SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE—LARYNGOLOGICAL SECTION.

April 7, 1916.

DR. J. W. BOND, *President, in the Chair.*

THE PRESIDENT: The case which I showed at the last meeting has been examined microscopically, and is an endothelioma.[1]

Specimens from a Case of Laryngeal Crises with Abductor Paralysis.—E. D. D. Davis.[2]

Dr. P. WATSON-WILLIAMS: This is an exceedingly interesting case, made much more valuable by the research of the pathologists, which has been demonstrated. It is not clear from the notes why the man died half an hour after the performance of the tracheotomy. Was the condition so desperate, and had it been going on long enough to account for the fatal ending when relieved by the tracheotomy? I suggest it as possible that the cause of death was due to atrophic changes in the nucleus ambiguus extending to the cardio-inhibitory cells. In many of the cases of tabes involving the vocal cords, one has evidence of the extension of the atrophic process to the cardio-inhibitory nuclei, the evidence being the *persistently rapid pulse-rate during rest, and in the absence of febrile conditions* this is often a valuable differentiating symptom. There may be one vocal cord only involved, but even when both sides are paralysed (abductor paralysis)—the more common occurrence—one may be in doubt whether, in the absence of other features to clear up the diagnosis, the paralysis is not due to a bulbar lesion. Now the latter view as against peripheral pressure is much supported by the rapid pulse-rate. I think that was the case in the present patient, his pulse being persistently frequent, and that he died from cardiac failure.

Dr. F. DE HAVILLAND HALL: I had the privilege with Dr. Semon (as he then was) of seeing the first case in which this abductor paralysis was noted in association with tabes in this country, and the present case confirms the advice then given as to the extreme importance of carrying out an early tracheotomy. Dr. Felix Semon was telegraphed for, and when he arrived the patient was apparently dead. A tracheotomy was done at once and the man lived for some years afterwards. Sir Felix since then has advised that as soon as there are signs of marked interference with breathing in tabes associated with an abductor paralysis, a prophylactic tracheotomy should be done without delay. It is surprising with what a small chink for admission of air patients can manage to exist; probably because the obstruction is developed only gradually, so that the system gets inured to the cutting off of the air supply. If obstruction to the same degree were to occur suddenly, the patient would be *in extremis*.

Mr. MARK HOVELL: I understood Dr. de Havilland Hall to say that

[1] JOURN. OF LARYNGOL., RHINOL., AND OTOL., July, 1916, p. 308.
[2] See p. 361 of this issue.

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Sir Felix Semon was the first to recommend that tracheotomy should be done when bilateral abductor paralysis existed. If that statement was made, it was incorrect, for Sir Morell Mackenzie laid down that principle years before, and it is mentioned in his book which was published in 1880.

Mr. TILLEY: From a practical point of view I uphold what Dr. de Havilland Hall has said. There is a man managing a small refreshment shop near here, who eighteen years ago came into the Throat Hospital, Great Portland Street, suffering from extreme dyspnœa. He was in too serious a condition to allow of a general anæsthetic, so I inserted a tracheotomy tube without it. He is still alive. I cannot be sure what was the nature of the lesion; he had no symptoms of tabes, and we could not find any intrathoracic lesion which would interfere with the recurrent laryngeal nerves. It is easy to imagine a patient getting a sudden inflammatory lesion in both crico-arytænoid joints, and then for the inflammation to clear up, the joint being left fixed. Only last Saturday I saw an old gentleman who for five years has had bilateral abductor paralysis, and on two or three occasions he has been nearly suffocated. In his spine and other joints he has advanced arthritic conditions, and both arytænoids are fixed. He has only a small glottic aperture, and if he exerts himself he gets into a serious state of glottic dyspnœa. X-rays give us but little information, except that there is a dilatation of the aorta with a shadow, which may indicate a sacculated aneurysm. If a paralysis is bilateral, whatever the cause may be—*i. e.* whether it be a central or a peripheral lesion—immediate tracheotomy may often result in a prolongation of the patient's life.

Dr. DUNDAS GRANT: The interest here is the relation of the two symptoms described; one is the adductor spasm or crisis, the other the paralysis of abduction. There seems to be a combination of both in this case. Dr. Sano has pointed out that the lesion here is a paralysis rather than a cortical irritation. We see laryngeal crises apart from paralysis of the vocal cords, and we see paralysis of abduction without what one may strictly call a crisis. What usually happens in paralysis of the abductors is that the patient makes a howling noise during inspiration, especially during sleep. I should like to ask Dr. Sano if he can tell us what lies at the foundation of the laryngeal crisis. Apparently this man had a crisis about twice a week, and at the same time he had this paralysis of abduction. The reason patients with paralysis of abduction get on so well, comparatively speaking, without tracheotomy is that in cases in which the disease is a progressive one affecting the recurrent laryngeal nerve, there is a definite sequence in which the muscles atrophy: first the posterior crico-arytænoid, then the internal tensors—*i. e.* the internal thyro-arytænoids—then the arytænoid muscles. These atrophy before the lateral crico-arytænoids, the atrophy of which would save the situation in so far as the stridor is concerned, though it would lead to loss of voice and probably regurgitation of liquids. It is the wasting of these muscles secondarily which enables people with paralysis of abduction from a progressive lesion of the recurrent laryngeal nerve to breathe after a fashion and to decline tracheotomy.

Dr. WILLIAM HILL: I should like to know whether Dr. Sano has specimens showing the changes in the laryngeal nerves and muscles. There is a serious medico-legal question involved here. This man had a painful spasm in the muscles round the neck which might cause him suddenly to fall down dead. He refused tracheotomy, and yet went on driving his cab. If he had died suddenly while driving, his cab might

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have dashed into a shop window or have been precipitated over the Embankment. Whose duty was it to prevent him driving? Should one notify the Commissioner of Police that he was suffering from a condition which renders him liable to the accident I have mentioned?

