tension. On gently pressing back the cerebellum, one or two beads of pus exuded from a fistula of the cerebellum in the depths of the operation cavity. The abscess was evacuated by sinus forceps and then drained through a rubber tube.

The patient did very well till the evening of 4th April, when the temperature suddenly rose to 102° and the pulse to 128. There was some vomiting and violent frontal headache. On 6th April temperature was 101° and pulse 152. Vomiting continued and a second operation was performed on that day. The wound was opened up and the temporo-sphenoidal lobe explored, but nothing was found; there was no sign of any collection of pus outside the brain. Patient died on the following day and permission for post-mortem examination could not be obtained.

SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

May 3rd, 1924

President—Mr Sydney Scott, M.S.

Aural Surgery at a Fever Hospital—F. Brayshaw Gilhespy, L.R.C.P., M.R.C.S.—(Published *in extenso* in the *Journal of Laryngology and Otology*, November 1924, p. 605.)

Discussion.

Dr Kerr Love said that a week ago he attended, at Newcastle-upon-Tyne, a meeting of fever hospital superintendents, who discussed aural complications in scarlet fever. The impression he received was that if one looked round the medical profession for men who knew nothing about scarlet fever, they would be found among otologists; and that if a group of men were wanted who knew nothing of otology, they would be seen to exist among medical superintendents of fever hospitals. But now a new group was arising who might be termed "zymotic otologists," who would throw light on the subject of this paper. There seemed to be a certain amount of suspicion between the superintendent and the otologist, but each had much to teach the other. Otologists seldom saw scarlet fever cases in the acute stage, and superintendents of fever hospitals seldom saw the end-results of suppurative otitis due to scarlet fever, for they occurred years afterwards.

The conclusion seemed to be that no case of aural suppuration in scarlet fever or measles should be allowed to leave the hospital until dis-

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charge had ceased, even if a mastoid operation were needed, which was seldom a radical operation, unless in cases in which there had been suppuration before admission to the hospital. According to views expressed at Newcastle paracentesis was seldom necessary.

He (the speaker) had long been familiar with one class of case arising as a result of scarlet fever, namely, that in which there was total deafness though no suppuration had occurred in the middle ear of either side. The case might be due to meningitis or labyrinthitis occurring in acute scarlet fever or acute measles. The deaf and dumb schools contained many children whose deafness was due to scarlet fever or measles, in which suppuration had never occurred.

The cases without suppuration required further study, and he hoped members of the Section would use their influence, not only in increasing the number of these appointments in infectious disease hospitals, but also in furthering the care of the children who had been made deaf by zymotic disease. Mr Gilhespy's paper was very suggestive.

Mr J. F. O'MALLEY said he had long felt that the question of otological treatment of cases in fever hospitals was one which should be taken up and urged by the Section and the specialty. The benefits resulting from the appointment of otologists were already beginning to be in evidence.

Had the author made observations as to the incidence of middle-ear suppuration in relation to the total number of scarlet fever admissions? Dr Caiger, who was not an otologist, had stated the proportions to be 15 per cent., but it was desirable that the subject should be re-investigated by otologists. Dr Caiger showed that the incidence was greatest in patients from three or four to ten years of age, and this had led him (the speaker) to the view that adenoids constituted a large factor in the production of middle-ear infection, and with that view Mr Gilhespy had agreed.

Sir JAMES DUNDAS-GRANT referred to the author's statement that in a number of cases adenoids were removed and the tonsils left. There was, he (Sir James) said, much to be said for this, and he would like to hear what were the comparative results. Also, would those with experience on the point state what was the earliest stage, in a case of scarlet fever, when it was practicable to remove adenoids. He had seen several cases of acute suppuration of the middle ear—not scarlatinal—in which the condition hung fire until he removed the adenoids, and from that moment improvement took place. In one of the County schools with 1,000 pupils, 99 were reported to have large tonsils and adenoids. There was an outbreak of scarlet fever, and the incidence among those with unoperated enlarged tonsils and adenoids was 1 in 12, and among others only 1 in 28. Of those who had previously had adenoids and tonsils removed, not one took scarlet fever. Recent statistics showed that in those who had no adenoids the disease had been of a mild type. The shock from removal of tonsils was much greater than that from removal of adenoids.

Mr H. V. FORSTER asked whether any attempt was made in cases of scarlet fever, measles, and diphtheria to apply local treatment to the nose or throat, *i.e.*, in all cases, not only in those who developed ear trouble. A nurse of experience from a fever hospital once remarked to him how

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frequently otorrhœa occurred in her ward where routine nasal lavage was employed for children. It was agreed that lavage and forceful spraying were risky in children, as ear disease was liable to occur.

The point brought out by Sir James Dundas-Grant concerning operation on the tonsils and adenoids in ear trouble was very interesting. He (the speaker) had been called upon to start a children's school clinic for ear, nose, and throat troubles in a certain area near Liverpool, and he had operated on 1000 cases of adenoid, or tonsil and adenoid, trouble, since August 1919. He acted on the principle mentioned by Dr Kerr Love in his book, concerning the Glasgow clinics, that in children one should, if possible, spare the tonsil; with that he agreed partly, because the removal of the tonsil was a major operation—the adenoid operation was a minor one. He asked whether the condition of the tonsil had much influence on aural disease.

Dr ALBERT A. GRAY said that Dr W. T. Gardiner, in Edinburgh, had taken up the subject of operating on tonsils and adenoids in cases of scarlet fever.

Mr H. J. BANKS-DAVIS referred to a case in which he performed a rapid mastoid operation on one side in a child with scarlatina. As the adenoids were large, he felt it his duty on principle to remove them. The child went on all right for a fortnight, then developed acute mastoid trouble in the other ear; the parents refused a further operation and the boy died of meningitis. If he did a mastoid operation on a child he usually removed adenoids, but he left the tonsils alone. The raw area left after removing adenoids was considerable, and this should be borne in mind; if the tonsils were removed as well, it was a more serious matter for the patient.

Dr P. WATSON-WILLIAMS asked whether in these cases it was Mr Gilhespy's practice to advise prophylactic measures, such as an antiseptic spray. There was good reason for hesitating to use douches, and hence many years ago in place of fine sprays he devised the coarse spray, which Messrs Rodgers made and brought out.

Though he had never had charge of a fever hospital, nevertheless he used to have many cases of the kind under discussion, and as a routine practice he used an antiseptic in a coarse spray, and would now advocate such an antiseptic as collosol argentum, to prevent the gradually increasing infection which overwhelmed the lympoid tissue of the adenoids or tonsils or passed up the Eustachian tubes, where it became less under control.

He was interested in the conservatism of many colleagues with regard to tonsil removal, as it was not only in scarlet fever and measles that the tonsils should often be spared, at least when but moderately infected. To open up a large area which had very free lymphatic and vascular communications, by removal of the tonsil would, he felt, tend to increase the danger to the patient. Would Mr Gilhespy say how he differentiated between the cases in which he spared the tonsil, and those in which he removed the tonsils with the adenoids? The size of the adenoid hypertrophy had nothing to do with the degree of infectivity of the lymphoid tissue: often very small adenoids caused much more mischief than those greatly hypertrophied.

