doubtful, or will exclude a gross lesion that otherwise must have been left under discussion. The eighth nerve he looked upon in the same light as is the second. No one would dream of making a diagnosis of or of excluding an intracranial tumour without examining the second nerve. Why should they do so without a complete examination of the eighth nerve. The neurologists either must learn to do these tests themselves or they should send their cases to the otologist for examination and report, in the same way as they now either examine the fundus oculi themselves or ask the ophthalmologist to do so for them.

Mr. G. J. JENKINS desired to express disagreement with the generally accepted theory regarding the association of certain forms of nystagmus with certain canals. It has been held by Bárány and generally accepted, as described in the introductory paper by Mr. Scott, that rotatory nystagmus is associated with the superior semicircular canal and vertical nystagmus with posterior semicircular canal. It appeared to him that the canal which received the maximum stimulation by rotation in lateral flexion of the neck and face turned forward and upward must be the superior canal, if the rotation be made from that side forward. This rotation would produce a vertibulo-ampullary current in the superior canal on the flexed side and an ampullo-vestibular current in the posterior canal of the opposite side. Other canals would be affected, but the resulting vertical nystagmus would probably be due to the preponderating influence of this superior canal and not the posterior canal. Similarly, he held that the posterior semicircular canal and not the superior was the important peripheral stimulus for rotatory nystagmus. He could not agree that sufficient evidence had been brought forward by the caloric test to prove that the various forms of nystagmus could be due to other canals than those described. At least, he held that anatomically the above reasoning was correct.

It is interesting to note that a nystagmoid movement artificially produced may cause vertigo with associated phenomena in certain cases. By rotating a cylinder with a series of spots on it and getting the patient to fix these spots as they come into vision vertigo can be produced. If these be done where there is an irritable labyrinth the nature of the vertigo can sometimes be changed at will of the operator. He has been in the habit for some years of testing for the irritable labyrinth by means of a mirror rapidly moved to produce a nystagmoid movement.

## PROCEEDINGS OF THE SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

*Held in the Western Infirmary, Glasgow, June* 6, 1914.

DR. WALKER DOWNIE, *in the Chair.*

*Report by* DR. W. S. SYME.

(*Continued from p.* 442.)

**Dr. Maurice's Kinesiphone.—Its Mechanism and Mode of Use.—The Author's Claims and Results.—Effects in three cases of Catarrhal Deafness treated with its Aid.—J. Mackenzie Booth.**—The

kinesiphone of Dr. Maurice, of Paris, is an ingenious adaptation of the Faradic battery to produce sounds like those of the human voice, which are intensified and transmitted to the ear by telephonic receivers. The sound is produced by the vibration of platinum plates under tension by a rubber point, the increase or diminution of which tension raises or lowers the pitch of the sounds.

Two resistances are furnished to regulate the intensity of the sound—one for either ear. There are three registers for low, middle and high notes, and the inventor claims that these comprise sounds of from 80 to 3500 vibrations per second, roughly corresponding to those of the human voice. The apparatus is worked by a 6-volt accumulator, placed in a recess at the back of the cabinet. It is furnished with an ampermeter to show the amount of current being taken, a voltmeter to test the condition of the accumulator, and an interrupter to cut off the current from the receivers at will. The inventor claims that the sonorous vibration is an advance on the mechanical vibration of Delstanches masseur or of Breitung's pump, and that with partial deafness unimproved by other methods, irrespective of the cause, he obtains 75 per cent. of successes, 20 per cent. partial successes and 5 per cent. failures. By success he means getting ten times the original acuity of hearing. He also claims that the tinnitus and other discomforts accompanying the aural condition are relieved or disappear during the treatment. He recommends that the sound should be raised till the patient experiences a tickling sensation in the affected ear or ears, that the sittings should be from six to ten minutes daily, and be continued for fifty or more times, the hearing power being tested every few days. He divides his cases into sclerosis of the tympanum, mixed tympano-labyrinthine sclerosis, cicatricial sclerosis following otitis media, and purely labyrinth cases, and gets his best results in unilateral deafness and infantile forms and cicatricial cases, with or without loss of ossicles, while the catarrhal and purely labyrinthine forms benefit less by this method.