Dr. SANO (in reply): The question here is whether there was paralysis due to hypotonicity and paralytic conditions of muscle, or whether there was irritation, causing contracture. What we found pathologically is more a proof of actual paralysis than of irritation; it is very difficult, in a microscopical preparation, to find indications of irritation. I do not find any increase of neuroglia around the cells in the section. I find only a process of atrophy and weakness. In the spasms of tabes and lateral sclerosis there are often contractures; but there are also moments when the person is too tired. What can occur in the limbs can also occur in the larynx. I have only examined one side of the problem, and I must leave Mr. E. D. D. Davis to speak for the clinical part.

Mr. E. D. D. DAVIS (in reply): The laryngeal muscles were atrophied, and the nerves were very difficult to find. I offered the muscles to Dr. Mott for microscopical examination, but time did not permit. The man promised to stop driving his cab. When he came back to hospital I did not inquire what he was doing, but I found out before he died that he was again driving his cab. He was very ill when I saw him, and by my instructions he had been given morphia and atropine some hours before. I brought him here in 1909, when many members advised tracheotomy; but Sir Felix Semon said he would wait, because the spasm of the adductor muscles might pass off and relieve the patient. With regard to heart failure after tracheotomy, his pulse was very bad: but while I was washing my hands twenty minutes afterwards, he coughed up the tube, and though I replaced it fairly quickly, he was dead. On some occasions the pulse-rate was 120.

Laryngeal Stenosis, following a Bayonet Wound, treated by Intubation.—E. D. D. Davis.—Private J——, who was wounded in the shoulder, received a second bayonet thrust in the larynx on October 13, 1914, and was taken prisoner. The lower third of the thyroid cartilage was apparently destroyed, and a German surgeon inserted a large tracheotomy tube on December 4. When seen at Millbank on March 3, 1915, he was wearing a large curved cannula inserted through the larynx with an upward extension of $\frac{3}{4}$ in. (the cannula is shown). He could neither speak nor breathe through the mouth. He had to write everything to make himself understood. At an operation on March 5, 1915, tracheotomy was performed and the thyroid cartilage was exposed. The cannula was removed, and its extension was found to be buried in scar tissue. The cavity of the larynx was discovered by passing an intubation tube from above. The alæ of the thyroid cartilage were separated by $\frac{1}{2}$ in. of scar tissue at least $\frac{1}{4}$ in. thick. A large gap, about 1 in. wide, existed between the larynx and the upper end of the trachea, in which the posterior wall of the trachea and larynx alone remained. A rubber drainage-tube was inserted from the tracheotomy opening below, to the orifice of the larynx above, and the wound closed as far as possible, with the exception of the gap produced by the old cannula. The rubber tube was replaced, later on, by the intubation tube, fixed by a midwifery forceps clip passed through the lower tracheotomy opening. The intubation tube and clip were described by Mr. Barwell in the *Lancet* on January 2, 1915 (a pattern was shown, also the various tubes used).

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The patient speaks well in a loud whisper; the intubation tube has been worn for twelve months almost continuously, and it has been removed recently, but he cannot do without a tracheotomy tube. Suggestions as to treatment are invited.

Dr. JOBSON HORNE: I ask for the experience of others in dealing with this kind of case. I have had one or two of similar nature, and they are not easy to treat. I congratulate Mr. Davis on his successful result.

Chronic Frontal Sinus Empyema treated by the Intranasal Method.—Herbert Tilley.—To save space and repetition it may be said that the following cases suffered from one or more of the usual symptoms of sinus empyema—viz. chronic purulent nasal discharge, headache or frontal discomfort, nasal obstruction, and impaired condition of general health. The treatment following operation has been practically the same in all cases—viz. no plugging of any kind after the operation, no interference for the first forty-eight hours, and then daily irrigation of the sinuses with warm normal saline containing a small quantity of peroxide of hydrogen solution. As an occasional change from this, tincture of iodine, 1 dr. to the pint of normal saline, has been used.

Mr. C. C——, aged forty-three. Examination, September 17, 1915: Nasal septum deflected to left. Polypi and purulent discharge in each ethmoidal region. Had a previous operation on right side. Operation, October 4, 1915: Intranasal opening of right frontal sinus and antrum and removal of left anterior ethmoidal cells. November 4, 1915: No discharge from any of the sinuses.

Mrs. G——, aged forty. Admitted to University College Hospital on March 1, 1916. Left-sided nasal discharge and supra-orbital pain of three years' duration existed. Examination: Pus and polypoid buds in anterior region of left middle meatus. It was only possible to pass a fine probe into the left frontal sinus. First operation, March 2: Anterior half of middle turbinal and diseased anterior ethmoidal cells removed. Free oozing was only slightly diminished by adrenalin and cocaine. A probe could be passed into the frontal sinus, but not a small raspatory. Further intervention postponed in view of bleeding, which obscured field of operation. During the following days a fine cannula could be passed, but no return of fluid could be obtained. Second operation, March 13: After many attempts, a small raspatory entered the sinus, and the frontal sinus ostium was freely enlarged. March 14: Temperature 103° F. Both eyelids swollen and œdematous; no conjunctival swelling nor ecchymosis. March 15: Slight œdema of right eyelids. Under influence of frequent fomentations and daily irrigation of left sinus the external symptoms and pyrexia subsided, and the discharge from sinus ceased.[1] The case illustrates the difficulties which may be encountered when free bleeding complicates a very narrow fronto-nasal canal.

H. C——, aged thirty-one. Admitted to University College Hospital on February 28, 1916, for frontal headache of "several years'" duration, and a "blocked nose" for the same length of time. Examination: Both nasal cavities filled with polypi bathed in pus. Both antra dark and contained pus. Operation, March 2: Polypi removed. Both antra opened by intranasal method. Ethmoidal regions curetted and sphenoidal sinuses opened. Both frontal sinus ostea were enlarged by

[1] The symptoms for which patient was admitted have now disappeared (May 16).