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Dr KERR LOVE (in reply to Sir James Dundas-Grant) said he did not know the number of scarlet fever cases occurring in hospitals for infectious diseases. In schools for the deaf and dumb, out of fifty cases of acquired total deafness, twenty were probably due to meningitis which had not been associated with any other infectious disease, and twenty others were put down to scarlet fever and measles. Nearly all of them had sound tympanic membranes. He thought there was a metastatic labyrinthitis or meningitis.

Mr MUSGRAVE WOODMAN asked what means the author had of dealing with impetigo in relation to ear disease and mastoid work. He himself had one case which impressed on him the danger. A boy had a radical mastoid operation done for severe ear disease, and went out with a healthy granulating ear. His family had impetigo, and he contracted it, and infected his ear with it; a fortnight later the ear was full of impetigo. He scraped and cleaned it out, but the case was a failure.

As to whether tonsils as well as adenoids should be removed, there were points both for and against the procedure. If the mastoid had been involved and had to be dealt with, the adenoid operation was sufficient for the patient at the moment. It seemed to help mastoid results to remove adenoids at the same time, because it depleted the tissues and opened the Eustachian tube, and the discharge ceased more quickly than if the operation were omitted. On the other hand, in nearly all these cases the tonsils were simultaneously diseased, and the lymphoid tissue had very little power of regeneration and healing; and it was questionable, therefore, whether many tonsils once severely infected ever completely healed and became healthy again.

In many of these cases there was enlargement of the cervical glands, and the quickest way to remedy this was to remove the tonsils. Recently, he had seen two cases of enlarged glands in the neck with a recommendation from the doctor that they should be excised. He (the speaker) was not sure that they were tuberculous, but they were septic. He removed the tonsils first, being prepared to remove the glands if necessary. In both cases enlargement of the glands completely disappeared in ten days after removal of the tonsils, though previously treatment of the tonsils had failed to influence the glands.

Many of these cases were Klebs-Loeffler bacillus carriers, and often the best way to clear away the nidus was to remove the tonsils. Each case, however, must be judged upon its merits. If the child was very ill, the tonsils should be left, but in most cases the best course was to remove them at the same time.

Mr GILHEPSY (in reply) said that what he had heard in the discussion would be of help to him in the future.

In answer to Sir James Dundas-Grant, he said that he only operated after the fourth week of scarlet fever; he did not think it was necessary to do so sooner, as the mastoid trouble had not developed. Delay before operation did not seem to influence the time at which the discharge would cease. In certain cases the discharge had been going on some time before the adenoids were removed, but it ceased immediately on the operation being done. He would not operate in a scarlet fever case when the whole naso-pharynx was intensely congested. He could not say when a tonsil was

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diseased. He thought that once the tonsils had been involved in an attack of scarlet fever, their structure became much altered, so that at some time they ought to be removed.

He believed that 7·6 per cent. of scarlet fever cases with otitis media was the correct proportion. Coarse spraying of the nose was not allowed by the superintendent of the institution in which he worked ; the nose was generally wiped out with cotton wool on which some antiseptic was placed.

Case of Labyrinthine Vertigo due to Sphenoidal and Ethmoidal Sinusitis—P. WATSON-WILLIAMS, M.D.—Male, aged 45, since the age of 20 had been subject to attacks of vertigo about twice yearly. He would wake up in the night with a sudden vertigo, and vomit ; pulse was feeble. His doctor for a time suspected *petit mal.*

In August 1922, the attacks, which had become gradually more pronounced, became very severe both at night and in daytime. He would feel as if it hurtled through space, upwards and round and round, unable to stand; sometimes there followed vomiting, faintness, with objects moving clockwise; duration of symptoms usually two or three hours, with giddiness lasting twelve to eighteen hours. He had to avoid riding on tram-cars, driving his car for fear of sudden attack, and even he dared not walk without help.

November: Hears watch, right $\frac{2}{40}$, left $\frac{6}{40}$.

T.F.C. 1. Right, air − 5″ better than bone − 7″. $A^{-5''} > B^{-7''}$.
Left, air normal better than bone − 4″. $A^{=0''} > B^{-4''}$.

Caloric test cold: Right, onset 1′ 25″; nystagmus lasted 3′ 15″. Left, no response in 1½ minutes.

13th November—Operation: right sphenoidal sinus and posterior ethmoid cells freely opened; left sphenoidal sinus, small opening for drainage. Culture of aspirated contents of sinuses showed *Staphylococcus aureus* in both sphenoidal sinuses and post-ethmoidal cells and the antra sterile.

17th November—No more vertigo till to-day, slight atttack, and no more attacks until

November 25: Rather severe attack in waiting-room, lasted two and a half hours, spontaneous nystagmus vertical and to left.

Up to 8th December: Four more relatively slight attacks, but very greatly relieved, and remained so until

4th July 1923, when he had seven attacks, and another on 8th July.

9th July—Sinuses explored. Antra both sterile. Sphenoidal sinuses right and left contained streptococci. Left posterior ethmoid cell sterile: Right posterior ethmoid cell contained streptococci.

Right sphenoidal sinus and right posterior ethmoid cell again opened: since the operation no vertiginous attacks, but frequently

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marked tinnitus right ear, and he has several times been poorly with stiffness in neck. He captains the village cricket team, drives a motor, gets up at 4 A.M., bakes, and conducts his business.

January 1924—Caloric cold. Right optm. onset 10″ lasted 1′ 45″.
Left optm. onset 42″ lasted 1′ 30″.

Additional Notes.—At age of 14 had concussion from blow. About the year 1912, quickly lost sight of left eye and could only see a mist, and was hemianalgesic; hand and leg seen by Mr Beaumont (Bath), went to St George's Hospital under Mr James, Mr Harold Barwell, and Dr Collier for the ocular, neural, and nasal symptoms respectively.

November 1922—Mr Cyril Walker reported: Left optic disc pale? due to old retro-ocular neuritis in 1912. Has good colour vision and normal fields.

The vertigo appears to have been due to hypersensitive labyrinth of toxic origin, occasional for many years, becoming severe until the corresponding infected right sphenoidal and ethmoidal sinuses were opened and drained; the sinusitis has not recurred for eight months at least, *i.e.*, since the operation, July 1923.

Dr P. WATSON-WILLIAMS said he had been asked privately why, at the first operation, he opened up the sphenoidal and ethmoidal cells. The reason was that previously he did an exploration. He found *Staphylococcus aureus* in both the sphenoidal sinus and in the ethmoidal cells. He did not expect the results regarding the vertigo which occurred. The man could now go anywhere, and conduct his business, and drive a motor at a good pace.

Sir JAMES DUNDAS-GRANT said that the possibility of labyrinthitis ought to be remembered. The patient seemed to have had a vascular lesion in the right labyrinth, possibly it might be a toxic condition. The cold caloric test took longer than normal to become evident on the right side, and it was difficult to reconcile this with Dr Watson-Williams' view of the vertigo as due to hypersensitiveness of the labyrinth.

