 1913, with the diagnosis of stricture of the œsophagus. He had had increasing difficulty in swallowing for four years and was getting steadily thinner and weaker. After examination suspicions were aroused as to the correctness of the above-mentioned diagnosis, and an X-ray examination clearly demonstrated the presence of a pouch dipping down to the aortic arch and lying behind and a little to the left of the œsophagus. As the patient appeared to be going downhill somewhat rapidly it was decided to operate, and to avoid all risk of post-anæsthetic vomiting I decided to use local anæsthesia. Operation was performed on December 3 after injection of a solution made from three "tabloids"

[1] See also Dr. Logan Turner's article, JOURN. OF LARYNGOL., RHINOL., AND OTOL., February, 1914, p. 57 and *seq.*

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(B. & W.), each containing cocaine mur. $\frac{1}{5}$ gr., morph. mur. $\frac{1}{40}$ gr., along the line of the proposed incision. Hæmorrhage was trifling. It was found necessary to divide the omohyoid muscle.

X-ray Report.—December 1, 1913: The posterior mediastinum is clear, except at the level of the top of the aortic arch, where there is a definite shadow. A spoonful of bismuth glycerine (thick emulsion), when swallowed, shot down rapidly to the level of the top of the aortic arch and lodged in a pouch at this level. Bismuth emulsion (thin) filled this pouch to the top and then overflowed to the left, running straight down through the œsophagus and entering the stomach without delay. The pouch remained full after many minutes, and no bismuth passed down the œsophagus, except over the top of the pouch. After drinking pure water the pouch still remained full, and when the patient lay on the couch no bismuth escaped from the pouch in any position. This is a typical pharyngeal pouch, causing difficulty in swallowing by displacing and compressing the œsophagus just above the level of the top of the aortic arch.

January 30, 1914: A thick bismuth emulsion passed through the œsophagus with perfect freedom, and there was no obstruction or deviation at the seat of the former pharyngeal pouch. A little bismuth entered a slight pit at the level of the epiglottis, but passed out again immediately; this recess is considerably higher than the opening of the pouch and has evidently no connection with it; it is *not* pathological.

The PRESIDENT said it was an object-lesson of what large operations can be done under local anæsthesia.

Mr. NORMAN PATTERSON asked whether Dr. Kelson found the fundus of the sac at the level that the skiagram showed it to occupy. A skiagram taken in the erect posture, with the sac filled with bismuth mixture, might show the fundus to be lower than it actually was.

Dr. KELSON replied that there was nothing very special about the technique. All that he felt anxious about was lest he should wound the recurrent laryngeal nerve, which was in close contact with the sac; for that reason he was glad the patient was not under a general anæsthetic. That was the reason why enlarged thyroids were sometimes removed under local anæsthesia. He thought the sac passed down to the level of the aorta, because when his finger was enucleating it he could feel the aorta beating on the back of his forefinger.

Dr. JORDAN pointed out the characteristics which distinguished a pouch from an organic stenosis. When the patient swallowed the bismuth one saw the pouch fill, and then the bismuth was seen to overflow from the top and run down in a full stream to the stomach. In a case of organic obstruction one could see a thin stream of bismuth trickle down from the lowest part of the pouch. The condition present in Dr. Kelson's patient was now called a "pharyngeal pouch." There was a true œsophageal pouch sometimes seen radiographically, and sometimes accidentally discovered *post-mortem*; he believed it had no clinical significance. In the *post-mortem* room he had sometimes seen a little fossa into which one's finger could be placed below the bifurcation of the trachea. A fossa of this kind was sometimes seen immediately below the projection always present where the right bronchus crosses in front of the œsophagus. He would like to know if such œsophageal pouches had ever been known to give clinical evidence of their existence.

Sinus Suppuration in Young People.—Dan McKenzie.—*Case* 1: *Frontal Sinusitis in a Girl, aged seven.*—There was a curious history in the

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case. About three months before she came to hospital the patient was overturned by a bicycle and thrown on her face. A fortnight later pain and swelling in the left supra-orbital region and around the left eye set in, together with headache and pyrexia. After about ten days of fever and headache, the patient being confined to bed, a sudden gush of pus from the left nostril took place. Thereupon the pain ceased, the fever left her, and the child was able to be up and about; but the discharge from the nose continued. When she came to hospital pus was seen to be oozing freely from under the left middle turbinal. A skiagram showed well-marked frontal sinuses on both sides, and the left frontal sinus together with the left antrum threw shadows. Treatment was confined to nasal drainage; the left middle turbinal was removed and nasal antrostomy performed, and the discharge gradually ceased.

Case 2: *Double Maxillary Antrum Suppuration in a Girl, aged twelve.*—The condition was subacute. After washing out the cavity several times with a Lichtwitz trocar, the radical antrum operation was performed on the left side and simple nasal antrostomy on the right. The discharge had now ceased.

Case 3: *Left Frontal Sinusitis in a Girl, aged fifteen*; *Radical Killian Operation; Necrosis of the Bridge.*—The patient is now aged seventeen, her operation having been performed two years ago. The case was one of ethmoidal suppuration with polypi. After curetting and drainage the presence of headache and local pain led to the radical frontal sinus operation (Killian). The bridge necrosed and was removed a fortnight later, but the wound has healed with very little deformity on account of the natural flatness of the patient's nose. There was still a fair amount of discharge.

The PRESIDENT said the first case was of interest in that the cause was due to some injury. The influence of trauma in frontal sinusitis came perhaps more often before those who practised in industrial districts, owing to claims for compensation. He had been consulted in regard to one or two such cases. He did not doubt that even comparatively small injuries had some effect in inducing frontal sinus trouble. He remembered a man who had a blow, not severe, on the forehead, which was followed by sinusitis and the discharge of matter through the nose a fortnight later. He would like to hear, in regard to Case 2, what principle determined the choice of the radical operation on the left side, and a simple nasal opening on the right.

Mr. HERBERT TILLEY for some time had suggested that these suppurative inflammations were more common in children than they had been supposed to be, or than text-books stated. Some years ago he had shown a boy whose sinus had suppurated in the course of scarlet fever. The boy's age was eight. Last January, during the epidemic of influenza, he saw a girl, aged nine, who had a temperature of 102° F., with great pain on one side of the head. It was due to an acute empyema of the frontal sinus. Under cocaine he had no difficulty in irrigating the sinus, though she was a nervous little patient. After three or four irrigations she got well in ten days. He believed some of the cases of so-called nasal catarrh in children would be found, on investigation, to be sinus suppuration; he was therefore in the habit of transilluminating these cases, especially during influenza or epidemics of acute specific fevers.

Dr. DUNDAS GRANT, in reference to the use of the term "subacute," asked how long the maxillary antrum suppuration lasted.

Dr. DONELAN asked what were the reasons, in the second case, for discriminating between the two sides in the nature of the operation. The

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radical operation seemed unusual for so young a child, and in his experience it was necessary only in about 4 per cent. of even very chronic cases. By making a large drainage through the antro-nasal wall and allowing a reasonably long period of treatment this comparatively small cavity got well without further operation in the vast majority of cases, and in many became almost obliterated within a year or two. Another advantage of this procedure was that even if one had ultimately to have recourse to the Caldwell-Luc operation its severity was much lessened by the existence of the naso-antral opening already made.