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exhibitor's raspatories after a lapse of forty-eight hours. Sinuses have been irrigated daily till the patient left hospital on March 29. Whenever the left sinus is irrigated the fluid returns from the right nasal cavity, showing perforation of intersinuous septum. Complication: On March 12 patient had acute lacunar tonsillitis on left side, with large and tender swelling of glands behind the angle of the jaw. March 14: Temperature 104° F. In my absence an incision was made into glands but no pus evacuated. Under influence of hot fomentations glands subsided. The patient's original symptoms have entirely disappeared. The tonsillitis set in nine to ten days after operation upon the sinuses, and it is not clear what was the relationship between the conditions, because, from the nasal point of view, the sinuses were irrigated daily (after a lapse of forty-eight hours following operation) and appeared to be exceptionally clean and well drained. It is easy to see into each sphenoidal sinus at the present time.

Mr. McL——, aged fifty. Subject to attacks of acute iritis in right eye associated with chronic discharge from, and obstruction in, right nasal cavity. Examination: Right nasal cavity filled with polypi bathed in pus. All the right sinuses proved to contain pus. Operation, October, 1915: Removal of greater part of right ethmoidal lateral mass with polypi growing therefrom; right fronto-nasal canal and osteum enlarged; inner antral wall removed (endo-nasal method). Complication: Attack of acute iritis supervened on the operation. As a result of daily irrigation of the sinuses for three weeks the discharge entirely ceased. It is too soon to determine whether the attacks of acute iritis will cease now that the sinuses have been rendered healthy.

Dr. P. Watson-Williams: I congratulate Mr. Tilley on his excellent series of cases, and it is gratifying to find these sinuses so remarkably free from secretion. But one must not take such a successful series as a criterion of all cases which are amenable to treatment by the nasal method. In a case I showed when introducing the special discussion on this subject, one in which I was able to stand by the side and pass bougies of the size I show, 19 mm. in circumference, there was most perfect freedom of drainage from the frontal sinus; yet the patient had recurrence of symptoms, and eventually I had to perform an external operation. However successful cases apparently are you cannot be certain there will not be a recurrence and further trouble: it is not merely a question of getting a free exit for discharges. When advocating the per-nasal method, we must be guarded about speaking of cure, otherwise we may have to eat our words. I was particularly interested in Mr. Tilley's case of iritis before the operation, as I recently had a similar case in a female, in whom I had to make an opening and provide for drainage of all the sinuses. She had a recurrence of iritis and acute inflammatory injection of conjunctiva shortly after the operation, and I do not doubt that the operation on the nasal sinuses determined the recrudescence of the attack. This, however, soon cleared up. I shall be glad to know what is the sequel here: it will be an interesting case to watch.

Dr. Donelan: I should like to ask whether the general experience is in favour of the continued use of peroxide of hydrogen, and whether it has been found to set up anosmia of a more or less permanent character. Also, has not the continued use of chloride of sodium a disintegrating effect on the epitheleum? It was a point made by Sir Morell Mackenzie, who substituted sulphate of sodium in his modification of Dobell's solution.

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Dr. DUNDAS GRANT: I congratulate Mr. Tilley on his interesting cases, and should be glad to know whether they are a sequence of cases or were interspersed with others in which it was necessary to do the external operation. If they are a sequence, it is a very interesting demonstration of the efficiency of the intranasal treatment, just as Mr. Tilley's former groups of cases of the external operation were convincing of the value of the external operation. I have always been even a keener advocate of the intranasal treatment than my friends and colleagues, and I am glad to find that the views I held in old days have been adopted and maintained so successfully by Mr. Tilley. I think we shall agree that there are cases in which the intranasal method is not successful, however keen we may be about it. Sometimes, when I have opened the frontal sinus, I have found it filled with polypi, or with a very soft form of œdematous fibrous tissue. In one case the contents (shown before the Section) proved to be adenoid tissue. The only possible treatment in such cases is to open the frontal sinus. After the polypoid substance has been scraped out, these cases do excellently, even without any great attempt being made to enlarge the fronto-nasal duct. The X-ray data make it possible to diagnose them, and as a rule they are accompanied by less suppuration. After studying this series, probably those who have not hitherto trusted to the intranasal operation will be led to do so. The bougies which I devised a number of years ago and showed to the Laryngological Society in January, 1906, will be found of considerable use.

Mr. W. STUART-LOW: I wish to ask Mr. Tilley whether he brings forward these cases as cured. I am opposed, on principle, to treating the frontal sinus through the nose. This should be done merely to prepare the interior of the nose. If there are polypi in the frontal sinus, this method of treatment will not cure the condition. If there are no polypi, removal of the ethmoid will probably do so. How is one to decide whether polypi are present? If they continue troublesome, you must perform Ogston's operation. I asked Dr. Watson-Williams whether he has given up these operations, and he said he probably has. Killian's operation is often unnecessary. There is deviation of the septum in two of these cases of Mr. Tilley's, and in another there is a polypoid condition on the under surface, and there is still muco-pus. It is a bad principle to pass bougies up the canal; this is not done in any other part of the body. I ask Mr. Tilley whether he is still performing intranasal operations for the cure of antral trouble. [Mr. TILLEY: "No."]

Dr. PEGLER: Polypi are often spoken of in this connection as if they were similar to the polypi found in the nasal cavity. Some years ago I made many sections of frontal sinus polypi so called, and noticed that under the microscope they proved to be quite a different class of growth from the ordinary mucous polypus. It is an important question whether, under modern treatment, it is possible for the life of this very delicate alga-like form of granulation to continue. If the cavity is freely douched with antiseptics, and especially if such active agents as nitrate of silver solutions are injected into it, I should expect these delicate growths to disappear.