Mr A. R. TWEEDIE agreed that the case was of great interest, but the notes given made it somewhat of a jig-saw puzzle. He could not reconcile the statements that, in August 1922, the patient had a functionless peripheral sense organ in connection with the left vestibular nerve, while it was rather more sensitive than the other side in January 1924. There was a hypersensitive condition suggested on the right side, but the apparent movement of objects was clockwise, whereas one would have expected it to have been counter-clockwise. He asked whether the man had a definite falling reaction corresponding with the vertigo and nystagmus. When seen to-day, the man had a transitory nystagmus to the right, of the third degree. He could not suggest a connection between the condition of the nose and ear, other than by way of the Eustachian tube, but in the report there was no statement of the condition of the Eustachian tube on auscultation, and the result of inflation on the hearing, etc. There might,

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of course, have been some general disturbance from ethmoidal disease, and the cure of that might have cured the vertigo; in the same way as one could make vertigo better by curing general anæmia or dyspepsia.

In the description of the cold caloric test, the number of cubic centimetres of water used, and the temperature were not stated, nor what latent period was allowed to elapse before noting the onset of nystagmus; the duration of the resulting nystagmus was not given. Was the galvanic test used?

Dr. P. WATSON-WILLIAMS (in reply) agreed that one could not reconcile the facts observed with the usual results of the caloric test. He was not suggesting that this was a case of labyrinthitis, but he felt warranted in believing the labyrinth condition to be due to a toxic condition of the sphenoidal sinus or the posterior ethmoidal cell, from which a variable sensitiveness of the labyrinth was induced. He did not know why the condition described was present in 1922. No galvanic test was applied, and the falling reaction was not noted. The man's symptoms were strongly indicative of pseudo-Ménière symptoms, and he was apparently cured on opening up the posterior ethmoidal cell and the sphenoidal sinus of the corresponding side. True, in 1921, he had deafness and pain on both sides and he had some catarrhal deafness on both sides, although catheterisation was done. The fact that the right ear did not improve from this, though the left ear did, he attributed to nerve deafness on the right side. The left eye remained as it was in 1912. He had never seen a case in which the patient was confined to bed and tumbled about on account of double catarrh, and had such pronounced attacks of vertigo from Eustachian tube catarrh. Had this been the cause the catheterisation with free entry would have relieved it, whereas catheterisation tended to increase vertigo and consequently had to be discontinued. The act of inflating the Eustachian tube apparently tended sometimes to excite the irritability of the labyrinth.

Two Cases of Chronic Otorrhœa treated by Zinc Ionization—A. R. FRIEL, M.D.—CASE I.—Female, aged 11, duration of disease was eight years. Condition on examination: Tympanum occupied by polypoid granulations. Treatment consisted in destroying these by zinc electrolysis. The sepsis was treated by zinc ionization and boracic acid.

It is interesting to see that the tympanum is now covered with smooth and dry mucous membrane.

CASE II.—Female, aged 9. Duration of disease was three to four months. On examination muco-pus was aspirated from a cavity at the posterior wall of the tympanum. This cavity was washed out with an attic cannula and then filled with zinc solution. The electric current was conveyed to it by the gelatine-covered wire previously described (3rd November 1923). The sepsis in the tympanum was treated by zinc ionization and boracic acid.

A rapid cessation of suppuration in both these cases was obtained by zinc ionization.

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Mr H. J. BANKS-DAVIS asked whether ionic medication would cure many cases after mastoid operation where discharge persisted in spite of the usual attention for years. Patients whom he had at one time sent to the Electrical Department did not improve very much. They often complained of giddiness, and did not like the treatment. It seemed to him that this ionic treatment should only be carried out by aural specialists who were acquainted with the actual conditions prevailing at the time.

Mr A. R. TWEEDIE said he did not wish to detract in any way from the success of this case. Although the appearance of the child suggested the presence of adenoids, on inspection the naso-pharynx was seen to be perfectly healthy. He also noted that there was an almost total defect of the tympanic membrane, an apparently empty attic with free drainage, and no antral disease. Such a case he would have hoped to have healed with topical treatment without ionization.

Dr FRIEL (in reply) said that before coming to the ionization clinic the child had had prolonged topical treatment. A few days ago he thought he saw a trace of secretion at the lower part of the tympanum, but on rubbing the white area with cotton wool he found there was none. The patient had had no treatment for a month before being exhibited.

Mr Banks-Davis' question opened up too large a subject to be discussed at such a late hour of the meeting. He had regularly pointed out in what conditions the treatment was not suitable, but it was equally important to state those in which it was suitable. In his opinion, for accessible areas, the method was infallible.

Tuberculosis of Nasal Septum and Middle Ear—F. J. CLEMINSON, M.Ch.—I first saw this case on 4th March last. The history was that the patient had had increasing nasal obstruction and deafness since Christmas. I found the nasal mucosa heaped up on both sides of the septum, causing almost complete obstruction; it was dark red and granular in appearance and bled easily on being touched with a probe. Both tympanic membranes were reddened, but not bulging. The patient could hear a loud voice at a distance of 1 inch on each side. The Wassermann test was negative. A section was made of a small piece of mucosa removed from the septum, and the report was that there was stratified epithelium, beneath which were granulation tissue, fibroblasts and mononuclear cells; also there were several tubercular giant cells. Ten days after admission, right facial weakness was noticed, and I did a radical mastoid operation the same day. The report on the granulations was that giant cells were found. A week later the left side of the face twitched a little, and I did a radical mastoid operation on that side, and found the same condition of granulation without appreciable pus. I removed at the same time as much of the nasal septum as I could, but this week I noticed that there was still some disease present on the anterior and upper parts of the septal remains. Hearing is about the same as it was before the operation. Dr Beaumont found a lesion in the apex of the right

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lung, probably tuberculous in character. The sputum is not positive for tubercle.

Mr A. R. TWEEDIE said that cases of adult tuberculosis in the middle ear must be very rare. He had a patient at the present time who had a large extra-dural abscess, following tuberculous otitis media, which was now getting better, and in which the progress of healing was apparently being assisted by the application of balsam of Peru.

SCOTTISH SOCIETY OF OTOLOGY AND LARYNGOLOGY

NINETEENTH MEETING HELD IN THE ROYAL INFIRMARY, EDINBURGH

June 14, 1924

President—Dr JOHN M. DARLING

Stylo-Hyoid Variations and their importance to the Laryngologist: with Lantern demonstration—Dr DOUGLAS GUTHRIE.—(Paper published in the *Edinburgh Med. Journ.*, Vol. xxxi., No. 7, 1924.)

Abscess of Left Temporal Lobe—Dr J. S. FRASER.—Male, aged 23, complained of discharge from the left ear for thirteen years: no history of pain or deafness. When seen on 8th February, had a polypus in left external acoustic meatus: there was no mastoid tenderness. Arrangements were made for removal of polypus, but on 24th February, patient admitted with severe pain in left ear and headache; no vomiting or shivering; no mastoid tenderness; no spontaneous nystagmus; conversational voice at 18 in. with finger closure of right ear.