Dr. JOBSON HORNE thought many acute and subacute cases of disease of the accessory sinuses of the nose might, with advantage, be left alone. It was noteworthy how acute and subacute disease in the antrum of Highmore cleared up without any exploratory puncturing and washing out.

The PRESIDENT said it was a practical point as to the kind of case for which the two methods should respectively be used. Moure, of Bordeaux, has brought forward, at the International Congress,[1] very definite views with regard to operation in these cases, and the experiments of Ssamoylenko showed that if one wished to obliterate the whole sinus one had to remove completely the whole mucous membrane, and that could only be done by radical methods. With regard to the influence of trauma in the compensation cases on which one was sometimes consulted, the law laid it down that if a blow contributed or in any way led to the incapacity, that blow was supposed to be responsible for the particular affection; and, whether primary or secondary sinusitis followed, the patient was entitled to compensation. He had two cases in mind: one was definitely primary, there was no previous history, and it healed up soon; in the other case it was secondary—a slumbering sinusitis was stirred up by a blow on the forehead—and intranasal, and subsequently external, operation had to be done.

Dr. DAN MCKENZIE, agreed with what had been said as to the possibility of trauma inducing suppuration, or rendering already existing acute suppuration chronic. He also agreed as to the frequency of such conditions in childhood; in childhood he believed that sinus suppuration was common, because acute otitis media was more common in children than in adults. The reason these cases did not come under their care was that the acute condition passed off in children, owing to the smallness of the sinuses and the fact that they were more easily drained. With regard to the second case, in which he did a more simple operation on one side than on the other, the case showed that the simple operation would have sufficed for both sides. The condition was subacute, only of a few months' duration. The cavities had been repeatedly washed out, but without benefit. The guide to the performance of the radical operation was when ordinary drainage did not relieve or cure the condition—in other words, when polypi were present; then it was necessary to open the antrum thoroughly and to remove the mucous membrane. The diagnosis of polypi in the antrum was difficult. With regard to operating through the canine fossa, the nerves to the canine and bicuspid teeth were cut through; he believed, however, that after a time the nerve-supply to these teeth was renewed.

Dr. DONELAN said, in regard to the diagnosis of polypi, it would often be found practicable to employ a small mirror at the naso-antral opening.

[1] JOURN. OF LARYNGOL., RHINOL., AND OTOL., vol. xxviii, p. 526.

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If this opening were of good size—and in chronic cases it should be at least as large as a sixpence—a very good opportunity was afforded of thus studying the condition of the mucous membrane and its reaction to drainage and other treatment before deciding on an opening through the canine fossa. An instrument which was an adaptation of Brünings' lamp had lately been devised for examination of the antrum through a naso-antral opening.

Dr. DUNDAS GRANT said he had been able to diagnose the presence of polypi in the antrum while making Lichtwitz's puncture. The point of the instrument felt as if embedded in a soft substance.

Dr. WATSON-WILLIAMS said that, by the use of the antral suction syringes, one could frequently diagnose the presence of polypi without opening the antrum at all, and he had very often confirmed such diagnosis by subsequent operation. When using this syringe it was not necessary to make an opening into the antrum, as, by the syringe, a little distilled water was passed into the antrum, and whatever matter or discharge existed in the antrum was sucked up into the syringe. When polypi existed they generally obliterated the needle aperture on suction, and he had even removed in this way a core from a sarcomatous growth for examination by the microscopist. If such blockage on suction was not caused by a polypus, there was a neoplasm present, or else exceedingly thick and tenacious secretion. Experience of the use of the syringe in at least 200 cases showed that polypi in the antrum could thus be diagnosed with surprising frequency, and polypi were thus often detected when their presence was quite unsuspected.

Mr. CLAYTON FOX said that Mahu made a point of measuring the capacity of the antrum by injecting fluid into it, recovering it again afterwards by suction. That formed some guide as to the thickness of the mucous membrane.

The PRESIDENT said he had tried most of the methods, and was convinced that nothing but inspection through the canine fossa would give a really trustworthy impression of the condition of the mucous membrane of the antrum.

Cavernous Angioma of the Uvula.—Dan McKenzie.—Male, aged twenty-eight. The uvula presented an irregular club-shaped appearance. Its cavernous character was sufficiently obvious. No symptoms were complained of.

Dr. JOBSON HORNE recalled a similar case which was shown before the Section some years ago, in which the palate was mainly affected.

Combined Syphilitic and Tuberculous Infiltration of the Larynx.—Dan McKenzie.—The patient is a woman, aged about forty-eight. Six years ago she came under the exhibitor's care for tertiary ulceration of the nasal septum, with some redness and thickening of the vocal cords. This was cured by anti-luetic remedies. In September, 1913, she returned with infiltration of the larynx without œdema, ulceration, or any other sign suggestive of tuberculosis; but as the patient complained of cough and expectoration, the sputum was examined and tubercle bacilli found.

On October 19 an injection of neo-salvarsan was made, with immediate relief to the symptoms. The voice became clearer and the cough easier. An interesting (? Herxheimer) reaction was observed in the larynx which began the day after the administration of the neo-salvarsan, the mucous membrane assuming a livelier red, and appearing to be moister and more

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succulent. This promise of benefit was not, however, realised. The infiltration increased, and as it was affecting the subglottic region, and giving rise to serious dyspnœa, she was again admitted to hospital. On November 14 salvarsan was injected, and the same evening urgent tracheotomy under local anæsthesia had to be hurriedly performed. There was no evidence whatever that the laryngeal obstruction had been increased by the salvarsan. She experienced some difficulty with the metal tracheotomy tube, which proved irritating and very productive of coughing, so a rubber tube was inserted, with immediate relief. The coughing had, however, led to a wide-spread emphysema of the tissues of the neck and thoracic walls.

Since the tracheotomy the larynx has gradually come to assume the typical aspect of tuberculosis with œdematous infiltration of the arytænoids. The galvano-cautery puncture has been used once with some benefit.

Dr. JOBSON HORNE considered that the predominant factor in the case was tuberculosis. In his experience those who came from tuberculous *stock, contracting syphilis and subsequently developing phthisis*, were more liable to laryngeal lesions, and the lesion was usually tuberculous.

Dr. DUNDAS GRANT suggested that there was now sufficient room in the larynx for the patient to breathe without retaining the tracheotomy tube, and that the chance of improvement would be heightened if it were possible to do without it.

The PRESIDENT said he now had a case in which the question was whether it was predominantly one of tubercle or syphilis. The boy was aged thirteen, and there was obvious palate trouble as well as laryngeal. Wassermann's test was positive and tubercle bacilli were said to have been found in the sputum, and he reacted to tuberculin. He improved materially under iodide, and the question was raised whether he should be sent to a sanatorium. The disease in the larynx seemed to hang fire, having improved up to a point.

Dr. DAN MCKENZIE had hoped someone would allude to the complication which followed the tracheotomy. His experience was that for the first two or three days following tracheotomy the patient required much attention because awkward accidents were apt to happen, though he had not previously seen emphysema occur.