Dr. DAN MCKENZIE: I take it that this operation is under trial, and it is only by seeing such cases as are shown to-day and discussing their results and the reasons for the operation that we can know for what cases this operation is supposed to be suitable. I think we have not yet found what cases should be submitted to the internal, and what to the external operation: consequently it is yet early for condemnatory re-

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marks. So far as the operative procedure is concerned, there is much to be said for it from one standpoint, and something may be urged against it from another. When it was discussed on a former occasion I expressed myself strongly about the danger to the cribriform plate likely to result from the operation. There is a further danger—namely, to the orbit. It is a very narrow canal, and it is easy to break down the papyraceous bone and to start orbital cellulitis. In the male patient I showed this took place, but, fortunately, only slightly; it did not reach the abscess stage. In cases of polypi in the sinus I do not expect the external operation to cure the patient; there is nearly always some discharge afterwards, sometimes considerable in quantity, and the external operation is more dangerous to the patient's life than the internal, which is a minor operation. In the case alluded to I operated on both antra, the septum, and both frontal sinuses at one sitting, and the whole did not occupy more than an hour. Reverting to the danger to the orbit, let me say that if the finger be kept on the outside, the instrument can be felt passing up the infundibulum to the frontal sinus, and in this way the bone may be prevented from being broken through during operation. Mr. Tilley has had difficulty with bleeding, and I suggest to him—what other members may know—that Freer, of Chicago, introduced, some years ago, instead of the tampon of adrenalin and cocaine, what he calls "cocaine mud," that is, pure cocaine hydrochlorate in pure adrenalin solution, 1 in 1000. It is extraordinarily safe: I do all my nasal septum cases with that mixture. I use 3 gr. to 4 gr. to do an operation, and I have never seen a patient suffer from it. If it be applied to any part of the nose one can easily get a blanched field, so that the operation almost invariably becomes a bloodless one. I have even opened the maxillary antrum in this way without having had any bleeding at all. I think we ought to regard the operation now being discussed as in a purely experimental stage: let us try it cautiously, and see what results it yields.

Dr. W. Hill: Has Mr. Tilley done external operations during the last two years? I have been converted to the per-nasal route.

Mr. Tilley (in reply): Dr. Watson-Williams speaks of certainty of cure not being entirely dependent on free drainage, and I agree, because I think two factors determine this point. One is free drainage, and the other is the establishment of a healthy lining mucous membrane in place of the diseased condition it is in when the operation is performed. The latter is carried out by frequent irrigation, and by injecting into the sinus very strong nitrate of silver solutions to destroy the delicate chronic inflammatory tissue to which Dr. Pegler has referred. I employ solutions from 80 gr. to 100 gr. to the ounce. Dr. Donelan raises the question of the use of hydrogen peroxide irrigations causing anosmia. I have not had experience of that, although it is conceivable, because many of the samples which are commonly used contain an admixture of acid and are irritating to sensitive mucous membranes. Dr. Dundas Grant asks as to the sequence of my cases. They are all recent cases and I do not show them as instances of cures, but hope they may prove to be so. Two are private patients and two are hospital cases; two others of longer duration could not come to-day—they were operated upon six months ago. Mr. Stuart-Low says that muco-pus is still present in all the cases. In two of them there is not a shred of mucus nor of pus. I have shown them to illustrate the complications with which we may possibly meet in the intranasal operation. One patient had great œdema of the left eyelids and a temperature of 103° F. next

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morning. In forty-eight hours the œdema had spread to the right eye, and I began to wonder whether I was going to experience my first case of osteomyelitis following the intranasal operation. But the condition passed off and to-day she has no pus in the left sinus at all. The discharge which one sees comes from the granulations on the anterior face of the remaining ethmoidal cells. Another of the patients was shown because he had tonsilitis more than a week after the operation, and a large mass of inflamed glands in his neck. The best criteria of the operation are the patients themselves, who will tell you how they feel now as compared with their condition before the operation. If you can so far relieve these patients from the symptoms from which they suffered, I do not think it matters even if a little muco-pus comes from the sinus; you have cured their symptoms so far as the patients are concerned. I have not opened the frontal sinus from the outside for chronic empyema for four years, and in ordinary cases I shall not do so without employing the intranasal method first. If the intranasal method relieves the symptoms for which the patient came to me, I should not proceed to the external operation at all, even though a small quantity of discharge from the sinus continued, because, if the drainage is free, that discharge in itself does not constitute a menace to the patient's life, and very often he may be unaware of it at all. One member suggested that these cases have scarcely been touched, and another referred to the presence of deflected septa. Two of the patients have deflected septa; but why remove a septal deflection about which the patient knows nothing and when it is causing no symptoms? When such deformity hampers an intranasal frontal sinus operation, it can always be temporarily obviated by means of a long-bladed speculum. And if you remove the septum, there will possibly be too great a draught of air going down one side, and more harm will be done by correcting the septum than by leaving it alone. I have successfully performed the internal operation for acute empyema complicated by an external fistula.

Paralysis of the Left Vocal Cord in a Woman, aged Twenty-five.—James Donelan.—Patient, a married woman, had a miscarriage at the seventh month in 1912, and another at the sixth month in 1913. She began to be somewhat hoarse in November, 1915, and this was associated with repeated attacks of violent headache. On February 8, 1916, on awaking she found she had completely lost her voice.

I believe it to be a syphilitic case. It has greatly improved during the last three weeks under iodide of potassium and mercury. The patient has recovered some voice. Her husband is syphilitic.

Achalasia of the Cardia cured by the Passage of a Gastric Tube kept in Position for Four Days.—W. M. Mollison.—E. H——, female, aged thirty-six, was admitted to hospital for inability to swallow, and vomiting. She had previously been operated upon for abdominal symptoms, for which ileo-sigmoid anastomosis and gastro-jejunostomy had been performed. Œsophagoscopy showed great dilatation of the œsophagus, which was filled with the remains of bismuth administered six days before; this was washed out. Apart from the dilatation no abnormality was found; a gastric tube was passed, through which the patient was fed for four days; she was then given semi-solids, and gradually recovered the power of swallowing ordinary food without any difficulty. There was no return of the vomiting.