Radical mastoid operation; pus in antrum with diseased bone in roof and greyish-green dura mater above it; bone removed round this, but dura mater not opened as there had been no vomiting; wound left open. No intracranial symptoms developed and post-aural wound stitched on the 29th. On 1st March, patient drowsy; could not name objects; spontaneous nystagmus to right and left; pupils dilated but equal. Immediate operation and foul-smelling temporal lobe abscess evacuated. Iodoform gauze drainage used until 26th March: recovery.

The exhibitor has now had two cases in which an intracranial complication was suspected before or at operation, but without manifest symptoms until the post-aural wound, at first left open, was stitched.

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Left Temporal Lobe Abscess—Mr J. D. LITHGOW.—Male, aged 24, with chronic discharge from left ear, was admitted with pain on left side of head, vomiting and giddiness: no mastoid tenderness: no spontaneous nystagmus but well-marked optic aphasia. Patient was sent in as a case of cerebral syphilis owing to strongly positive Wassermann reaction. Radical mastoid operation and large temporal lobe abscess evacuated: recovery.

The PRESIDENT asked Dr Fraser if he had any explanation as to how the symptoms arose within twenty-four hours of the sewing-up of the skin incision? Were they due to an increase in the pressure or a result of diminished drainage?

Dr ADAM asked for the explanation of the spontaneous nystagmus, both to right and left. Was it a very large abscess? He had seen the nystagmus in tumour of the cerebello-pontine angle, but in a temporal abscess it was not a known symptom.

Dr FRASER (in reply to Dr Darling) thought that the sudden appearance of symptoms of an intracranial lesion after stitching the wound might be due to increased pressure. A small decompression operation was performed by the exposure of the dura mater, and the sewing-up probably raised the intracranial pressure and caused the lesion already present to become manifest. The operation was on the 25th and the wound was stitched on the 29th of March—four days afterwards. It was possible that the intracranial symptoms would have arisen at the latter date even if the wound had not been stitched. There was a tablespoonful of pus in the temporal lobe abscess, which was not a very large one. Spontaneous nystagmus was seen in patients coming out of an anæsthetic. In this case it was not really very much more than was sometimes found normally. If the spontaneous nystagmus was equal both to right and left it had not the same significance as if it were only to one side, or more marked to one side.

Malignant Disease (Squamous-celled Carcinoma) of Lateral Pharyngeal Wall, treated by Radium—Dr J. S. FRASER.—Male, aged 39, complained of deafness in right ear, of six weeks' duration; the right nostril was obstructed. He was seen by the house-surgeon 31st January 1923, who found clear fluid in the tympanum with enlargement of the posterior end of the right inferior turbinal. This was removed without improvement.

In February 1924, patient had enlarged right cervical glands removed, which were found to be malignant. Examination by the exhibitor revealed a smooth swelling on the lateral wall of the pharynx behind the posterior pillar and a fungating swelling on the right lateral naso-pharyngeal wall; right drumhead indrawn.

4/3/24/.—Radium treatment commenced by inserting a 10 mg.-tube for three days into naso-pharyngeal swelling. 1/4/24, radium repeated. It was now possible to see into the naso-pharynx through right side of nose, but some swelling of right lateral wall of oro-pharynx

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remained. Radium inserted into glandular swelling in neck. The right drumhead shows slight bulging in posterior superior part, but air enters on Valsalva.

Malignant Disease of Posterior Pharyngeal Wall treated by Radium—Dr J. S. FRASER.—Female, aged 35, complained on 6th February 1924 of cervical gland swelling on right side, of seven weeks' duration; also of pain in left side of throat. A smooth, hard swelling was seen on posterior pharyngeal wall behind soft palate. There was some clear fluid in both tympana. Microscopic section reported on as either sarcoma or carcinoma.

4/3/24.—Radium tube introduced via nose into tumour. 7/5/24. —Pharyngeal tumour has disappeared and there is now no fluid in tympana. 20/5/24.—Enlarged cervical glands excised.

Sir WILLIAM MILLIGAN said that with regard to the first case he did not think that the condition of the patient was very satisfactory. He assumed that the growth was originally considerably larger than it was to-day, but he wished to ask Dr Fraser if he did not think 10 mgs. of radium a very small dose for a large tumour. He (the speaker) would have been more inclined to have used a much stronger dose with a shorter exposure, and still better, to have made a barrage of radium tubes right round the growth and left them in for, roughly speaking, twelve hours. As far as he could gather from his examination, there seemed to be a gland in front of the tragus and a great deal of thickening in the neck, glandular or fibro-cellular. What did Dr Fraser propose to do now? The growth was spreading down the pharynx and was not by any means arrested. Would Dr Fraser re-introduce radium, and, if so, how much, and did he propose to apply radium plates externally? He (the speaker) thought a great deal could be done for the patient, and he would like to have Dr Fraser's opinion on this point.

Dr SYME said he had very little experience in the treatment of these cases with radium, and he was very much interested in what Sir William Milligan has said, because of his large experience. He (the speaker) was interested in the glandular swelling of the neck. It reminded him of a case he saw about a year ago. He was called to see a patient who had been treated in Edinburgh with radium for sarcoma of the tonsil, and, though the growth had disappeared, a large glandular swelling had appeared in the neck afterwards, and he would be interested to know if the exposure to radium in this case had resulted in an increase in the glandular growth in the neck.

Dr EWART MARTIN asked Dr Fraser if it would not be better in such cases to carry out the radium treatment of the glands and the radium treatment of the growth at the same time, instead of separately as in this case. The radium, apparently, lost its effect after a certain period and created a barrier round about the point of insertion; this barrier excluded the use of radium at intervals until the barrier effect had passed off. In a case, somewhat similar to this, which he had treated, the patient had 2700 radium hours, and six weeks later the second application was made. In Dr Fraser's case there was a note of only 720 radium hours.

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Dr MACLAY said that two years ago he showed a case in which a man had a carcinoma in the nasopharynx, with a glandular swelling in the neck. The latter was removed surgically, and the diagnosis was arrived at from its microscopic appearance. The patient had 100 mgs. of radium for twelve hours and, so far as one could judge, he was cured. Members were unable to find any trace of growth in the post-nasal space, and there was certainly no sign of recurrence in the neck. He (the speaker) agreed with Sir William Milligan regarding the dose; there did not seem to be any definite opinion as to the dosage for these various growths, and there was some risk as regards large doses because, in a similar case where he left the radium in for precisely the same time in a woman with a pronounced growth (carcinoma), in the post-nasal space, it led to total destruction of the soft palate and partial destruction of the hard palate, and she was in a very distressed and very septic condition for a good many weeks. It eventually cleared up, and one could see right in to what was the roof of the post-nasal space, and it was clean and smooth as the palm of the hand. Evidently the radium had destroyed all trace of new growth. In both those cases the radium was not buried, as Dr Fraser described; it was simply introduced through the nose, suitably shielded in a catheter, or fine rubber tubing, and retained in position by a little packing.

Dr HOWIE asked Dr Fraser if he had any experience in the use of Erlangen treatment? He (the speaker) was inclined to have the external parts treated with a few heavy doses of Erlangen. He thought perhaps that might effect a cure.