Myasthenia Gravis, with Affection of the Larynx and Soft Palate.—Edward D. Davis.—A woman, aged twenty-five, was admitted to hospital in February last for Raynaud's disease. She complained, amongst other symptoms, of loss of voice, difficulty in swallowing, and regurgitation of fluids through the nose. The loss of voice occurred suddenly without apparent cause in September, 1912, and was followed a little later by difficulty in swallowing and regurgitation through the nose. When seen in February, 1913, a diagnosis of functional aphonia was made, and in spite of the nasal voice and regurgitation through the nose no paresis of the soft palate was detected. Treatment by the faradic current, cold douching, valerian, etc., had no effect. At a second examination in June the condition had progressed, the paresis of the soft palate was well marked, the vocal cords abducted slightly, but remained in the cadaveric position during deep inspiration, and on vocalisation very little adduction was produced. The pharynx and palate were somewhat insensitive. The Wassermann reaction was negative. The condition of the skin was also first noticed then. It was observed on repeated examinations that the amount of paresis varied

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and appeared to increase when examination was prolonged. On December 16 the diagnosis of myasthenia gravis was made, based on (1) the muscular weakness and rapid fatigue; (2) the variability of the paresis; (3) the increase of paresis on exertion and the difficulty of mastication and swallowing; (4) the affection of the cranial nerves.

Dr. Gordon Holmes, from the neurological point of view, did not think there could be any doubt about the diagnosis, as in addition to the facts printed in the notes the patient had occasionally had diplopia during the past eight months, and difficulty in mastication and in talking, especially when tired. Further, various groups of muscles, especially in the upper limbs, could be easily fatigued; some time ago, for instance, she had great difficulty in doing up her hair, and while attending hospital she had always to rest on the way from the tram, though the distance did not exceed 400 yards. This abnormal fatiguability of the muscles is of course the characteristic feature of the disease; this patient is able to do a certain amount of household work, walk a certain distance and converse with her friends in the morning, but the fatigue in these and all other actions gradually increases as the day advances. But definite palsies, that is, more or less complete temporary or permanent loss of power of certain muscles, are frequently associated with this fatiguability, and it is an interesting fact, supported by the laryngoscopic observations in this case, that such permanent palsies are generally seen only in the muscles innervated by the cranial nerves; he had one case in which complete palsy of certain external ocular muscles had lasted about twelve years. In almost every case there is definite weakness of the orbiculares oris and palpebrarum, and in addition to the persistent laryngeal and palatal palsies this patient is unable to whistle, and has great difficulty in blowing out her cheeks, and both eyelids and lips are easily separated even when she tries to her utmost to keep them closed.

Dr. Dundas Grant asked whether Dr. Gordon Holmes observed the perverse action of the muscles of the tongue in this patient. The more she tried to obey the request to put out her tongue, the more it seemed to lie in the floor of the mouth, or even to be drawn back. Possibly it was because the posterior fibres of the genio-hyoglossus had become fatigued by the examinations. He had noticed the same difficulty in a case of bulbar paralysis. The patient's right vocal cord seemed to be very paretic, but the left one was active, and she seemed to have nystagmus to whichever side she turned her eyes. He asked whether that was frequent in myasthenia gravis or more frequent in disseminated sclerosis. He would also like to hear how, except in very marked cases, one would exclude bulbar paralysis.

Sir Felix Semon said he probably was the first laryngologist to observe any participation of the upper air-passages in affections of this kind after the disease had been described as a definite entity. The extraordinary thing about the disease was the variability of its symptoms. Mr. Davis, in his notes of the case, spoke of the "paresis of abduction," so that the cords only opened on deep inspiration to the cadaveric position. On examining to-day, however, the glottis was found to open to the full extent, and one could not now say there was any paresis at all of the abductors. He hoped Mr. Davis would put this right, as well as the last line in the description, which stated that the diagnosis was made *inter alia* on the "affection of cranial nerves." He believed Dr. Gordon Holmes would agree that the pathology of this affection still remained obscure—*i. e.* as to whether it was primarily an affection of muscular fibres or of the nerve-end plates. At any rate he believed no affection of nuclei

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had ever been found in the disease, nor any organic disease in the cranial nerves themselves. If the present statement of the note were to go forth—viz. that the diagnosis was based upon the "affection of cranial nerves," and that primarily there had been paresis of the adductors, as manifested by the weakness of voice—that would probably be taken as a fresh proof against the validity of "Semon's law," that in progressive affections of the cranial nerves the abductors suffered first.

Mr. Somerville Hastings asked if Dr. Gordon Holmes would say what was the usual termination of these cases. Some two years ago he showed a similar case in a boy, whose condition was diagnosed as myasthenia gravis, and three months after being exhibited to the Section the child died suddenly ten minutes after being seized with dyspnœa.

Mr. Davis, in reply, said that this was the first case of myasthenia gravis he had seen. When Dr. Holmes made this diagnosis he hastened to look up the literature, and found six other cases recorded, but a laryngeal examination had been made in only two of them—namely, cases recorded by Mr. Somerville Hastings and Dr. Farquhar Buzzard. Sir Felix Semon examined the larynx of one of Dr. Buzzard's cases. In three of the six cases affection of the palate and larynx was mentioned, but no laryngeal examination was recorded.

Dr. Gordon Holmes, in further reply, said he first saw the patient a fortnight ago and had examined her since, and each time he found the tongue movements fairly normal, but he noticed that she tired quickly when she attempted to keep her tongue out. In many cases of this disease, however, there are curious longitudinal grooves on each side of the tongue which have been attributed to wasting of the lingual muscles. He had also failed to detect any true nystagmus on the occasions when he examined her, but the ocular muscles tired easily and fixation then became defective. The differential diagnosis of this disease from true bulbar palsy is as a rule not difficult, though in the past many cases of myasthenia have been confused with it. But in ordinary bulbar palsy the masticatory and ocular muscles are not involved, the weakness is constant and not variable as in myasthenia, and it is always associated with wasting of the affected muscles of the lips, tongue, palate, and vocal cords. The termination of myasthenia gravis is almost always fatal, though some cases, especially those which start late in life, run a very slow course. The only effective treatment is to keep the patients as much at rest as possible and to spare them from stress and fatigue.

An Unusual Case of Adductor Paresis.—Edward D. Davis.—A healthy gardener, aged forty-seven, complained of loss of voice of gradual onset, and that fluids occasionally went down the wrong way, following influenza five years ago. In January, 1910, well-marked weakness of the arytænoideus, with the typical triangular interval behind the vocal processes, and the approximation of the anterior two thirds of the vocal cords was seen on vocalisation. There was no evidence or history of rheumatism or syphilis. Skiagraphy of the chest and examination by the direct method were negative. No fixation of the arytænoideus could be detected. Treatment by faradisation, valerian, etc., had no effect. An examination in June of this year showed that the paresis had progressed considerably, and that the adductor paresis is practically complete. The nervous system has been repeatedly examined, and on the last occasion by Dr. Gordon Holmes, who found no signs of organic disease.

Sir Felix Semon said the history was unusual, but if he had seen the case without knowing anything of the history, he would unhesitatingly

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have said it was a case of functional double adductor paralysis. Even now he did not doubt it was functional.

Mr. HERBERT TILLEY asked what strength of current was used. In a case of bad or chronic aphonia it was well to give the patient full doses of strychnia, and then apply such a strength of current that it would not be forgotten. He also asked if the current was applied extra-laryngeally. In one very intractable case he had given a general anæsthetic and examined the larynx under it; then as she was coming round an intra-laryngeal electrode was passed so as to cause her to cry out and hear her own voice. The result was successful, at any rate so long as she was in hospital.

Dr. DE HAVILLAND HALL said the plan recommended by Mr. Tilley was not always successful. He had a case twenty-five years ago in which the patient screamed out violently, but she still persisted in not using her voice.