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Radiogram of the Œsophagus of a case of Carcinoma which presented itself as an Achalasia.—W. M. Mollison.—J. G——, male, aged forty-nine, was admitted to Guy's Hospital in November, 1915, on account of total inability to swallow. Œsophagoscopy revealed no abnormality, and the following day the patient could swallow normally. Five weeks later he was again admitted for the same symptom, total inability to swallow, and he was now very ill and had to be helped into the ward. Again œsophagoscopy showed no lesion; a gastric tube was passed and left *in situ* for twenty-four hours; at the end of that time it was removed, and the patient swallowed perfectly well.

I quoted this case at the December meeting, and suggested then that the case might turn out to be one of malignant disease. The radiogram shows that this is so, and his doctor writes that the patient is very ill in an infirmary, dying with symptoms of malignant disease of the lower end of the œsophagus.

Tracheitis Sicca.—W. M. Mollison.—Female, aged eighteen, complains of "foul breath." She has had unpleasant yellow discharge from the nose, but this is now better; the antra have been washed out and are clear. In the trachea are to be seen greenish-black crusts; at times the patient coughs up small pieces, but finds very great difficulty in doing so. Treatment has not improved the condition; she has been given inhalations of tinct. benzoin co. in hot water; capsules of creosote (5 minims), and lastly intratracheal injections of 10 per cent. menthol in paraffin.

Suppuration in the Antrum of Highmore associated with uncommon conditions.—W. Jobson Horne.—*Case* 1: *Gunshot Wound of Face involving Right Antrum.*—The patient, aged twenty-three, is a private in the Coldstream Guards. On November 5, 1914, whilst sniping in Flanders, he was struck by a bullet in the upper lip just to the left of the middle line. The bullet shattered all the teeth in the upper jaw, ploughed up the right half of the lip and part of the cheek. On November 9, 1914, he was back in England and in hospital. The multilation of the mouth and right side of face was rectified by operations. The upper jaw was completely cleared of the remains of the teeth. In February, 1915, he left hospital and was on furlough till May 10, 1915, then returned to his regiment in England. In June, 1915, a dental plate was fitted. A purulent discharge into the mouth was experienced from the time of the injury. To prevent the discharge an operation was performed in December, 1915. After this the discharge ceased to enter the mouth but passed through the right nostril. A second dental plate was fitted in January, 1916, and he returned again to his regiment. As the purulent nasal discharge persisted the patient was sent to the Metropolitan Ear, Nose and Throat Hospital on March 8, 1916. Some puffiness of the cheek over the antrum, and above the right angle of the mouth, suggested underlying dead bone; this puffiness was partly accounted for by the soft tissues having been drawn up from the lower part of the face in order to rectify the mutilation. On the head being lowered the right nostril became filled with pus. On transillumination the right antrum was dark. An examination with the X rays detected no foreign body, but showed some loss of bone.

Operation: The antrum was opened through the canine fossa and drained through the nose and mouth. Some bare bone was detected

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beneath the puffy region referred to, but no pus external to the antrum was found. Owing to the high formation of the palate, the floor of the antrum is considerably below the level of the floor of the nose.

At the time of writing these notes the discharge is decidedly less, and has almost ceased, but suggestions for future treatment, should there be a recurrence of the purulent discharge, are invited.

Case 2.—J. E——, gunner, R.F.A., aged nineteen. He has had aphonia for three months following a cold contracted at the front. Larynx: Impaired adduction, loss of tension cords. Thorax: X-rays show infiltration of right upper pulmonary lobe. Tubercle bacilli are present in the sputum. The larynx presents an appearance not uncommonly seen in cases of aphonia invalided from the front, and at times spoken of as "functional."

Dr. DAN MCKENZIE: In the first case the patient may be suffering from osteomyelitis, and I suggest that Dr. Horne should keep his eye upon it for the next six months, in the event of there being a recurrence. I have seen, on two occasions, fatal osteomyelitis begin in the antrum, and with such symptoms as are mentioned in these notes, puffiness over the cheek and angle of the mouth. This is remedied for the time being by removing the dead bone, but the symptoms are very apt to recur.

Intrinsic Cancer of the Larynx.—Case to show certain indications in regard to Laryngo-fissure and Complete Excision of the Larynx.—Sir StClair Thomson.—W. S——, aged fifty-six, admitted to King's College Hospital on January 27, 1916, for hoarseness of voice.

Previous history: Hoarse for one year; recent dyspnœa, no dysphagia, slight cough.

Present condition: Voice very husky, and stridor even when at rest. Glottis reduced to a chink. The left vocal cord is quite fixed in the middle line with grey-yellow ulcerating infiltration from the vocal process up and into the epiglottis. Low down in the anterior commissure is a red granulation, which suggests perichondritis of the thyroid cartilage. The right vocal cord moves feebly; it is replaced by an irregular cauliflower-like, pale reddish infiltration. The anterior commissure appears involved. The arytænoids are free. There are no glands. Patient has good teeth; non-smoker for thirty-three years; Wassermann's reaction negative. Tubercle bacilli absent from sputum.

February 3: Portion of growth removed by indirect method with the Mackenzie forceps and found to be a squamous-celled carcinoma.