Dr FRASER (in reply) said the patient was seen first on the 23rd of January 1923 by a clinical assistant. A correct diagnosis was not made on that occasion. The patient only came back after he had been to the surgical side, where he had been sent on account of the enlarged glands in the neck. These were operated upon as tuberculous glands, and it was only when microscopic sections were made of these glands that it was discovered that the case was one of secondary gland carcinoma. The patient was accordingly sent back to the Ear and Throat Department. He (the speaker) had asked the general surgeon whether he proposed to open up the incision and put in more radium. His reply was that there was so much matting in and underneath the scar that it would be an exceedingly difficult matter to insert radium in the neck. He (the speaker) proposed to make an incision behind the posterior pillar of the fauces on the right side and insert radium through the mouth.

With regard to the dosage, he left that to Dr Dawson Turner, the radium specialist to the Royal Infirmary. It was difficult to keep radium in position by packing in gauze through the nose. After the nose had been cocainised he (the speaker) made an incision through the nose, in the swelling in the nasopharynx, and inserted a small radium tube and kept it in by packing. On one or two occasions the packing had come down and appeared behind the soft palate and gave rise to discomfort, so that it could not be kept in as long as the radium specialist would have liked.

With regard to the second case, Dr James Dawson reported it to be one of lymphadenoma. This probably explained the beneficial effect of

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the radium treatment upon the swelling in the nasopharynx. The enlarged glands were operated upon by Mr Struthers, and the sections showed that the condition was one of lymphadenoma.

Laryngeal Case for Diagnosis—Dr J. S. FRASER.—Male, aged 25, was sent from the V. D. Department with a history of sore throat and loss of voice for three months. He was said to have had syphilis four years previously and received six injections of 606. Wassermann reaction now negative. Patient is very deaf, but deafness is of middle-ear type.

Teeth in bad condition: posterior wall of pharynx ulcerated; only a stump of petiolus of epiglottis remains; margins of upper aperture of larynx swollen and vocal cords are ulcerated. Tissue from pharyngeal ulcer shows giant cell formations of tuberculous type and no evidence of syphilis.

Dr Syme thought that in spite of the histological examination of the portion removed, the appearance was much more suggestive of syphilis than tuberculosis, and, if there was tubercle present, the case was one of mixed infection.

Enchondroma of Right Ethmoidal Region—Dr J. S. FRASER. —Male, aged 13, complained of right nasal obstruction and of a swelling anterior to the right inner canthus. This had been operated upon on three occasions by another surgeon. There was right dacryocystitis; also a hard swelling in region of lachrymal bone and frontal process of maxilla, and a "bony-hard" swelling in area of right middle turbinal. X-ray showed shadowed right ethmoidal region.

On 12/2/24, an external incision exposed a large, purplish-pink cartilaginous tumour projecting from right lachrymal bone and extending back to involve the whole ethmoidal labyrinth. It was removed and reported on as a simple chondroma. On 6/3/24, a further portion removed intranasally from region of agger nasi. Is there recurrence now in posterior ethmoidal region?

Dr DOUGLAS GUTHRIE said the case originally came under his notice at an early stage, when there was a tiny nodule on the side of the nose. The swelling had been present for some months, and it felt so hard that it was regarded as an exostosis projecting between the nasal bone and ascending process of maxilla. Through an incision the growth was found to extend towards the ethmoidal region and the middle turbinal. It was quite soft, and almost gelatinous, and, on examining the cavity after removal, he found apparently solid bone all round. Microscopically, the tissue was found to be soft, hyaline cartilage, rather more cellular than usual. In December 1922, the boy returned with an abscess over the position of the wound. This was incised and healed in a few days. Dr Fraser had kindly asked him to see the boy, and to be present at the operation. The extraordinary extent of the growth was rather striking, because when he (the

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speaker) saw the boy first it had been growing for two or three months, and yet there was only a tiny nodule. Evidently there was a sarcomatous element in the case.

Dr LOGAN TURNER thought that Dr Fraser should reopen the cavity and remove the further extension which he (the speaker) feared was taking place. In the treatment of enchondromata it was very necessary to remove the whole of the capsule. If there was a small portion of capsule left a recurrence was likely to take place.

Sir WILLIAM MILLIGAN asked if the case had been X-rayed again? He was very doubtful, indeed, as to any recurrence, but thought a skiagran would be valuable.

Dr FRASER said he had been watching the case fer some months now, and it did not seem to him that there was any increase of the tissue in the posterior ethmoidal region. It had not been X-rayed lately.

Case for Diagnosis—Dr J. S. FRASER.—Female, aged 19, has complained for several years of nasal obstruction and discharge. Anterior rhinoscopy reveals a purulent discharge, and the mucosa of the inferior turbinals congested and granular with a similar appearance on the right side of the septum anteriorly. The skin of the alæ nasi is normal. There are areas of ulceration on the hard palate, and a small swelling on the posterior wall of the oro-pharynx. Wassermann reaction is negative.

Dr HARPER thought that the ulcers were tubercular.

Dr LOGAN TURNER regarded the case as a lupoid condition which would respond very well to diathermy treatment.

Dr SYME agreed with Dr Turner that it was a case of lupus of the nose and palate, and that diathermy would be the best treatment for it.

Squamous-celled Carcinoma of Right Vocal Cord — Dr J. S. FRASER.—Male, aged 48, seen on 2/5/24, when he complained of hoarseness for six months. He had no pain and no dysphagia. The edge of the right vocal cord was flabby and indented by the left cord. The patient was advised to use Friar's balsam inhalation, to stop smoking, and report in two weeks. On 16/5/24, it was found that there was a definite red fringe on the right vocal cord, extending along the whole of the ligamentous part. The patient's voice had not improved. A piece of the growth was removed by the direct method, and the pathologist reported "squamous-celled carcinoma."

Tracheotomy and laryngo-fissure with removal of right vocal cord: Iodoform gauze packing was placed in the larynx and trachea above the tracheotomy tube and the thyroid cartilage and skin were not sutured. In the afternoon the patient suffered greatly from cough. His pulse and respirations were rather rapid, but there was no fever. He had a disturbed night and, next day, appeared somewhat

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cyanosed: pulse still rapid. As it was thought that the iodoform was causing irritation in the trachea, the packing was removed. Next day the patient was much better and the tracheotomy tube was removed. Further progress was uneventful.

Dr MATHERS asked why the tube was left in for so long.

Dr FRASER said that his two previous cases had died within two or three days, after operation, of pulmonary complication. One was a case of chronic bronchitis and the other had a mediastinal growth, which was not discovered before operation: both had been reported on by the physician as quite fit for operation. As these two cases had died, he thought he would make sure that there would be no inhalation pneumonia in this case and had, therefore, treated the wound as described. He had been informed recently that in Vienna they now left the thyrotomy wound open and did not stitch the thyroid cartilage, or rather the perichondrium. The neck wound was left open and packed above to the level of the tracheotomy tube. The mistake which he had made in this case was to pack the larynx and the upper part of the trachea with iodoform gauze. The iodoform caused tracheitis, violent cough, and copious expectoration. In future he intended to use the open method, but he would pack with plain sterile gauze or gauze soaked in Friar's balsam.