Case 1.—J. S——, aged twenty-six, a marine engineer, has suffered from nasal catarrh for eight or nine years affecting both ears, and has been getting deaf during that time. He has been under treatment from time to time for four years. Tinnitus has been fairly frequent but never distressing. Rinne's test is negative on both sides. There is no paracusis, and in the noises of the engine-room he finds it more difficult to hear voices. Latterly he has found conversation very difficult. From January 23 till February 26, 1914, he had thirty sittings during each of which for from six to ten minutes daily both ears were subjected to the whole range of the sounds available.

Before commencing the hearing distances were:

On right ear, watch 12 in.; left ear, watch 12 in.

On right ear, whisper 9 in.; left ear, whisper 7 in.

On right ear, ordinary voice 2 ft.; left ear, voice 1 ft.

After treatment:

On right ear, watch 22 in.; left ear, watch 19 in.

On right ear, whisper 3 ft.; left ear, whisper 2 ft.

On right ear, ordinary voice 7 ft.; left ear, voice 8 ft.

At this point the patient had to leave for duty, but he was finding conversation much easier and declared that the subjective noises had vanished. In recent letters from South America he states that the hearing has continued to improve. Probably longer treatment would have given a better result.

Case 2.—A medical man, aged thirty-nine, has been deaf for twenty

years, commencing during his curriculum with nasal catarrh, attributed to excessive diving. He was treated at that time in Aberdeen, and after graduation he was referred to Sir William Dalby. Since then he has been treated by about twenty well-known aural surgeons in England, Scotland, and Ireland, and has undergone almost every known form of treatment. Nasal douches, inflations of air, hot air, medicated vapours, injections of thiosinamin and pilocarpin, Eustachian catheterisation and bougies are a few among the many measures employed. Two years ago he had a submucous resection of the nasal septum done, after which his hearing on the better side was permanently worse. More recently, in London, he has had one of his tympanic membranes blistered, with bad results after a temporary amelioration. Neither the watch nor the whispered voice can be heard, the tuning-fork is badly heard over the vertex and mastoid area, and only a very loud voice can be made audible quite close to the auricle. Low-pitched sounds are better heard on the right, high on the left, side. Only by means of an electrical aid can he hear one person speaking fairly well, and this enables him to hear the piano when he practises. For a number of years his affliction has totally incapacitated him from professional work. He had forty-two sittings with the kinesiphone from January 24 till March 2, when he had to leave. The strongest sounds were requisite to produce a tickling sensation, and though reddening of the membrane resulted after each sitting it very quickly subsided. At the close of treatment only a very slight improvement could be made out on the left ear—no practical amelioration. One could hardly have a worse case for such treatment, and the result was what might have been expected.

Case 3.—E. M——, spinster, aged thirty-six, has suffered from repeated nasal catarrh for over twelve years and has been getting deaf during that time. She has been under treatment for the past six years for hypertrophic rhinitis and subsequent right Eustachian and tympanic catarrh. Nasal douches, galvano-cautery, Eustachian catheterisation, applications to the faucial orifice of the Eustachian tube and the occasional use of Breitung's pump have all helped to give temporary relief. Of late she has found conversation difficult, more especially if more than one person is speaking, and she expressed a wish to have, if possible, further treatment. From January 27 till March 8 she had forty sittings.

At the beginning of treatment the hearing distances were for the right ear:

| | |
|---|---|
| Watch | 12 in. |
| Whispered voice | 21 ,, |
| Ordinary voice | 3 ft. |
| After: | |
| Watch | 28 in. |
| Whispered voice | 10 ft. |
| Ordinary voice | 21 ,, |

She says the occasional tinnitus and fulness in the right ear have gone, that she can take part in mixed conversation as she has not been able to for years, and that her relatives and neighbours have been impressed by the manifest improvement in her hearing.