February 12: A median tracheotomy was done under local analgesia and a Durham's tube inserted. The trachea was laid bare on each side and packed with iodoform ribbon gauze. This packing was done with the object of exciting granulations and so anchoring the trachea to the cellular and muscular tissue of the neck. The idea was taken from the article of G. W. Crile.[1]

March 2: Operation commenced for complete excision of the larynx. Middle line of neck infiltrated with 2 per cent. novocain, with a few drops of adrenalin. Chloroform was given. The first incision revealed just above the thyro-hyoid membrane a gland, about the size of a large haricot bean. This at once showed that the growth was no longer intrinsic. On removing the exposed gland there was an escape of some thirty drops of pus, and with a probe it was found that the thyroid cartilage had been invaded. The operation was therefore abandoned.

[1] *Laryngoscope*, 1912, xxii, No. 12, p. 1317.

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The case is shown for the following reasons:

(1) Long-standing hoarseness and extensive disease in the endo-larynx, without any visible extrinsic developments.

(2) Involvement of both cords.

(3) Marked extension of the disease to the anterior commissure (it is generally taught that malignant disease affects the posterior commissure by preference).

(4) The suggestion of perichondritis, given by the granulation, in the anterior commissure.

(5) The gland on the crico-thyroid membrane is the first involved.

(6) The involvement and perichondritis of the thyroid cartilage may only be revealed at operation. (I had a similar case a good many years ago, and fortunately am able to show a coloured drawing of it.)

(7) The plan for anchoring the trachea—by packing round it, for between two and three weeks—promised to be most satisfactory, and I should employ it another time to prevent the retraction of the divided trachea into the chest.

A section of the small gland from the cricoid membrane is shown.

The PRESIDENT: Apparently a laryngo-fissure failed to secure a satisfactory result, and a very extensive laryngectomy was not decided on.

Epithelioma of the Palate.—W. Stuart-Low.—This case was shown at the last meeting.[1] Since then the induration around the ulcer has increased. There is much more pain on swallowing, and the deep glands at the angle of the jaw have become harder.

Malignant Disease treated by Diathermy.—J. W. Bond (President).—The patient is a man, aged seventy, who underwent diathermy. He had two sittings, one in October and one in November last year. There was a four months' history; and, when first operated upon, a large ulcerating mass affected the tonsillar region, encroaching upon the palate, passing down to the angle between the tongue and tonsil, and a little way on the tongue itself. For five months following the two sittings he has been very comfortable. Before the first diathermy treatment he was in a most miserable condition; he was pale, wasted, and found it very difficult to take food. He still has some pain in the ear, and I do not think the case can be considered cured. I recommend diathermy in cases of this kind. It seems to give more relief in inoperable cases than any other method.

Dr. WATSON-WILLIAMS: I hope, Sir, you will give a full description of the condition before the operation, because the results seem to be so gratifying that I imagine you were perhaps surprised at it. Is it not possible that the pain the patient now has is due to cicatricial contraction? He complains of a difficulty in opening his mouth.

Dr. DUNDAS GRANT: It is a most gratifying result. Was it microscopically proved to be epithelioma?

Mr. ROSE: I have treated a number of these cases by diathermy, and in some of them the neck has been much swollen for a week or ten days afterwards. I have noticed that in patients who turn up two years after the original diathermy with evidence of recurrence, an almost normal epithelium may cover extensive disease. I am therefore convinced that after diathermy epithelium grows over tissue which still contains malignant cells.

Dr. DAN MCKENZIE: I ask if members have had experience of the

[1] See JOURN. OF LARYNGOL., RHINOL., AND OTOL., July, 1916, p. 303.

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use of diathermy in sarcoma, as opposed to carcinoma or epithelioma of the throat; if so, whether the results are different? Also, would it be better, in recurrence of sarcoma, to use radium rather than diathermy?

Mr. Rose (in reply to Dr. McKenzie): I have used diathermy once for sarcoma, but without knowing it. The growth was a melanotic sarcoma in the hard palate. I hope to show the patient to the Section.

The President (in reply): The case has not been proved to be epithelioma. The application lasted ten minutes each time. I operated upon two men in this way on the same day. The other patient was aged seventy-four, and he has done equally well. It was a similar case, the disease being situated on the same side of the throat. The patient I showed was worse than the other one for two days after operation. There was a little swelling, but nothing to cause alarm. At the first sitting I made a circuit of the area in eight places. At the second operation, instead of burning definite spots, the instrument was slid along in a circle round the growth, and the diathermy done with a smooth surface, not a point.

Retro-pharyngeal Abscess due to Breaking Down of a Tubercular Gland.—Irwin Moore.—The patient is a female, aged twenty-five, who was admitted to hospital on February 24, complaining of a swelling in the mouth for one month, accompanied by soreness at night and some difficulty in swallowing. She was said to have swallowed a fish-bone about fourteen days before the swelling was noticed. There has been no febrile disturbance. She is married and has one child, aged three, who has recently been operated upon for tubercular glands in the neck.

On examination a well-marked and prominent swelling was seen occupying the right half of the pharynx and extending for some distance downwards to about the level of the upper part of the larynx. On palpation it was found to be boggy and semi-fluctuating, with a thickened wall. The tonsils were broad and contained open crypts. Some enlarged cervical glands could be felt on each side of the neck along the posterior border of the sternomastoids. A diagram showed no indication of caries of the spine.

On March 13 operation had to be postponed on account of an acute attack of follicular tonsillitis. A week later the abscess was opened by dissection from the posterior border of the right sternomastoid; about ½ oz. of pus was evacuated and a drainage-tube inserted. Some tubercular-looking glands were also removed from the side of the neck. Examination of the pus showed that it was of a caseous rather than purulent nature—*i. e.* it did not contain pus cells. No bacteria were found in a Gram-stained film, and none grew in culture. In view of this result a film was stained for tubercle bacilli, and these were found to be present in extremely small numbers. "Examination of the glands displayed the typical histological structure of a tuberculous lesion." (Report from Dr. Eastes' Laboratory of Pathology.)

Since the operation a fortnight ago the patient has been suffering from paresis of the right sympathetic, manifested by the following symptoms: pseudo-ptosis, enophthalmos, and contracted pupil. There has been free discharge from the abscess, but this has considerably lessened during the past three days, and the swelling in the pharynx has greatly decreased.