Dr. DONELAN remembered a very similar case to Dr. Hall's, in which the strongest possible current was used on several occasions through a laryngeal electrode. The voice was generally, though not always, restored, but the improvement did not continue more than a day or two. The fact was that no treatment permanently overcame the psychical condition in some of these patients. He had since been informed that the lady referred to had been cured by a visit to Lourdes.

Mr. DAVIS replied that he gave the faradic current both extra- and intra-laryngeally. The man had five or six applications. When first seen, the condition was diagnosed as functional. Strychnine was not given, but he had cold douching, valerian, etc.; even the passage of a bronchoscope was tried. The present state of the larynx seen on this occasion made it necessary to revise the diagnosis of functional aphonia.

Foreign Bodies removed from the Pharynx by Suspension Laryngoscopy.—Edward D. Davis.—(1) An open safety-pin with the bent point embedded in the posterior wall of the pharynx of an infant, aged eleven months. The lower or hinge end of the pin was about the level of the upper edge of the cricoid cartilage. By suspension laryngoscopy the pin was well seen and removed by seizing the lower or hinge end with Paterson's forceps and rotating the pin around its point. The point was then freed and the pin removed upside down with the point directed downwards.

(2) A farthing impacted at the orifice of the œsophagus and behind the lower edge of the cricoid cartilage in a boy, aged four. It could not be seen by suspension laryngoscopy, but the œsophagoscope was passed while the suspension apparatus was in position and the coin easily removed. Suspension laryngoscopy materially facilitates bronchoscopy and œsophagoscopy.

Skiagrams of a Pin in the Retropharyngeal Space.—Edward D. Davis.—A boy, aged nine, swallowed the pin shown in the skiagrams. A few days later a prolonged attempt to find the pin by suspension laryngoscopy and œsophagoscopy was unsuccessful. After localisation by more skiagrams a second attempt to find or feel the pin wa again unsuccessful.

The PRESIDENT said that where the safety-pin was lodged with the hinge downwards and the point sticking up, he had, in one case, passed over the point a very fine tube, which guarded the point while it was being pulled up, particularly when it was in the gullet proper. An instrument had been invented for closing the pin first, and then with-

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drawing it; but it was difficult to carry a great number of instruments about, and the plan he mentioned was more simple.

Mr. TILLEY asked whether the pin had been looked for with the X-ray screen. He had found that very valuable.

Dr. E. A. PETERS had recorded a case in a man, aged thirty, who felt a sudden pricking when swallowing food, and was admitted with urgent dyspnœa, necessitating immediate tracheotomy. He was relieved, and sat up and was feeling comfortable, but suddenly died two hours after the tracheotomy. The pin was found transfixing his jugular vein, and there was hæmorrhage right down the spine, causing œdema of the glottis.

Mr. CLAYTON FOX asked whether the application of adrenalin had been tried. Probably the head of the pin was in the pharynx, and the swelling of mucous membrane prevented it being seen.

Dr. FITZGERALD POWELL asked at what level in the neck the pin lay, and suggested the possibility of its removal by a lateral pharyngostomy, or an exploratory incision behind the pharynx.

Mr. DAVIS, in reply, said he examined the boy for over an hour with the suspension laryngoscope, with the largest œsophagoscope tubes he could introduce, and by palpation. The skiagrams showed the pin lying on the vertebral column in the retro-pharyngeal space. The X-ray screen was not used at the same time and during œsophagoscopy. After the first examination the temperature was 99° F. for one night, and that was the only temperature he had. It had been decided to wait until there was a retro-pharyngeal abscess, or other symptoms; the boy was still under observation, and if anything occurs it shall be recorded. The first skiagram showed the head of the pin to be at the upper border of the fifth cervical vertebra, which would correspond to the level of the arytænoids, but the pin seemed to have moved upwards since; the point now appeared to be at the level of the soft palate or second cervical vertebra.

Deflection of the Posterior Part of the Nasal Septum.—Norman Patterson.—Male, aged nineteen. Patient came complaining of discharge into the back of the throat. Examination shows some displacement of the anterior edge of the quadrilateral cartilage to the left, together with a deflection of the main body of the septum to the left, and a spur on that side. The lower part of the right nasal cavity is abnormally roomy, and widens out more and more as it approaches the choanal orifice. On anterior rhinoscopy an exceptionally extensive view is obtained of the naso-pharynx and the adenoid tissue present there. Examination with the mirror shows a marked deflection to the left of the posterior edge of the vomer. It is attached in the middle line above, and here it is very broad; as it passes downwards it deviates markedly to the left, and its lower extremity is slightly concealed by the posterior end of the left inferior turbinate, which projects beyond it. The posterior end of the right inferior turbinate is separated from the septum by a considerable interval. Further, the edge of the vomer appears to slope much more obliquely forwards than is normally the case, and this accounts to some extent for the posterior ends of the inferior turbinates, which are somewhat enlarged, being on a plane considerably behind that of the lower part of the septum. The soft palate hangs well forward and the pharyngeal isthmus is abnormally wide. The patient gives the history of small particles of food, especially bread, entering the nose and having to be expelled by sneezing or blowing the nose. The hard palate,

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measured from its posterior edge to the incisor teeth, is more than ¼ in. shorter than in other patients of about the same age and build. Antero-posterior measurements of the lower part of the septum give the same result. On transillumination the antrum is dark on the right side, but puncture reveals no pus in the cavity. An X-ray photograph shows the antrum to be smaller on this side. It is not easy to make certain whether or not there is any asymmetry of the hard palate, but a cast is being made. Other abnormalities presented by the patient are the absence of a lateral incisor on the left side and a very small one on the right. The uvula is bifid.

Dr. DONELAN thought that these cases were not quite so rare as had been generally supposed. He did not at all agree with the reason for their rarity given in some of even our most recent text-books—namely, that the posterior portion of the septum was the first to be developed. We all knew now that this was not the case. The line of potential weakness during growth extended quite to the posterior border. One reason they had not been more frequently reported was probably that attention was much more given to the anterior portion of the septum, and that while it was true that deformities of the posterior portion occurred rather more frequently than used to be thought along the whole line of the supra-vomeral cartilage, these were rarely of sufficient importance to attract much attention unless they were so placed and of such a size as to call for operation. During the last six months he had operated on two cases, one at the age of fourteen and the other at twenty, in which the distortion on the left side extended through the posterior border. Both cases were apparently due to the co-existence of unusually large masses of adenoids.

Dr. DAN MCKENZIE said the whole subject had been worked out by Dr. Brown-Kelly,[1] but he did not remember whether that author paid special attention to the sloping of the septum. He could corroborate what Dr. Hill said; he had noticed cases in which the septum sloped very far forward. He thought it was related to cleft palate, as there was an absence of a lateral incisor tooth on the left side.

Dr. JOBSON HORNE considered that the deviation of the posterior part of the septum in cases of abnormal development of the nose or the palate, or the antrum of Highmore, was more apparent than real. When the development of the antrum had been arrested the choana was wider on the affected side and the septum appeared to be deflected to the opposite side. The same applied to the wider choana seen in cases of cleft palate on the same side as the cleft.

Mr. NORMAN PATTERSON had not seen anything like this case previously. He agreed that one could frequently see the posterior end of a spur with the rhinoscopic mirror, but such differed from this case, where the whole septum was deflected to one side. Had the condition been due to the extension of the sphenoidal sinus into the vomer the main deformity would have been above; here it was the lower part of the septum that showed the greatest deviation from the middle line.