The uncertainty of benefiting any given case and the length of the treatment are objections to its adoption, and one would not readily urge it unless he could foresee a fair chance of success. It would be unfair from such scanty data as the above to draw any definite conclusions, but it seems to me that an instrument capable of producing a great range of

sonorous vibrations of varied intensity, roughly corresponding to those of the voice, and transmitting them to the ear, is an improvement on the earlier mechanical forms and likely to be useful as a means of passive re-education in moderate degrees of deafness.

Dr. GRAY said he had visited Zund Burguet in London and had had a humorous interview. There was a large instrument in the room, and he wanted to see the inside of it, but Zund Burguet did not uncover it. He went through various performances. Dr. Gray could see no difference from the ordinary telephone in its effects. The price of the instrument was then £300. Several of his patients had expressed a desire for this treatment, and he (Dr. Gray) did not discourage them. He measured the hearing before they went and when they came back, and found on testing that they were almost exactly the same as they were before. He had never known anybody get any benefit, although some patients *thought* they were better. Lake had recorded one really very remarkable case in early childhood. He (Dr. Gray) could understand that in the case of a child, whose neurones were not fully developed—they do not complete this development until the age of thirty or at middle life—benefit might result from this method of education, but he could not see how one could expect to re-educate older people. Their ears were being educated too much in a city with so many different noises. If he were to take any drastic measures for these cases it would be exactly the opposite; he would spare the nerves every sound possible; if one could plug the ears up one might get a little improvement, because one would be giving the organ a rest.

Dr. KERR LOVE said there was a committee sitting, and had been sitting for twenty years, with the object of giving a prize to anybody who brings forward an instrument which would really help deaf people. One should discourage these instruments altogether unless they are disconnected from commerce. An individual could be re-educated to a better knowledge of sounds, but not, in his opinion, to greater acuity of hearing.

Dr. PORTER said he was one of the people who had gone in for Zund Burguet's instrument; he was using it only in cases in which the question of fee did not enter. He had tried it in about seven or eight cases, not having as yet had time to do more. Out of six cases, in which the treatment was completed, three or four had got an improvement which could not merely, he thought, be put down to suggestion or optimism. Two of his patients were nurses. The amount of hearing is not a thing one can measure like a pound of butter. If the patients themselves and their friends think they are hearing better, and one can get the improvement to last for a reasonable time, one must conclude they are better. One nurse, who, before treatment heard his loud voice at 12 ft.—it was tested by a tape measure to be sure of the distance—could now hear it at 18 or 19 ft., and for ordinary purposes she certainly heard very much better than before. He had not intended to mention these cases until a more definite decision had been come to; he intended at the next meeting of the Society to show some patients, whether they are improved or not, and give the results obtained. The other nurse was, he (Dr. Porter) thought, distinctly better also. She is aged fifty-six years, and had given up all hope of getting better. He had known her for ten years, and her deafness had been increasing. She now says that she hears the birds in the morning, which she had not done for some years.

Dr. KERR LOVE suggested that Dr. Porter should apply the continuous tone series. The human voice may vary considerably, according

to the physical condition of the examiner. The loud voice could not be relied on.

Dr. PORTER replied that he thought the voice could be regulated. His loud whisper was the loudest possible without breaking into phonation. He had treated an old relative, aged seventy-two, but did not expect to do him good, and had not. On testing him afterwards he brought him out within 6 in. of what he had been a fortnight before.

Dr. DARLING spoke to the improvement in the nurse Dr. Porter had referred to. Previously it was necessary to speak to her in a loud voice, now an ordinary conversational voice was sufficient.

Dr. THOMAS BARR said he was, some months ago, invited to see the application of this instrument. He took with him a patient suffering from otosclerosis. The operator first tested the hearing in a most unreliable manner, and again, after the application of the instrument in an equally unsatisfactory way, then remarking to the patient, "You are a little better." Dr. Barr remarked that of course he would not pretend to do any permanent good at one interview, and asked him to lend an instrument to the Glasgow Ear, Nose, and Throat Hospital for an extended trial. This he appeared to cordially agree to, but the instrument had never arrived. Dr. Barr was unfavourably impressed with what he saw.