Dr. George Thompson kindly saw this case with me yesterday, and considers that the paresis will probably gradually clear up.

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The case is shown for the purpose of ascertaining the opinion of members as to whether in these cases, independent of spinal caries, the abscess should be opened through the mouth or by the external route.

The PRESIDENT: Many cases are properly opened at the side of the neck, but in young children there is no occasion, when the abscess seems to be pointing in the pharynx, to open it in the side of the neck. It is easy to put the child on its side and open the abscess, allowing the pus to flow quickly to the front of the mouth. I remember being fetched, one night, some miles to do tracheotomy on a child, and found it in this condition. By the use of sinus forceps the abscess was evacuated with extreme ease by putting the child on its side for a time, and rolling it forward on its face as soon as the pus came. Where there is no urgency and it is not pointing in the front, it is well to open from the side.

Mr. CLAYTON FOX: I should like to ask whether this is really a retro-pharyngeal abscess. Retro-pharyngeal abscesses usually arise either from tubercular disease of the retro-pharyngeal lymphatic glands or spine. These glands atrophy by the fourth year of age. In this instance the patient's age is twenty-five. May it therefore not have been a latero-pharyngeal abscess, which pointed in the pharynx?

Dr. DAN MCKENZIE: The question asked by Mr. Fox is important, because it raises the further question of treatment. In acute retro-pharyngeal abscess I think opening through the mouth is perfectly satisfactory: there is no need to operate through the side of the neck. But in lateral pharyngeal abscess in the deep cervical glands, the pus may track along until it finds its way out, and such an abscess can be opened from outside. When there is bone disease the abscess should be opened in a position where it can be kept aseptic; thus, when there is bone disease, the abscess should not be opened through the mouth. But in tuberculosis of the retro-pharyngeal glands the operation can be safely and easily performed through the mouth, the abscess being opened and curetted. I showed cases of this kind before the Section a few years ago.

Dr. DUNDAS GRANT: I have seen retro-pharyngeal abscess in two adults opened through the mouth, with excellent results. These abscesses, which are not common in adults, were not due to vertebral disease; they seemed to have arisen from exposure to cold.

Dr. IRWIN MOORE (replying to Mr. Fox): There were two or three glands in the neck along the posterior border of the sternomastoid which I removed, and they were tubercular. It is possible that the abscess is secondary to infection of a deep cervical gland.[1]

Syphilitic Disease of the Larynx.—Irwin Moore.—H. L——, female, aged thirty-eight, shown at the December meeting as a case of doubtful malignant disease of the arytæno-epiglottic fold and ventricular region of the left side of larynx—now found to be syphilitic.

A short history of the case is described in the *Proceedings* of this Section for January, 1916.[2] The left vocal cord was almost entirely concealed by a smooth round swelling of the arytænoid epiglottic fold and

[1] On May 7, *i.e.* seven weeks following the operation—all discharge had ceased, the swelling in the pharynx had disappeared, and the external wound in the neck had closed. The paresis of the sympathetic (pseudo-ptosis, etc.), though somewhat better, has not yet cleared up.

[2] See JOURN. OF LARYNGOL., RHINOL., AND OTOL., April, 1916, p. 148.

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ventricular band. There were complete paresis of the left vocal cord and fixation of the arytænoid, with marked hoarseness, difficulty in swallowing, and considerable pain on palpation of the larynx, due to perichondritis. The patient had lost 2 st. in ten months. Some opinions were expressed that the case was malignant, whilst others thought that it was tubercular. As the patient's condition remained *in statu quo* for two months and did not respond to treatment with potassium iodide and mercury, Mr. Wilfred Trotter was asked early in January to see the case, and he expressed his opinion as somewhat in favour of malignant disease.

A portion of the growth was removed on January 11; microscopical examination revealed some inflammatory reaction just beneath the surface epithelium, superficial to the numerous glands, and Dr. Eastes' report stated that it was non-malignant.

At the end of February the patient was admitted to hospital with well-marked stridor due to increasing swelling of the growth. A tracheotomy was therefore performed under local analgesia. At the operation the thyroid isthmus was found to be fibrous and firmly attached to the trachea. It was separated with difficulty and divided; the left lobe was also fibrous and found to contain a caseated cyst which had the appearance of a broken-down tubercular nodule. There has been no variation in temperature. The chest was thoroughly examined, but no physical signs suggesting tuberculosis were found. The sputum was slightly purulent, but no typical bacilli were found in it. The blood, however, gave a positive reaction to the Wassermann test.

On March 22, 10 c.c. galyl (25 cgr. strength) were injected into the right median basilic vein. The three following days the patient complained of muscular pains in the right forearm, neck, scalp, and back of the eye with some dimness of vision, and these symptoms still continue. Dr. George Thompson kindly examined the patient yesterday, and reports that the optic discs were quite normal, and that the condition must be attributed to a toxæmia affecting the muscles of accommodation, probably not in any way connected with the galyl. With these exceptions the patient has improved daily. All pain on palpation of the larynx has disappeared. The swelling in the larynx has become considerably reduced, more of the left vocal cord can be seen, and the hoarseness is much less marked, though the cord is still immobile.

The case is of interest in showing the difficulties in diagnosis which such affections of the larynx may present.

Postscript.—In view of the marked benefit derived from the galyl injection, a further dose of 10 c.c. (25 cgr. strength) was given a month later, *i. e.* on May 14. This was followed by a severe and alarming attack of arsenical poisoning from which the patient only slowly recovered. Marked improvement in the larynx followed the second injection, and the patient has been able to breathe through the natural passage with her tracheotomy tube corked, since May 23. The swelling in the larynx, though reduced sufficiently to allow full exposure of the left vocal cord, still narrows the glottis to some extent, and the cord is still fixed. Patient has therefore been advised to retain the tube a few weeks longer for safety, while treatment with Ki. and Hg. is being carried on.