Laryngeal Neoplasm.—W. Jobson Horne.—The patient, a man, aged forty-six, had had an "irritable" nose all his life, and hay-fever and asthma for twenty-four years. Hoarseness developed with a "cold" ten or twelve weeks ago. Recently there had been some soreness referred to the right side of the larynx, and a little pain now and then

[1] JOURN. OF LARYNGOL., RHINOL., AND OTOL., vol. xxv, pp. 281, 343.

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passing up to the ear on that side. The right half of the larynx was almost, if not quite, fixed; the neoplasm occupied the right vocal cord in the entire length; but so far as could be seen it had not crossed over to the left cord. The growth was irregular and sloughy. At the time of taking these notes (December 30, 1913) no glands were palpable in the neck. The patient was one of a family of twenty-five, of whom twenty-two were living, and the eldest fifty-six. When the hoarseness developed the asthma ceased. The patient had been taking iodide of potassium and mercury since December 30 last.

Dr. DUNDAS GRANT said that there was less eversion of the edges and fungation than in a case of typical epithelioma, and the centre seemed to be sloughing out. It looked exactly what one would expect to see in a foreshortened view of an ulcerated gumma.

Prof. BURGER (Amsterdam) agreed that in this case there were two possibilities: that it was a malignant growth, or that it was syphilitic disease. He agreed that most probably it was a syphilitic affection. In favour of that view there were three factors: (1) the glossy, yellowish-white aspect of the tumour and its sharp edge; (2) the dark red colour of both ventricular bands; (3) the fact that not only the left ventricular band was swollen, but the right also. The absence of swelling of the glands did not constitute an argument, but it gave support to the opinion he had expressed. He hoped the report of the Wassermann test would be known, and, later, the result of antisyphilitic treatment.

Sir FELIX SEMON said that when he first saw the case he felt no doubt that it was a malignant growth. To that view he still adhered, though he might have come to the idea on mere clinical instinct. Of course he was not unmindful of the German proverb that "night-watchmen sometimes died in the day," and his diagnosis might be mistaken, but still he thought it was right.

Mr. HERBERT TILLEY for once differed from Sir Felix in the diagnosis of this case, and agreed as to the points put forward by Prof. Burger. There was a curious easy movement of the parts around the ulcer, though he did not suggest that in every malignant case there was necessarily an immobility of the cord.

Dr. FITZGERALD POWELL considered, with Sir Felix Semon, that the case was malignant; he thought so when he examined it, and was still of the same opinion, notwithstanding the history of specific disease mentioned.

Dr. KELSON said he thought it was a fairly typical gumma, which was breaking down.

Dr. JOBSON HORNE replied that when he first saw the case on December 30 he thought it was epithelioma and he was still of that opinion. However, before operating he would await the result of the Wassermann test and then act accordingly.

Carcinoma of the Soft Palate.—W. G. Howarth.—Ten weeks ago the patient noticed a lump at the angle of the jaw on the left side. It was not painful, but as it increased in size he came to the hospital for advice. He had not noticed anything wrong with the mouth or throat. A large mass of glands infiltrating the left sterno-mastoid have been removed. During the last few days considerable discomfort has been noticed on swallowing.

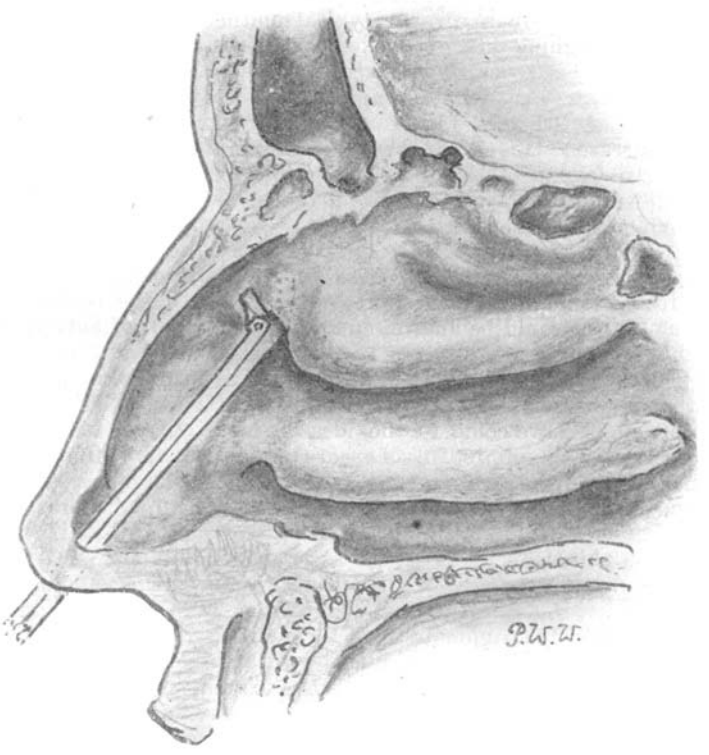
The PRESIDENT asked whether Mr. Howarth thought it necessary to remove the glands on the other side. The growth on the palate seemed to be dangerously near the middle line.

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Mr. Norman Patterson said that in the case of malignant growths affecting the uvula and the central part of the soft palate, even if small, the glands on both sides of the neck should be completely dissected out.

Mr. Howarth agreed that the glands on both sides should be dissected out, and he would suggest that this be done.

Intra-nasal Frontal Sinus Operation; Instruments, and Skiagrams showing Results.—P. Watson - Williams.—The exhibitor



Dr Watson-Williams's method of entering and opening up the fronto-ethmoidal cells.

showed the instruments he used for intra-nasal frontal sinus operations, viz. the small angular forceps, curved cutting forceps for entering and enlarging the fronto-nasal passage, and the guarded frontal sinus burr; also skiagrams of patients, showing the very large bougies which passed into the frontal sinus after operation.

Drawings illustrating the methods of operation were shown. He laid special stress on the method of entering the agger cells and fronto-ethmoidal cells without removing the anterior end of the middle turbinate, the small cutting forceps first cutting the anterior end of the attachment of the middle turbinal to the outer nasal wall in the manner he had described at the Liverpool meeting of the British Medical Association in 1912, and shown in the accompanying illustration.

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PROCEEDINGS OF THE SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting at the Royal Infirmary, Edinburgh, November 22, 1913.

MR. J. D. LITHGOW *in the Chair.*

Reported by DR. W. S. SYME.

(*Continued from p.* 164.)

A Clinical Investigation of Otosclerosis.—J. S. Fraser and Gideon Walker.—(This paper will appear *in extenso* in a subsequent number of the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.)

Dr. ADAM asked if Dr. Fraser knew anything of the incidence of otosclerosis in rheumatoid arthritis. Mr. O'Malley had recently drawn an interesting parallel between the two conditions, though he had omitted reference to this point. If the parallel held one would expect a marked incidence. He had examined some half-dozen cases of rheumatoid arthritis, some of them marked, and had found no trace of otosclerosis. From the therapeutic point of view this was important, as in that condition the treatment laid down by Sir James Barr was of undoubted value. This was dietetic, with the addition of fairly large doses of alkalies and calcium salts, Sir James Barr regarding the condition as an acidosis.

Dr. KERR LOVE thought one of the most important points was the question of heredity, and, if it was hereditary, the type of heredity which existed.