Dr. J. S. FRASER said they must all acknowledge that the results of previous methods of treatment in cases of chronic middle ear catarrh, otosclerosis, and nerve deafness had been disappointing, and they should welcome any new method which affords a chance of improvement. If, however, they had regard to the pathology of deafness he did not think that auditory re-education was going to do anything. One could not imagine it absorbing adhesions, or deposits of new bone. The only thing one could imagine it might do was to benefit cases where there was some nerve deafness. Personally he would rather agree with Dr. Gray that even in these cases stimulation of the nerve apparatus would not be the line of treatment one would naturally recommend. It was, however, difficult to account for the good results which Dr. Porter had spoken of, and which Dr. Darling and Dr. Gardiner had confirmed. One must allow that improvement in the mental condition of the patient makes a great difference in the general health. If people were encouraged they felt very much better and were really much better. He thought the improvement in the mental condition produced by such an imposing apparatus must influence the mental aspect of the patient. One must remember that improvement in the hearing distance may arise from that without being permanent. What one wanted was to have these cases followed up and have reports six months, twelve months, and even longer after treatment.

Dr. MACKENZIE BOOTH was absolutely certain that Dr. Porter was right in what he said. He was certain there was improvement where hearing is only partially lost, and, where one can use sounds like those of the human voice, that the patient would get to understand the human voice. He could not understand Dr. Gray's contention. If the voice is shut off the hearing becomes worse from disuse. Re-education was perhaps not the right word to use.

**Unusually large Cholesteatoma.—N. Maclay.**—The specimen was removed during the course of a radical mastoid operation from a patient, aged thirty-nine, whose sole complaint was vertigo. Unilateral deafness and the history of aural discharge in early life drew attention to the ear,

where inspection revealed the absence of the tympanic membrane and what looked like a dry, irregular, epithelialised surface, corresponding to the inner wall of the tympanum. The presence of the fistula symptom led to the diagnosis of semi-circular canal erosion, and subsequent operation proved this to be so. Six months after operation labyrinthine activity, as shown by caloric and rotation tests, was nearly normal and hearing power was improved.

**Thyreoglossal Cyst.—J. L. Howie.**—Man, aged forty-two, presenting smooth oval mass as large as pigeon's egg above thyroid cartilage. He states that there has been a lump in this situation since childhood, but that recently it has increased in size. There is no discharge into the mouth.

**Endothelioma of Right Antrum.—A. Brown Kelly.**—Man, aged forty-five, began to have pains in right side of head and swelling of right cheek in October last. Teeth extracted, antrum opened from alveolus and pus regularly syringed out. In January first examined by exhibitor, who found a firm, fleshy bulging of skin over right antrum, and in this cavity a lobed growth on its anterior wall. A piece was removed and diagnosed endothelioma. Excision of superior maxilla was suggested, but on opening the cavity the surgeon deemed this inadvisable and scraped it out instead. Since the operation radium had been employed on two occasions. There was now a fistula at the side of the ala through which the antrum can be inspected.

**Tuberculosis of the Nasal Mucous Membrane.—A. Brown Kelly.**—Man, aged twenty-six, complained of deafness, but of no nasal symptoms. In October, 1913, granulating tissue in the right nasal fossa was snared, and in March a piece of what looked like a nodular growth was removed from the left middle meatus by exhibitor; on both occasions the hæmorrhage was very profuse. Dr. John Anderson reports that the tissue is tubercular. The chief infiltration is at the posterior edge of the septum, where it largely fills the choanæ. The case is shown on account of the unusual sites occupied by the disease, the severe bleedings on touching the growth and the obscure histological characters.

Dr. Adam said he had seen a similar case without bleeding. It had been sent as a case of polypus but turned out to be tuberculous. The inferior turbinate had been destroyed by tuberculous disease.

Dr. Logan Turner said that as the histological characters were obscure and the situation unusual for tubercle, might it not be malignant?

Dr. Walker Downie said he had had a similar case a short time ago which, however, turned out to be a sarcoma. There was a small outgrowth, the size of a pea, on the septum, the removal of which was followed by profuse bleeding.