Chronic Frontal Sinus Suppuration: Radical Operation followed by Purulent Meningitis and Death: Early Abscess of Left Frontal Lobe—Drs F. E. REYNOLDS and J. S. FRASER.—Female, aged 80, referred from Eye Department, 1/2/24, with discharge of foul pus from a sinus above the inner canthus on the left side. There was considerable redness and swelling of the area around the sinus, and the patient gave a history of nasal suppuration of many years' duration. On examination the right middle meatal region contained polypi with pus. Purulent discharge was present in the choana on the left side and, on transillumination, both frontal sinuses and the left antrum were dark. A radiogram showed a very extensive left frontal sinus: the sinus and the left antrum were cloudy.

5/2/24.—General anæsthesia: radical operation on left frontal sinus: gauze plug in nasopharynx. On separating the periosteum, it was found that there was a large hole in the floor of the left frontal sinus, and that the bone around was very soft. The sinus contained foul pus and the posterior wall was eroded in two or three places. The anterior wall and floor were entirely removed. A large opening was made into the left nasal cavity, the middle turbinal removed and the ethmoid cells cleared out. The operation cavity was packed with iodoform gauze and drainage provided not only into the nose, but at two points in the external incision.

Progress.—The patient suffered from sickness on the day after operation. Temperature in the morning 99.6°, pulse 96: temperature rose in the evening to 101.4°, pulse 116.

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7/2/24.—Temperature normal.

8/2/24.—Wound dressed and looked satisfactory: all packing removed. Temperature rose in the evening to 99.8°, pulse 88.

9/2/24.—Sudden loss of consciousness at 10.30 P.M. Temperature 100.6°, pulse 92.

11/2/24. Death without recovery of consciousness.

Post-mortem.—Purulent meningitis present. Ventricles slightly dilated. Red softening in the anterior part of the left frontal lobe opposite the area of erosion of the posterior wall of the left frontal sinus. The lungs showed old pleurisy and hypostatic congestion. Calcareous degeneration of the mitral and aortic valves and atheroma of the aorta. Microscopic sections of the frontal lobe were shown.

Dr LOGAN TURNER asked if Dr Reynolds thought that the brain abscess had commenced before the operation? The case illustrated an important point, viz., the question of the existence of a spontaneous complication or the development later of a true post-operative complication. Some cases of sinus suppuration were operated upon and the patient died. The surgeon blamed himself, or the friends blamed him for an accident during operation, while in reality the complication had been present before operation.

Dr FRASER said that the sections of the brain from this case showed what was obviously a very clear brain abscess. Dr Reynolds and he had hoped that in the centre of the inflamed area there would be found a vein showing septic thrombosis, but the serial sections revealed no such appearance. The inflamed area was infiltrated with white cells, and serial sections showed it to have the shape of a small, fat cigar, *i.e.*, it was narrow anteriorly at the point of infection from the frontal sinus and then expanded as it passed backwards before it tailed off once more. As there was no evidence of venous thrombosis the infection must have probably occurred through the lymphatics.

Extensive Epithelioma of Auricle and Epithelioma behind Ear — Mr J. D. LITHGOW.—(1) Male, aged 69, had two separate epitheliomatous areas upon one auricle: areas curetted and skin grafted; later, radium treatment: cure. (2) Male, aged 61, radium treatment: cure.

Dr GRAY asked Mr Lithgow if there was any preliminary eczema behind the ear in the second case, furnishing a preliminary period of irritation.

Dr LITHGOW replied that in this case there was no history of eczema. In the first case there was a trace.

Dr RITCHIE RODGER said that he had had a case some months ago of an epithelioma of the auricle, involving nearly the whole of its outer edge with very extensive infiltration of the whole of the cartilage—so extensive that it seemed to him that nothing short of removal of the auricle and fitting on a false one would be of any use. It was a case of tar-epithelioma. The patient had tar warts on his arms. He was employed at chemical works, and the aural condition had arisen apparently from the same cause.

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He refused operation of the drastic kind and X-ray treatment was proposed. He had a number of exposures to X-rays and, when seen a few weeks ago, the condition seemed practically cured.

Sir WILLIAM MILLIGAN thought the first was a very remarkable case. He understood from Mr Lithgow that the treatment was curetting the epitheliomatous mass and then grafting. He (the speaker) thought that probably most of us, in such an extensive case of epithelioma, would have been disposed to have advised a more radical type of operation, perhaps even removal of the whole auricle. But this was a case which had been cured by scraping and by skin grafting. At first one would be inclined to think that it could not have been an epithelioma but must have been a rodent ulcer, but the pathologist regarded it as an epithelioma. It pointed a very important lesson—when one met with an epithelioma of the auricle, was it always necessary to do a very extensive operation? Another point which was rather curious was, that the graft took at the upper portion of the ear, which was the least well nourished, and it failed in the lower portion, which was the better nourished. There was, therefore, before the Meeting at any rate a new sidelight on the treatment of epithelioma of the auricle. How deep did the epitheliomatous condition go? It certainly could not have involved the cartilage. It was a very instructive case and made one think that perhaps, in the past, patients may have been unnecessarily mutilated by the performance of too extensive an operation.

Dr SYME said that he had seen cases of epithelioma of the auricle where the glands became involved early and he had not only removed the auricle but also the glands. He would strongly advise removal of the auricle rather than trust to the problematical improvement that might be got from radium.

Dr LEITCH thought that as both these patients were over 60 years of age, it was possible that the epithelioma was not so virulent. He did not think it was wise to go on the principle that epithelioma in this region was generally of a "mild" type. In younger persons he would be doubtful about trusting to radium alone. The present cases should be regarded as exceptional and their subsequent progress watched.

Mr DONALD WATSON wondered if anybody had had experience of treatment by diathermy in these cases?

Dr SYME said that he had used it upon an extensive epithelioma which started in the ear and spread on to the side of the head and down to the neck. The man did remarkably well. It was a most extensive operation.

Mr LITHGOW said that the growth had not involved the cartilage as far as he knew. He had curetted lightly, and did not scrape bare cartilage. The growth was fairly thick. The upper portion was completely separated from the lower portion. He scraped and grafted both portions. After the application of radium the lower part quickly healed up, so that both methods seemed to have acted equally well in this particular case.

Fronto-ethmoidal Suppuration with Supra-orbital Abscess —Mr J. D. LITHGOW.—Female, aged 59. The Sluder operation was performed on the ethmoid labyrinth and the frontal ostium was curetted: cure.

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Dr GARDINER asked Mr Lithgow if he had actually curetted the naso-frontal duct. He (the speaker) believed that if a complete removal of the middle turbinal was performed by Sluder's method, it cleared the naso-frontal duct better than any other procedure. He (the speaker) was of opinion that the use of rasps in the naso-frontal duct was succeeded by the formation of granulation tissue, and this defeated the object for which it was proposed to perform the operation, namely, the provision of free drainage.

Mr LITHGOW said that he did the Sluder operation and used the rasps and pushed them up and removed polypoidal tissue and pus. He did not attempt firm scraping, but sufficiently hard to remove the polypoid condition without stripping the mucosa underneath, and the result, he thought, had justified the means.