(?) **Nervous or Functional Aphonia.—L. H. Pegler.**—Patient, a soldier, aged thirty-nine, lost his voice for about sixteen days, fifteen months ago; it returned spontaneously, and he retained it till nine weeks ago. He has served in Africa and India, but not in the present war, and as a home service man he was on garrison duty at Stratford Camp when

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his voice left him again. On admission to hospital he had a cough, a feeling of tightness in the throat, and a good deal of nasal obstruction owing to a very marked deflection of the septum with an ascending spur in the left fossa; there was also much chronic rhinitis with sticky secretion. The fossa are clear now, after submucous septal resection and reduction of the right inferior turbinal. The vocal cords have the appearance common in chronic laryngitis of long standing, being reddish, rounded, and rough on the surface; there is some asymmetry of the two cords and arytænoids, and thickening of the interarytænoid space.

When the man is asked to phonate, the cords hesitate in adduction and fail to approximate fully, a bowed interval sometimes intervening, while at others the glottis assumes some other shape; in fact, it varies at different sittings, but there is always a sudden occlusion of view through the closing down of the epiglottis with a kind of snapping action. The voice has improved a little at times, but the cough is always phonic. The physician in charge reports absence of chest signs, tubercle bacilli, or temperature; he has not thought the Wassermann test necessary.

The PRESIDENT: In this case the cords seem to be at different levels and of different widths, and there is a little thickening of the brim. I doubt whether it is nervous aphonia.

Dr. JOBSON HORNE: This makes an interesting addition to the series of cases we have seen during the war, which have been labelled functional or nervous aphonia without the cause having been ascertained. In this case I agree with the President that the condition does not suggest nervous aphonia; it has the appearance of laryngitis, because the arytænoids are swollen and the cords reddened and fleshy-looking. I think the condition is due to the man's work; he has been guarding the worst-ventilated tunnel on the South-Eastern Railway; after a train has passed through, the suffocating fumes irritate his larynx. The appearance is like that seen in men who have been "gassed" at the front. If he has complete rest of the voice I think he will make a good recovery.

Dr. DUNDAS GRANT: There is here sufficient laryngitis to cause slight hoarseness, but not loss of voice, and anything beyond the hoarseness I think is due to a functional condition. He has not been exposed to shell shock, and probably does not wish to be. There is a disturbance of the cortical centre for phonation to such extent that there is an interruption to the transmission of stimuli. In the case of aphonia which Dr. Jobson Horne brought, the aphonia had disappeared by the time we examined him.

Mr. CLAYTON FOX: I made out that there was decided thickening of the arytænoids, especially the left. With regard to the dysphonia, the swelling of the mucosa and involvement of the muscles are sufficient to account for his difficulty in phonation. He admits that he sweats at night, and I am suspicious of tubercle. I should like to know whether the Wassermann reaction has been taken, and think his sputum ought to be frequently examined. The chronic laryngitis can in great measure be accounted for by long-standing nasal obstruction.

Dr. PEGLER (in reply): I have noted the difference in appearance of the cords and the slight asymmetry of other features of the larynx just mentioned by the President. As regards Dr. Jobson Horne's point about the presumed ill-effects of the tunnel fumes on this patient it was the former attack that followed exposure to this agent when the voice both left and returned suddenly. I admit the degree of chronic laryn-

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gitis still present, but the dysphonia and some of the vagaries of the functional type are superadded. I may say that two of our best authorities, who have left the meeting, regarded the case as one of typical functional aphonia, but Dr. Douglas Grant's lucid observations upon it so completely embody my own views that I need only refer to what he has said for a just expression of them.

Abstracts.

PHARYNX.

Stout, P. Samuel.—Papilloma of the Uvula.—"Laryngoscope," 1915, p. 88.

Female, aged fourteen (coloured), noticed five months ago that something went down her throat when she swallowed and came up again when she hawked, coughed, or gagged. It did not seem to interfere much with talking or eating, but of late when she coughed it up it would fly out and strike her front teeth, and at times even came out between her teeth. Examination showed a mass hanging to the end of a very long uvula. The mass was as large as an almond. It was removed under local anæsthesia, and had not recurred at the end of one year.

J. S. Fraser.

Goldstein, Max A.—Angioma of the Uvula.—"Laryngoscope," 1915, p. 90.

Female, aged twenty-five, about eight years ago felt a roughness of the throat near the base of the tongue. Later there was difficulty in nasal respiration. Three years ago deglutition became impaired. Examination showed a tumour of the uvula of sufficient size to impair speech and to cause frequent regurgitation of fluid through the nose, and to excite a more or less constant short cough. The uvula was enlarged, tortuous, and mottled blue-red. The most pronounced varicosities were at the tip, but they also extended into the soft palate. On palpation the tumour was indurated and nodular. It was successfully removed under local anæsthesia.

Operation.—A widely curved uterine hæmostat, the distal end of which was shaped something like a pot-hook, was clamped well above the upper tortuous vessels. A large aneurysm needle, threaded with strong silk, was passed from behind through the palate and two ligatures firmly tied on either side, the outer curve of the clamp forceps preventing the slipping of the ligatures. With a bistoury curved on the flat the tumour was removed, using the lower curved edge of the clamp as a guide. The clamp was left in position for several hours, and the sutures were only removed on the third day. There was absolutely no deformity of the soft palate after the operation, and no recurrence after five years. Speech was perfectly normal.

J. S. Fraser.

NOSE.

Gundelach, C. Armin.—Posterior Nasal Operation by means of the Naso-Pharyngoscope. "Laryngoscope," 1915, p. 83.

Examination of the posterior region of the nose with the pharyngoscope gives us a comprehensive idea of our intranasal surgical technique.

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