**Ozæna cases treated by Vaccine of Perez's Bacillus.—A. Brown Kelly and J. F. Smith.**—The vaccine in some cases has evidently exercised a specific action on the nasal affection in diminishing or removing the fœtor, liquefying the secretion and lessening or checking the crust formation. As some cases have relapsed the ultimate effect of the vaccine is still doubtful.

Dr. Brown Kelly said that one of the cases shown was not quite clean, while the other was worse than she had been for a long time. He

was rather glad of that, however, as he did not wish anyone to carry away too good an opinion of the treatment. These cases would not have been shown had the meeting not been taking place; he would have waited longer to get truer information regarding the results. Of all the many methods of treatment he had used and seen used none gave so great promise as this. The vaccine had undoubtedly a specific influence. First, the fœtor passed off, then the patient stated that the nose was running more, and later, in some cases, the crusts disappeared. The same thing held good when the dried secretion was chiefly in the naso-pharynx. He could not tell what the ultimate result would be. Dr. Smith had given the injections all winter to a number of his patients.

Dr. Logan Turner asked if a vaccine of Abel's bacillus had been tried. He had shown two cases treated by that vaccine; one remained well for about five months, then the condition recurred, and another course of autogenous vaccine was given. The improvement lasted only a very short time after the administration of the vaccine. Repeated courses are required. It might not be necessary to syringe at all. He thought Dr. Smith should make some control experiments with Abel's bacillus.

Dr. Smith said he thought the injection of a vaccine of any toxic organism might cause a certain amount of malaise and even nasal catarrh, with consequent softening of crusts. Perez wrote strongly in favour of his bacillus being the cause of ozæna, and Dr. Hofer, of Vienna, has reported entirely in his favour. If a culture of Perez's bacillus were injected into the ear vein of a rabbit the animal died, and on *post-mortem* examination the bacillus could be isolated from the inferior turbinate bone, but not from the heart-blood. Dr. Smith had injected two rabbits with a mixed bouillon culture of an ozæna crust. Both died after some days, and the bacillus of Perez was isolated from their turbinates. The heart-blood was in one case sterile, and in the other contained a few staphylococci. He had never found this bacillus in the nasal cavities of normal rabbits.

Dr. J. S. Fraser had seen Dr. Kofler in Vienna, who was doing the clinical part of the investigation. Drs. Hofer and Kofler were reporting fifty cases at Kiel. Kofler said his results had been excellent, though not absolutely uniformly so. The vast majority of the patients were able to do without syringing; the crusts did not form, and all fœtor disappeared. Dr. Fraser believed that there were two observers in Budapest working on the same line, and they were reporting 150 cases at Kiel at the same time.

**Chronic Recurring Aphthæ of the Mouth.—A. Brown Kelly and William Whitelaw.**—Woman, aged twenty-seven, has been subject for three years to small, painful ulcers of the mouth, chiefly on the gums and in the gingivo-labial folds. For several months she was treated with arsenic, iron, etc., without decided benefit. Subsequently an autogenous vaccine containing *Staphylococcus albus*, *Endomyces albicans*, and a diplococcus was injected on ten occasions between November and January last, but with little or no improvement. Afterwards three injections of neo-salvarsan were given, and the Wassermann, which was positive, is now negative. Since the use of neo-salvarsan the ulcers have been markedly fewer, smaller, and less painful. It is not suggested that the aphthæ are related to syphilis, but that they may be influenced beneficially by arsenical compounds.

Dr. Logan Turner was interested in the local effect of the salvarsan.

Some of the cases of Vincent's angina are rapidly and markedly improved after its application.

Dr. KELLY said it was specific. Aphthæ were not necessarily connected with syphilis.

Dr. SYME said he had a case in which the appearance was much the same. The patient is free for months, and then there is a recurrence. The first symptom was severe pain in the mouth, then small vesicles form, the crusts come off, and a small pit was left with inflamed edges. The case appeared to him to be more of the nature of herpes. The patient was undoubtedly very rheumatic, and the severe pain coming on before the vesicles form was very suggestive of herpes. In inflammatory conditions about the mouth one was inclined to steer clear of arsenic. He found that glycerine of borax gave the best result.