Chronic Hyperplastic Laryngitis — Mr J. D. LITHGOW.— Female, aged 45. In this case opinions were divided as to diagnosis and treatment. Portions of tissue removed showed hyperplasia of the epithelium, but no evidence of tubercle or malignancy.

Dr LOGAN TURNER considered it to be a case of laryngitis sicca with pachydermia. The patient had an atrophic condition of the nose, with extension of the atrophy downwards.

Sir WILLIAM MILLIGAN thought it was quite correctly described, but there should be added "with pachydermatous changes." He asked if there was any accessory sinus disease.

Dr SYME said he had little doubt that there was sinus disease, antral at any rate, and he would certainly get rid of the nasal condition first.

Mr LITHGOW said that she had been X-rayed and there was no special disease of the sinuses, but she had a dry condition of the upper air passages and was being treated with a 1 per cent. ichthyol spray. When first seen it had more the appearance of epithelioma or tubercle. The portions removed did not recur and the patient improved.

Otitis Media in Measles—Dr W. T. GARDINER.—(The paper is published *in extenso* in the *Journal of Laryngology and Otology*, November 1924, p. 614)

DISCUSSION.

Dr KEITH ROBERTSON said that he was very interested in Dr Gardiner's paper. He (the speaker) was Aurist to the Lower Ward for the Education Authority of Renfrew, and saw the school children. Amongst them there was a great proportion suffering with "running ears," and, in asking the children or their parents the cause of the commencement of the discharge, the most prevailing causes given were the nasal conditions and infectious diseases, such as scarlet fever, measles, whooping-cough, pneumonia, etc. It occurred to him some time ago that the most hopeful way of dealing with these cases was to get them at the commencement, and, as they were mainly children of school age, they could be reached through the Education Authority. The fever hospitals only took scarlet

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fever and diphtheria; more rarely a few cases of measles. In Edinburgh the subject had been taken up very wisely and well by Dr Gardiner. But it seemed to him (the speaker) that it was necessary to go a stage further back. A great number of the children never entered an infectious hospital, but all measles cases and all infectious cases were notified to the Public Health Authority and therefore could be traced. As Medical Officer to the Education Authority, it occurred to him that if that Authority would refer to the clinic all children who had suffered with infectious trouble, before they returned to school, their ears, etc., could be examined, and reports made on the conditions found; in that way chronic otorrhœa would be seen early, and no cases would be overlooked. He had not been able to get this carried out completely, because it meant a great amount of work, and much expense. The Authority was anxious to keep down expense, but had permitted him to take, as it were, samples of these children so long as he did not trespass on the time set apart for the regular work. Last year he collected fifty cases of children examined after infectious troubles. This year he had been doing the same. He had brought this matter forward in order to find out whether the Society considered that his idea was one worth pushing, and further, to suggest to any of those present who were in the same position as himself, that they too might seek in their areas to have the children examined and reported upon. He thought that in this way it might be possible to see the early stage of chronic suppuration following infectious diseases.

Dr DARLING (The President) said that his personal experience in practice in measles was concerned with the cases which did not go to hospital. He was sure that otitis media in private practice did not occur so often in measles as in scarlet fever, and he was satisfied, too, that it did not occur so often in measles as one in eight, as Dr Gardiner's figures seemed to show with regard to hospital cases. When it did occur, as a general rule, it ran a very mild course. In practice, he had never seen an acute otitis media from measles which required mastoid interference.

Dr C. B. KER wished to emphasise Dr Gardiner's point that the measles cases admitted to the City Hospital were selected cases and were only a very small proportion of the total measles in Edinburgh. The figure, 13·5 per cent., seemed higher than usual, and he could point to several years in which the percentage was low. In 1912, for instance, out of 1069 measles cases treated, otorrhœa occurred in 2·5 per cent. only, and for other years figures such as 4·1 or 5·3 per cent. were to be found in his records. He doubted if the percentage for all cases of measles, whether treated at home or in hospital, would exceed 4 per cent. Hospital figures did not, however, include all cases of otorrhœa, as the patients were often discharged early and might easily develop the condition later at home. He agreed that mastoid disease was comparatively rare.

Dr SOUPER wished to support the suggestion of Dr Keith Robertson as to the importance of getting early the otorrhœa cases following infectious fever. He (the speaker) did the aural work for the Education Authority in Aberdeen, and in his first year's work there he found that over 75 per cent. of the chronic suppurative otitis media cases were due either to measles or German measles or scarlet fever. Anything that

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could be done to get the cases early would be of the utmost value both to the Education Authority and, of course, still more so to the children themselves. One thing had been done in Aberdeen by the Chief Medical Officer to the Education Authority which he (the speaker) thought was a very important matter in the treatment of these cases. In Aberdeen there was no aural surgeon officially appointed to the City Fever Hospital, but the Chief Medical Officer to the Education Authority had arranged with the Medical Officer of Health that any child in the City Fever Hospital with measles or scarlet fever who was discharged with a running ear should be reported to the School Medical Officer, so that he actually obtained a note of each case that returned to school with otorrhœa; he (the speaker) made a point of examining these children when they returned to school and sent them to have their ears attended to at the aural clinic. In those towns where there was no official otologist to the City Hospital, that was certainly a link which helped in the treatment of these children.

Dr MACLAY said that he had the opportunity of seeing those cases that occurred in the Infectious Diseases Hospital in Newcastle, where measles cases were admitted on the same lines as they appeared to be in Edinburgh; that is to say, severe cases and cases from unsuitable homes. He had been associated with this hospital during the last three years, and for the last twelve months he had not seen one single case of otorrhœa in the course of measles so long as the patient remained in hospital, and he had no recollection of any mastoid or other complication connected with a measles case. It was very significant and very striking that they had not had otorrhœa in that particular area in connection with measles during the last twelve months. At the present moment there were twenty-five cases in hospital with measles, and there was nothing to suggest ear complications.

Dr GARDINER (in reply) wished to support Dr Keith Robertson's idea of seeing these children early. Looking back over four years at the Edinburgh City Hospital, however, the class of cases met with was practically confined to infants. He (the speaker) thought that the idea of following up cases after they left hospital would be more useful, because in some of the infants the ears might easily go on discharging for two years before the child reached school age.

Series of Cases illustrating the Result of Sluder's Operation at periods of six months to two years — Dr W. T. GARDINER.

Dr SYME said he had seen other examples of the Sluder operation by Dr Gardiner, and they were much better than those now demonstrated. They did not appear to him (the speaker) to be very satisfactory.

Dr RITCHIE RODGER said he had noticed that one in particular had very considerable adhesions, and in another it seemed to him that the difficulty of the operation must have been very much increased by the deviation of the septum. He had in one or two cases, before doing the ethmoid operation, carried out the submucous resection, and it increased the ease with which the higher parts were reached.

Dr GARDINER said that he had showed the case last referred to in order to illustrate the necessity, when occasion arose, of performing

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submucous resection in the first instance. Sluder was of opinion that it was not necessary. In future he (the speaker) would perform submucous resection of the septum, if necessary. He regretted that his more successful cases had not presented themselves.