Dr. LITHGOW said that in the method of treatment suggested by Zünd Burguet, as the patient improves the cerumen secrètion recommences, and this increase of wax can be used as an index of commencing improvement. In the proposed inquiry the presence or absence of ceruminous secretion might be noted.

Dr. MILNE DICKIE said there was always difficulty in differentiating between middle-ear catarrh and otosclerosis. Quite often in middle-ear catarrh there is a high degree of deafness; it seemed to him very difficult to be sure in many cases whether there was true otosclerosis or a condition of chronic adhesive process.

Dr. SYME said the amount of hearing with a negative Rinne was important. In early otosclerosis Rinne became negative, with a larger amount of hearing than in adhesive processes.

Chronic Suppurative Otitis Media; Labyrinth Symptoms; Schwartze Operation; Localised Suppuration in Mastoid Antrum; Patient Shown.—J. S. Fraser.—Female, aged fourteen, has had discharge from the left ear for eleven years with occasional attacks of pain. February 7, 1913.—Sickness, vomiting, and giddiness. Patient seen for first time on February 21. *Examination.*—Left meatus full of pus; granulations present; mastoid tenderness. Septum deviated to left. Right nose roomy and turbinals atrophic; no pus. Right ear normal; watch heard on contact with left ear; raised voice at 1 foot. Rinne, negative (left); some loss of high tones (left ear). March 6.—Headache and nausea; tenderness over tip of left mastoid, but none over antrum or posterior border. Watch, 3 in. (left). With noise apparatus in right (normal) ear she hears conversation voice at 18 in. Slight

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spontaneous horizontal nystagmus to left (diseased side). Cold syringing of left ear produces nystagmus to right in forty seconds with typical falling reaction. No fistula symptom. Patient admitted and left ear syringed twice daily. March 23: Left ear almost dry; whisper, 1 ft.; watch, 4 in. March 25: Again pain in left ear; nausea and vomiting; mastoid tender. March 26: Temperature remains normal; again sickness but no nystagmus. March 28: Giddiness. April 4: Girl is better —no pain, nausea, or giddiness. *Perforation of left membrane has healed;* drumhead in-drawn and red; air does not enter tympanum on Valsalva. Watch, 6 in. (left). C32 heard by both ears; whisper, 9 ft. (left). No nystagmus; spontaneous pointing test is normal; walking with eyes shut well performed. Cold syringing of normal right ear—nystagmus to left in twenty-four seconds. Left (diseased) ear reacts in same time. April 8: Girl says she feels well. April 18: Patient has left ward, and now reports nausea in mornings; tip of left mastoid is tender; slight nystagmus to left. Left ear again discharging slightly. May 9: Attacks of giddiness; no tinnitus; slight nystagmus both sides—normal (?) C.V. at 14 in with noise apparatus in right ear. Weber to right (good ear)! Rinne, negative left ear. Left membrane red and bulging posteriorly; sagging of meatal roof; perforation not seen. No fistula symptom. Cold syringing, left ear, first caused giddiness and then convergent strabismus (left eyeball turned in). After syringing, patient had pointing error to left. October 8: Patient returns complaining of pain in left ear; no otorrhœa; left membrane red and bulging posteriorly; no nystagmus. Marked tenderness over tip. Watch, 4 in., left ear. Weber to right. Upper tone limit (monochord), 11,000 (left); 16,000 (right). No fistula symptom. Slight spontaneous pointing error to right. Rotation to right produced giddiness, strabismus, and slight nystagmus to left; tenderness on pressure over tip of left mastoid. Patient admitted. Fundus oculi normal on both sides. October 23: Operation (J. S. F.). Tip of left mastoid removed and found normal; it consisted of fine cells and diploë. Antrum opened through healthy cortex and found to contain yellow pus; mucosa pink and thickened. Antrum appeared almost shut off from attic by swollen mucosa. Dura not exposed; no fistula discovered. Cavity packed—wound left open (tympanum not touched). October 24: Slight vomiting; no nystagmus. October 26: Dressed; wound looks well. November 6: Still going on well; whisper, 18 ft. by left ear. Left meatus dry.

Chronic Suppurative Otitis Media; Attic Perforation; Cholesteatoma; Radical Mastoid Operation; Fistula of External Canal; Serous Labyrinthitis; Recovery.—J. S. Fraser.—Male, aged twenty-four, had discharge from right ear for four years; noises in both ears, no giddiness; nasal obstruction on right side. *Examination.*—Facies of nasal obstruction; septum to right; left membrane shows chalk patch and indrawing; right membrane shows Shrapnel perforation with protruding granulation; no mastoid tenderness; watch heard on both mastoids; Schwabach lengthened; Weber to right; Rinne, negative both ears; low tones not heard either ear; upper limit, 8000 right, 10,000 left; conversation, 3 ft. right, 6 ft. left; slight spontaneous nystagmus to right and left—probably normal; *no fistula symptom.* Spontaneous pointing test shows slight deviation to right. Cold syringing, right ear, gives nystagmus to left in 25 seconds. October 23, 1913: *Radical mastoid operation* (J. S. F.).—Cortex normal, and mastoid of sclerotic type; antrum deep and contained cholesteatoma; sinus healthy; long

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process of incus absent; malleus healthy; cholesteatoma in attic; bony outer wall of external canal deficient. On touching endosteum of canal with probe, eyes deviated to right. Facial nerve exposed by disease. Koerner flap, posterior wound stitched. October 24: Patient sick during night; marked horizontal and rotatory nystagmus to left (non-operated side); slight nystagmus on looking straight forward (second degree); temperature normal. October 25: Sickness continues; still nystagmus of second degree: pointing error to right. October 26: Nystagmus of third degree; patient still vomiting. October 27: Patient better; nystagmus only second degree. First dressing, all stitches removed and wound healed. Raised voice at 1 foot by right ear. Temperature normal. No sickness last night or to-day. October 30: Still nystagmus of second degree. November 3: Temperature normal. Operation cavity not packed for last three days. Nystagmus of first degree only; slight pointing error to right. Fistula symptom tested, but not obtained. Examination with tuning-forks gave same results as before operation. Conversation voice at 2 feet by right ear when left ear closed with finger; raised voice at 6 inches with noise apparatus in left ear. Hot syringing right ear (118° F.) gave nystagmus to right in 10 seconds, with pointing error to left afterwards. Upper tone limit as before. November 6: Patient up and about; no packing in right meatus; nystagmus has almost disappeared.

The Ætiological Relationship of the Faucial Tonsils to Tuberculous Cervical Adenitis affecting Children.—A. Philp Mitchell.—In tuberculous disease of the upper deep cervical glands the faucial tonsils have an importance not hitherto well enough recognised or understood. The position of the tonsils at the entrance to the digestive tract favours infection more with food than with inspired air—a fact of great consequence in considering the frequency with which cervical glands in children harbour the bovine type of tubercle bacillus. Further, the very direct and short pathway between the tonsils and the tonsillar lymphatic glands explains the frequency with which well-marked tuberculosis of these glands may be secondary to a small focus in a tonsil.

I have investigated the faucial tonsils from sixty-four consecutive cases of children suffering from tuberculous disease of the upper deep cervical glands; twenty-four (37·5 per cent.) of these cases showed histological evidence of tuberculosis in the tonsils. There are no clinical signs by which the condition can be recognised. In the majority of cases the tonsil retains its normal appearance, is small and frequently receding. Occasionally the tonsil is flat and its surface fissured, or it may be hypertrophied, the external surface showing *no* ulceration. The chief sites for tuberculous lesions in the tonsil are: (1) surrounding the deeper parts of crypts, especially the supra-tonsillar group; (2) immediately under the mucous membrane near the mouths of crypts; (3) deep in tonsil, close to posterior capsule. The lesions may be localised or generalised. Experimental inoculation of guinea-pigs and rabbits with pieces of tonsillar tissue yielded positive results in nineteen cases (30 per cent.), and of these the bovine bacillus was present in twelve cases, and the human in three cases.