Dr. BROWN KELLY remarked that the subjects of aphthæ are nearly all chlorotic or anæmic women; the condition persists for years, and is most troublesome to cure. One expected herpes rather to follow the distribution of a nerve, while these aphthæ occur in all parts of the mouth, viz. the cheek, gums, and tongue. Jonathan Hutchinson wrote a good deal about these aphthæ, though probably under another name, and strongly recommended arsenic. He also pointed out that the affection was non-syphilitic, and that it was aggravated by mercury and iodide of potassium. It was the hopelessness of the treatment in previous cases which led him (Dr. Kelly) to try the vaccine. Dr. Whitelaw had carried out the injections.

**Case in which a Cholesteatoma performed the Radical Mastoid Operation.—James Adam.**—T. G——, aged twenty-seven, had suppuration of left ear from infancy till ten years old, when there was some hæmorrhage and the discharge ceased. In January last he became giddy, staggered, and for a fortnight could not go on the street unaccompanied. He was seen in February, when a huge cholesteatomatous mass was cleared out, a minute granulation picked off the facial ridge, and a small fragment of the lower rim of the membrane removed. Nature has cleared out the whole mastoid, lowered the facial ridge to its limit short of producing paralysis, removed the membrane and ossicles, closed the tube and epithelialised the cavity. Labyrinth symptoms disappeared with the removal of the cholesteatoma; whisper, 10 ft.

Dr. MACKENZIE BOOTH related the history of a case he had seen recently which he had treated twenty-three years before. The patient came to him with facial paralysis and mastoid tenderness and a little pain. The mastoid operation was recommended. Prof. Ogston was called in consultation and on operating Dr. Booth found a tumour, the size of a Tangerine orange. It had done the radical operation; only the bone had to be scraped and the part cleansed. The patient was quite well now with the exception of a slight paresis on the right side. It was a big cholesteatoma which had pressed on the dura mater.

Dr. GRAY said he had a similar case at the Victoria Hospital, where the whole operation had been done and it only took five minutes to complete it. Facial paralysis had come on a few weeks before operation. In such cases the prognosis as regards the facial paralysis depended on the rapidity with which the surface of the wound in the bone healed. In his case this occurred in three or four weeks. Electrical treatment was given month after month, though he did not expect any benefit to result. However, six months afterwards the patient came back quite better, much to his astonishment.

Dr. LITHGOW said he had removed a cholesteatoma about the size of a Tangerine orange from the mastoid of an old man. The middle ear was unaffected.

Dr. LOGAN TURNER had had a case recently where the same radical operation was performed. The facial nerve lay exposed, but there was no facial paralysis until after the operation.

Dr. SYME said he had operated on a case where the facial nerve traversed the cholesteatoma unprotected by bone. The nerve was held up by a hook during the operation. Facial paralysis, however, followed. Electrical treatment was persevered in for some weeks. The operation took place about six months ago and the patient returned home with the facial paralysis unbenefited. Still, in view of Dr. Gray's experience, he would not give up hope.

**Orthodontic Case to show the Advantage of Continuous Spring Pressure with Annealed Gold Wire tied to the Teeth, over the older Split Plate actuated by a Screw.—James Adam.**—Boy, aged twelve, had tonsil and adenoid operation in September; expansion begun in October and continued six months. Width across last molars has increased from 5·3 cm. to 6·3 cm. Lower jaw has not followed suit, and the process is now being applied to it. Respiration much improved. Casts shown.

**Case of Malignant Disease involving Hypopharynx and Ostium of Gullet—Apparent Cure under Radium.—James Adam.**—Miss W——, aged forty-six, says she began to feel slight irritation in throat eight years ago; consulted various doctors and was told her throat was granular and rheumatic. From August, 1910, to December, 1912, was treated with bougies for stricture of gullet. During this period symptoms became worse; pain on swallowing and speaking, with continuous discharge of mucus, especially during the night, so that she had sometimes to sit up in bed the whole night. For months the sole diet was milk and bread soaked in milk, and that caused great pain. Weight fell to 105 lb. When first seen by exhibitor in January, 1913, she was very anæmic and looked starved. Small polypoid buds were seen in right sinus pyriformis, and later the growth could be seen extending down the mucous membrane behind cricoid to ostium. A doubtful gland on right of neck. Part of the hypopharyngeal growth was removed, and Dr. John Anderson, Pathologist to Victoria Infirmary, reported: "Proliferation of external epithelium, with indippings of broad epitheliomatous processes and outplanting of areas of epithelium in deeper tissues. The fibrous stroma shows presence of inflammatory cells and young connective-tissue. The case is definitely malignant."