Recurrence of Cerebellar Abscess three and a half years after Apparent Recovery — Dr J. S. Fraser and Dr W. T. GARDINER.—Girl, aged 12, was seen on 25th August 1920, with left chronic middle-ear suppuration and signs pointing to a cerebellar abscess. Immediate radical mastoid operation was performed by Dr Fraser and a large perisinus abscess evacuated. The cerebellum was exposed in the triangular area and a cerebellar abscess was opened. Abscess was reopened by Dr Turner a fortnight later: recovery.

On 29th December 1923, patient readmitted with history of left ear discharging for six weeks. She was semi-conscious and cyanosed, having become giddy with vomiting and occipital headache a few hours earlier. Temperature subnormal, pulse 56; no Kernig; no Babinski; absence of knee jerks and abdominal reflexes. Cerebro-spinal fluid was under great pressure and cloudy. Immediate operation by Dr Gardiner, who found considerable reformation of bone re-establishing an antrum and aditus, containing cholesteatoma and foul-smelling fluid. More bone was removed posteriorly and half a teaspoonful of foul pus was evacuated external to the dura mater posterior to the petrous bone; no cerebellar abscess found. Patient regained consciousness and made an uninterrupted recovery.

Dr DARLING (the President) pointed out that the recurrence was really an extradural abscess. An interesting point, too, was the regeneration of the antrum and aditus, as found at the last operation.

Dr FRASER said it seemed doubtful whether the patient ever had a cerebellar abscess; the case might have been one of those in which there was a collection of pus between the bone of the triangular area and the dura of the posterior fossa, in the region of the saccus endolymphaticus. He had opened the abscess in the first place, and Dr Turner had reopened it later on; the patient remained well for two and a half years. At the end of this period the extradural abscess in the triangular area apparently recurred. Dr Gardiner had stated that on going through the dura mater into the cerebellar fossa he did not get any more pus.

Dr GRAY asked if the pus smelt very foul. In an extradural abscess it was not usual to have the bad smell that existed in a brain abscess.

Dr BRAND said that he remembered the case distinctly; there was a cerebellar abscess, and it was very foul. Dr Turner had opened it on the second occasion pretty deeply in the cerebellum.

Lateral Sinus Thrombosis and Septicæmia: Ligature of Internal Jugular: Antistreptococcic Serum and Peptone—Dr EWART MARTIN.—Male, aged 23, with chronic bilateral otorrhœa, developed pain in left ear, with fever and vomiting. On 25/8/23, radical

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mastoid operation, evacuation of perisinus abscess, removal of clot from sinus and ligation of jugular. A month later, temperature 104° F. and slight rigor. 60 c.c. of antistreptococcal serum injected and 40 c.c. again within twenty-four hours. On 14/10/23, temperature still swinging; no complications could be detected; the blood cultures showed abundant growth of streptococci.

In consultation with Dr Mathewson on 21/10/23, 5 minims of 10 per cent. peptone (Armour) were injected intravenously. Temperature fell below normal within twelve hours, the serum rash which was present disappeared, patient felt better, and blood culture was negative. On 8/11/23, recurrence of fever and rigor. One minim of peptone with atropin injected intramuscularly. Fall of temperature and uneventful recovery.

Dr MACLAY asked Dr Martin what was the therapeutic action of the peptone.

Dr MARTIN said that the case was shown with the suggestion that peptone might be tried in other cases for general septicæmia. The boy had to begin with large doses of anti-streptococcal serum—60 c.c., followed by 40 c.c. within twenty-four hours. In consultation with Dr Mathewson, it was decided that no further doses of serum should be given, and he suggested that peptone might be used with the view of attempting to form some sort of chemical antitoxin. There was a remarkable change, the temperature dropped at once, and, moreover, remained down for seven days. Again, when there was another rise of temperature, a small dose of peptone had the same effect. The temperature dropped to below normal and remained down. He (the speaker) tried peptone on one other case with the same effect on the temperature, but, unfortunately, a few days later the patient developed meningeal symptoms and died of meningitis.

Dr FRASER said that shortly after Dr Martin's experience he (the speaker) had tried the same treatment on a case, but, unfortunately, without the same beneficial result.

Tumour of Carotid Body—Dr DOUGLAS GUTHRIE.—(The case is recorded *in extenso* in the *Journal of Laryngology and Otology*, November 1924, p. 635.)

DISCUSSION.

Dr FRASER wondered if the case was really one of tumour of the carotid gland. It appeared to him very much like a giant-celled sarcoma. Dr Guthrie had taken the very highest pathological opinion, but the section certainly looked remarkably like a giant-celled sarcoma. From the clinical appearance, too, he (the speaker) thought that the case seemed to be one of sarcoma, beginning in the lateral wall of the pharynx. There was practically no swelling to be felt in the neck at the upper border of the thyroid cartilage.

Mr DONALD WATSON had seen one case of tumour of the carotid body. The swelling was not so high as in the present case. It could be felt on the outside of the neck and moved from side to side. He had always

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understood that a tumour of the carotid body was a species of endothelioma. In the particular case which he had examined, the tumour was locally malignant; a chain of hard glands in the neck was secondary to it. The swelling in the present case seemed to be too high up to be a tumour of the carotid body.

Dr DOUGLAS GUTHRIE said that the diagnostic points were the position between the carotids, the mobility from side to side and not up and down, the ovoid shape, the pulsation and the slow and painless growth. The patient did not have laryngeal paralysis, as had been very frequently reported, and did not show any pigmentation of the skin. Diagnosis was confirmed by the pathological report by Dr Dawson; the slides had been compared with several published cases in which slides were illustrated. Although the tumour resembled a giant-celled sarcoma, it was more probably a tumour of the carotid body as it had been growing for three and a half years. He had hoped that members would have made some suggestion as to treatment. The tumour was adherent to the carotids, jugular, vagus, etc. The mortality in these cases was very high. In some cases it might be advisable to do a decompression operation, tying the common carotid and dividing the sterno-mastoid muscle, so that the tumour might tend to grow outwards rather than inwards, and the symptoms —difficulty in swallowing—might then be alleviated.

Laryngeal Paralysis following Thyroidectomy—Dr DOUGLAS GUTHRIE.—Patient, a female, had the left lobe and part of the right lobe of the thyroid gland removed. Six months later, when she reported, the right vocal cord was found immobile.

ABSTRACTS

THE EAR.

Some Indications for the Radical Mastoid Operation in Otitis Media Purulenta Chronica. H. H. BURNHAM, M.B., Toronto. (*Canadian Medical Association Journal*, May 1924, p. 367.)

The author reviews briefly the development of the radical mastoid operation and gives a few of the indications for operation. Special stress is laid on the question of acute reactions occurring in a chronic suppurative otitis and the presence of cholesteatoma.

Another question discussed is as to whether operation should be undertaken during the acute reaction or after the acute symptoms have subsided. This he would decide according to the urgency of the clinical signs of a serious complication, and the type of infection present as shown by culture. E. HAMILTON WHITE.

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