I have also investigated the hypertrophied faucial tonsils removed from ninety children, in whom the cervical glands showed *no* clinical evidence of tuberculous disease; six (6·5 per cent.) of these hypertrophied tonsils gave histological evidence of tuberculous disease, while nine (10 per cent.) yielded positive results when inoculated into guinea-pigs.

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The bovine bacillus was present in three cases, and the human in one case.

General Conclusions.—Primary tuberculous disease of the faucial tonsils occurs much more frequently than previously recognised. Considering the frequency with which the upper deep cervical glands are infected secondarily to tuberculosis of the tonsils, there is absolute need of removal of the tonsils in all cases of tuberculous cervical adenitis. The hypertrophied faucial tonsil is the seat of primary tuberculosis, *rarely* as compared with tonsils from cases of tuberculous cervical adenitis.

Dr. SYME remarked that the results had been obtained from enucleated tonsils; previous results published were usually from tonsils removed by tonsillotomy. The proportion of cases showing tuberculous changes was much larger in tonsils examined after enucleation. No doubt the bacillus, as one would expect, worked its purpose in the quiet part of the tonsil, just as, for instance, in the quiet part of the lung—the apex.

Dr. ADAM asked what was the result of removal of the tonsils on the upper cervical glands.

Dr. TURNER said it was held by some that the majority of the cases of pulmonary tubercle owed their origin to infection through the faucial mucous membrane and cervical glands. He wondered if Dr. Mitchell had had the opportunity of investigating this point. Did he find that the lower cervical glands had become adherent to the apical pleura? This point had been investigated by more than one observer in the *post-mortem* room with a negative result. He had always had difficulty on anatomical grounds in understanding how the lung became involved directly from the cervical glandular chain. In fifty *post-mortem* examinations on children he had found no evidence to show a lymphatic spread from the tonsil to the apices of the lungs. The supraclavicular glands were rarely enlarged in children, much more rarely than in adults. In only two cases out of seventy-two of enlarged cervical glands in children were the supraclavicular glands enlarged.

Dr. NEIL MACLAY asked how Dr. Mitchell prevented contamination in his experiments.

Dr. MITCHELL said he could best reply to the various questions by briefly describing his technique. The tonsillar material was obtained by enucleation from children attending the Royal Edinburgh Sick Children's Hospital. The tonsils were placed in sterilised bottles and afterwards were thoroughly washed in several changes of distilled water. The obvious difficulty in inoculating animals with portions of tonsils was the presence of contamination organisms. Many methods were tried to get rid of these organisms before a satisfactory method was discovered. Observing in a paper by Twort to the Royal Society that he employed a 2 per cent. solution of ericolin for killing the contamination organisms in nasal scrapings from leprosy cases, Dr. Mitchell thought it would be well worth trying its effect on tonsillar tissue. This he found to be the most successful of all the methods he had tried. Portions of tonsillar tissue after thorough washing in distilled water were dropped into a test-tube half full of a 2 per cent. watery solution of ericolin and placed in the incubator at 38° C. for two hours. The tonsillar tissue was again washed in distilled water, and was then ready for being injected subcutaneously (in the inguinal region) into a guinea-pig. All experimental animals were killed after four to six weeks. It was found that the spleen and softened caseous lumbar glands were the structures that yielded the best

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growing cultures. The cultural characters, along with the virulence test in rabbits, were sufficient for the differentiation of type. Experience had shown that the rabbit could be relied upon to differentiate between the virulence of tubercle bacilli from bovine and human sources. For testing the virulence of each virus two rabbits were injected in order to preclude any possibility of doubt as to the accuracy of the primary results. The dosage employed was ·01 and ·1 mgrm. of dried culture injected intravenously, or infection with 5 to 10 mgrm. by the subcutaneous method. The *bovine* tubercle bacillus produced in rabbits within five weeks an acute generalised tuberculosis ending in death from the intravenous injection of ·01 or ·1 mgrm. of culture. With the *human* tubercle bacillus intravenously inoculated in the same doses the lesions were limited, usually confined to the lungs and kidneys, progressed slowly, were almost never generalised, and death seldom resulted. He had experienced no difficulty in classifying the cultures into bovine and human types, *i.e.* no intermediate types were present in his series. It was interesting to note in connection with these tonsil investigations that in seventy-two children with tuberculous disease of the upper deep cervical glands the bovine type of bacillus was present in sixty-five instances (90 per cent.), and the human bacillus in seven (10 per cent.). His results differed widely from those of investigators in other countries, but he believed they could be verified by a consideration of several correlative factors: (1) the almost universal practice in this country, especially in Scotland, of feeding children with unsterilised cow's milk. In his series, 84 per cent. of the children two years of age and under had been nourished from birth with unsterilised cow's milk. This he thought an important factor. (2) The very inadequate supervision of the milk supply in Edinburgh and in Scotland generally. Although the number of byres in Edinburgh had been reduced from 140 in 1900 to 76 at the present time, the number of tuberculous cows removed annually from the city byres remained practically the same. The city Veterinary Inspector had ordered on an average the removal of thirty tuberculous cows annually from the city byres, and of the thirty about ten had tuberculosis of the udder. In addition there were about 250 byres beyond the city boundary where there was practically no supervision whatever, and from which about two thirds of the city's daily milk supply came. The greater opportunities for infection of human beings by milk supplied from country byres were obvious.

PROCEEDINGS OF THE SOCIETY OF GERMAN LARYNGOLOGISTS.[1]

Stuttgart, 7th and 8th May, 1913.

Translated by THOMAS GUTHRIE.

Paralysis of the Recurrent Laryngeal Nerve in Mitral Stenosis.—Killian (Berlin).—A consideration of the topography of the heart and great vessels proves that direct compression of the left recurrent

[1] Two articles, one by Prof. Kahler, and the other by Dr. W. Albrecht, have already appeared in full in the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY. See pp. 7 and 71 of the present volume.

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nerve by a dilated auricle is quite impossible, nor in the author's opinion is the paralysis to be explained as the result of indirect pressure through the medium of the pulmonary artery. He believes that it is always due to secondary causes, of which the most frequent are affections of the lymph-glands in the neighbourhood of the bifurcation and possibly also changes in the parts about the pericardium.

Prof. KAHLER expressed the view that in some cases the paralysis was due to pressure by the left bronchus which has been found displaced and flattened against the aortic arch by the dilated auricle.

Unpleasant Events attending Irrigation of the Antrum.—Killian (Berlin).—During the last ten years the author observed quite a number of cases in which a rise of temperature occurred a few hours after exploratory puncture. In each of them this occurred as a result of the *first* washing, and the antrum contained masses of purulent material which had been present for a long period and had become more or less decomposed. It seems probable that so long as the deposit is not interfered with absorption is slight, but that any disturbance greatly favours the passage of toxic substances through the lining membrane of the cavity. A case was mentioned of sudden blindness of one eye following immediately after puncture of the corresponding antrum. The blindness was complete for about fifteen minutes, after which the sight gradually returned, and was normal on the following day. The oculist to whom the case was referred suggested as a possible cause a small embolus causing temporary obstruction of the central artery of the retina, but Killian preferred to explain the occurrence as due to reflex vascular contraction. Reflex irritation of the vagus has been observed in a number of cases taking the form of fainting, which is especially apt to occur if the lotion used for syringing be of too low a temperature. In one case this vagus reflex was so violent that sudden death took place in an otherwise healthy man as a result of a simple exploratory puncture.