She was taken to a general surgeon, who declined to operate. In December Dr. Logan Turner saw patient; agreed with diagnosis and recommended operation. This she declined, and was referred for radium treatment. After five *séances* of one hour and one of two hours during one month the growth had almost disappeared (50 mgrms. in first two exposures, 100 mgrms. in the others, and so screened that all the gamma rays and 25 per cent. beta rays passed, the chief effect being from beta rays). March 27: radium, 100 mgrms. for two hours. March 30: 100 mgrms. for an hour and a half. All that could then be seen was a small tag of granulation tissue just within the ostium, $\frac{1}{8}$ in. wide, $\frac{1}{4}$ in. long. This was destroyed by cautery. No trace of growth is now to be seen; symptoms have disappeared; patient can swallow solids with

comfort for the first time in five years; and, although there is some contraction of stomach from years of semi-starvation, she has put on 10 lbs. weight and is regaining colour.

Dr. Logan Turner said Dr. Adam had kindly asked him to see this case. Nobody would have doubted clinically that it was malignant; there was no doubt about it also in Dr. Anderson's report. He (Dr. Logan Turner) had taken away a piece. The pathologist who examined it was not at all decided about the malignancy. This might be due, however, to his not having removed a piece of the tumour margin. There undoubtedly was now no trace of any growth. Another patient under Dr. Logan Turner's care, treated with radium, though at first improved had gone from bad to worse. He had had a letter from her doctor recently saying she was too ill to come over for inspection. That was a case of squamous epithelioma. The interesting point in the present case was that the patient had not had a great deal of radium; she was cured with comparatively little, whereas his patient had had radium over a long period. A large mass of the tumour had disappeared, but she was obviously dying on account of what was left.

Dr. Brown Kelly said that there might be a very long period of discomfort in the upper part of the gullet prior to the appearance of cancer. In this connection he referred to the case of a woman who consulted him three years ago for slight irritation in the throat, but in whom the result of examination was negative. She returned two and a half years later with abductor paralysis of the left cord. Œsophagoscopy revealed cancer at the upper end of the gullet. A more striking case was that of a woman who came to him with epithelioma in the hypopharynx, from which she died shortly afterwards. She told him that she had attended a hospital with fair regularity for sixteen years, and had had bougies often passed. In regard to the case under discussion, it was reported that polypoid buds were present in the pyriform sinus in January, 1913, and that she was seen by Dr. Logan Turner in the following December. The course of the disease seemed to him to be unusually protracted; he would have expected the patient to have been dead long before that. He had seen the result; it appeared to be perfect; in fact it was so good that he was inclined to doubt the diagnosis of malignant disease.

Dr. Walker Downie agreed with much that Dr. Kelly said regarding the duration. One case he had hoped to show was that of a woman with difficulty in swallowing, which had lasted six or eight months. It was a case of post-cricoid cancer. The whole of the larynx and upper part of the gullet has been excised. It was an extensive epithelioma. For some years before she came under observation she had had difficulty in swallowing, but no active ulceration had been detected until within one week of the date of operation.

Dr. Adam, in reply, said he did not think that at first it could have been malignant, but everybody who saw it thought it was, and Dr. Anderson's report was quite definite. He (Dr. Adam) had not seen the section. It certainly had been a very mild type of malignancy. They knew, of course, that there were types and degrees of malignancy, and that radium did better in the types approaching those of skin lesions. He had another case of epithelioma of the trachea just above the right bronchus; it also is being treated by radium, but the patient is distinctly worse. It was quite obvious that the treatment does well in some cases but not in others.