(Diathermy) The Cold-cautery in the Upper Air-passages.—Albanus (Hamburg).—In this method an induced alternating current of enormous frequency and very high tension is employed, and, although the cautery point itself remains cold, coagulation of the tissues occurs to a greater or less depth. The smaller the point of the electrode the greater is the concentration of the current and the more rapid and more deep the necrosis of the tissues. Dr. Albanus has treated some 300 cases of lupus and tuberculosis of the nose and throat by this means with very encouraging results.

Fatal Meningitis, the Result of Injury to the Dura in Removing the Middle Turbinal.—Kümmel (Heidelberg).—The patient, a very strongly built engine-driver, was sent to Dr. Kümmel by another specialist who had three days previously removed the polypoid anterior end of the right middle turbinal. There was three years' history of nasal trouble and the occasional removal of polypi, and during the last year there had been some complaint of headache. Removal of the portion of turbinal was followed by a discharge of pus, and the same evening the patient was seized with very severe headache, repeated vomiting, and finally became unconscious and had remained so ever since. The symptoms were those of meningitis, and a Killian's radical frontal sinus operation was performed and the frontal lobe exposed and punctured, only blood and clear cerebrospinal fluid under pressure being removed. The patient died two

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days later without regaining consciousness. The *post-mortem* examination disclosed generalised meningitis, and, on raising the right olfactory bulb, a narrow, slit-like opening in the dura about ½ mm. long through which a sound could be passed directly into the nasal cavity. This opening was situated on the right cribriform plate opposite about the middle of the crista galli. The posterior part of the crista could be moved from side to side together with the attached portion of the bony septum; either a fracture had occurred at this point and had been accompanied by tearing of the dura, or, as appeared more probable, the bone of the cribriform plate had been gripped by a narrow conchotome and the dura cut or torn through with it. The case is reported in order to lay stress on the importance of exercising the greatest care when working in the region of the base of the middle turbinal, a definite ledge of which should always be left untouched when clearing out the ethmoid. In a disease of this nature—in itself so rarely fatal—while the treatment should be thorough it is better to do too little rather than too much. The excellent cutting instruments obtainable at the present day are apt to be dangerous weapons in the hands of the unwary, or those who have not a complete knowledge of the anatomical details of the region in which they are working.

A Note on the Diagnosis of Cancer of the Larynx.—Killian (Berlin).—A case was reported in which the clinical features were those of epithelioma affecting at first the left ventricular band in a man, aged fifty-three. Three portions, however, removed at intervals for microscopical examination were reported by competent pathologists to show benign pachydermatous changes only. Later, the growth having extended, and the affected side of the larynx become immobile, a fourth portion was removed, and pronounced somewhat doubtfully to be a carcinoma. As from a clinical standpoint there could no longer be any doubt about the matter, a complete laryngectomy was performed. A wedge-shaped piece was then cut from the margin of the growth in the excised larynx, and contrary to all expectation reported as non-malignant. Finally, a portion taken from the centre of the tumour and extending well into the neighbouring healthy tissue below it, was considered in view of certain minute details of cell structure limited to a few areas to justify a diagnosis of carcinoma. The case demonstrates the greater value in conditions of this sort of clinical observation as compared with microscopic examination.

Dysphagia in Laryngeal Tuberculosis.—Rethi (Budapest).—The author described an apparatus by means of which it is possible to exert constant pressure on the point of entry into the larynx of the superior laryngeal nerve on both sides of the neck. Pressure applied in this way, at first for two hours and later for one hour daily, gave complete relief from pain on swallowing in three cases in which dysphagia had been a very marked feature.

A Rare Cause of Difficulty in Swallowing.—Marx (Heidelberg).—One case was reported fully and another briefly mentioned in which difficulty in swallowing had persisted for some years and was found to be due to pressure on the lower part of the œsophagus by a portion of the abdominal contents. Careful examination by radiography demonstrated that the condition was one, not of diaphragmatic hernia, but of *Eventratio diaphragmatica*, in which the abdominal and thoracic organs are still separated from one another by the diaphragm, but the latter is atrophied and so greatly stretched that a part of the contents of the abdomen pass upward into the chest. The condition can only be diag-

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nosed by help of the X rays, which show that the upper limiting line of the stomach and intestine undergoes the normal respiratory displacement, that is, descends on inspiration, and rises on expiration, while in a case of diaphragmatic hernia the movements are reversed. Eventratio is much less frequent than hernia: of the former, fifteen cases have been diagnosed during life, and nine others discovered *post-mortem*, while about 500 cases of diaphragmatic hernia are on record. In only one other recorded case of eventratio was there difficulty in swallowing, while in both the author's cases this was the only symptom.

New Methods for the Direct Examination of the Larynx.—Katzenstein (Berlin).—A Whitehead's gag having been placed in position and opened, a bent spiral tube of large calibre is introduced into the larynx under guidance of the mirror. The obturator used for its introduction is then withdrawn, and in its place is passed a short straight tube, and the upper end of the spiral tube is screwed to the upper branch of the gag. The apparatus then lies firmly fixed in position and the interior of the larynx can be inspected with forehead-lamp or reflector. Another form consists of a single tube with three jointed sections at its lower end. The tube is introduced under guidance of the laryngeal mirror with the jointed portion in the form of a curve. A screw mechanism at the upper end of the tube then permits of the curved part being straightened, so as to provide a direct view of the laryngeal cavity. As in the case of the first model, the outer end of the tube is attached to the upper branch of the gag.

Abstracts.

PHARYNX.

Whale, Harold.—The Remote Results of Tonsillotomy and Tonsillectomy. "Lancet," February 15, 1913, p. 444.

An analytical scrutiny of 220 unselected cases. Discussion on tonsillotomy and tonsillectomy has hitherto centred around technique, and we do not yet know if the tonsil is a friend or an enemy. From the author's survey he concludes: (1) That tonsillotomy is disadvantageous because it may initiate an infection or the original trouble may recur. (2) That tonsillectomy is disadvantageous from risk of serious hæmorrhage, risk of later deformity, risk of later voice troubles. Tonsillectomy, however, is more likely to cure the trouble for which advice is sought. *Macleod Yearsley.*

O'Malley, J. F.—The Difficulties of Tonsillectomy and how to Deal with them. "Lancet," July 5, 1913, p. 19.

The author briefly describes his method of operating. The types of tonsil presenting difficulties are: The left tonsil in all cases; the very large tonsil; the "immobile" tonsil; the small, flat, friable tonsil; the "pulpy" tonsil. Other difficulties are—removal of the uvula, button-holing the soft palate, removal of portions of the anterior pillar, tearing of posterior pillar, removal of part of the pharyngeal aponeurosis, tearing the mucous membrane over the point where the soft palate lies in relation to the hamular process, and hæmorrhage. These are dealt with in a lucid manner, and the paper should be read *in extenso* for the method of meeting and avoiding such difficulties. *Macleod Yearsley.*

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