The right tympanic membrane is thin. It shows a striking in-and-out movement corresponding to inspiration and expiration. The left membrane moves a little with respiration but the excursion is much less than on the right. Both Eustachian tubes are patent.

DISCUSSION.

Mr. E. A. PETERS said he had seen what appeared to be a similar case to this. Nasal obstruction was noticeable in the present case, and there was definite movement of the membrane, even on light respirations. The drum was atrophic, the result of catarrh and patent Eustachian tubes.

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

Meeting November 3rd, 1933

President—MUSGRAVE WOODMAN, M.S.

CASES

Cancer of the Larynx treated by Surgery and Radium.—WALTER HOWARTH.

Male, aged 35, came to St. Thomas's Hospital three and a half years ago complaining of hoarseness of several months' duration. The left vocal cord was found to be occupied by a growth which extended forwards across the anterior commissure and backwards on to the anterior face of the arytenoid. Biopsy proved it to be a squamous-celled carcinoma.

The correct surgical treatment would undoubtedly have been a complete laryngectomy, but I hesitated to do this in the first instance in the case of so young a subject. The growth was exposed by laryngo-fissure and the anterior third of the right cord, along with the whole of the left cord and surrounding parts, was removed in the usual way. It was not possible to remove the portion of growth which was extending on to the arytenoid, so a palisade of eight radium needles (1 milligramme, with platinum filter), was placed round this. The larynx was packed and left open. The needles were removed on the eighth day and the larynx was closed. Recovery was uninterrupted.

The patient has been wearing a tracheotomy tube for nearly three years, mainly as a precautionary measure, but has now given it up. It has not been thought advisable to close the tracheotomy opening completely. The patient has a useful voice but the glottic chink is, naturally, rather small.

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Royal Society of Medicine

Discussion.

Herbert Tilley said that long before radium was used in the treatment of malignant disease of the larynx, he had a patient in whom the carcinoma had spread on to the face of the corresponding arytenoid, and this extension he deliberately removed, although he felt sure some difficulty in swallowing would ensue. This difficulty was experienced, but after five weeks it ceased, and eventually the patient recovered without further complication. In some cases it was conceivable that the growth might extend to a region unsuitable for radium needles, or in which, without having had the necessary practice, the surgeon would be unable to insert them securely. Even in the faucial regions one might embed radium deeply and find the next day that some needles had worked out. In such a case as the one shown, if the laryngologist could not obtain radium, he need not hesitate about removing the arytenoid by surgical measures, and might reasonably hope that any subsequent difficulty in swallowing would be only temporary.

Sir St Clair Thomson expressed the hope that by using the approach by laryngo-fissure, cases might be successfully treated which might, owing to an attempt at definition, have been left alone or subjected to laryngectomy. The definition to which he referred was that laryngo-fissure was only suitable for cases in which both ends of the cord were free and the cord was mobile. He had operated on many cases in which the cord was not mobile, and with lasting success, and also in cases in which the growth went across the anterior commissure. Mr. Howarth had now shown how this route could be used in more extensive lesions. Hautant, with a little alteration, was doing the same thing. Anything possible and promising was better than laryngectomy. This case showed that the preservation of any glottic chink was valuable. It also showed that the radium, at least, did no harm, as there were no bad results from it after three and a half years. Why did not the exhibitor allow the patient to have a tracheotomy tube? The glottic chink was not sufficient to enable him to carry on properly the life he was living; he could neither ride a bicycle nor run upstairs. He had frequently called attention to the many advantages, and comparatively slight inconvenience of a well-placed tracheotomy in permanent stenosis of the larynx.

References: *Brit. Med. Journ.*, 1928 (i.), 743; *Clin. Journ.*, 1931, lx., 553.

F. Holt Diggle asked whether needles or seeds had been used here. He had had cases in which the growth extended to the arytenoid cartilage, and in one he had used radium seeds, while in two others he had employed superficial diathermy. All three patients were much more hoarse after the operation than patients after laryngo-fissure. All three, beginning from three months afterwards, developed fixation of the opposite cord.

Walter Howarth (in reply) said that laryngectomy was a mutilating procedure, and the surgeon should do his best to avoid it. If the method carried out here failed in any case, the attempt did not constitute a bar to laryngectomy a little later. As this patient was then

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only 31, he (the speaker) felt that he should be given a chance, and he agreed that he should wear a tracheotomy tube; he did have one until a month or two ago, but he became bored by it. As there was a good scarred opening it was not likely to close, and he could, when necessary, place his tube in.

He (Mr. Howarth) had used radium needles in this case because at that moment he could not get seeds. The needles he used were half an inch long, and he employed eight to encircle the growth. He expected some exfoliation of the arytenoid cartilage afterwards, but though œdema occurred and lasted a year, there was no necrosis of the cartilage, and during the last two years the patient had remained much in his present state.

An Unusual Appearance of the Larynx.—T. B. LAYTON.

William P., aged 56. Attended hospital on *July 13th*, 1933, complaining of intermittent small hæmorrhages from the throat for the last five months.

On examination of the larynx, the mucous membrane is seen to be normal, and in the resting position the whole of the right vocal cord can be seen, but not the left. The front and back of the left cord disappear as phonation ceases, the front beneath the false cord, while the back is overhung by the arytenoid. On phonation, the front part of the larynx, including the true and false cords, moves normally, with complete closure of the glottis, but there is something unusual in the movement of the arytenoids. The right arytenoid passes across anterior to the left, and at the same time the two arytenoids appear to fold themselves and approximate their anterior surfaces.

Blood-pressure 154/100. Skiagram of chest, normal. Urine, normal. Wassermann and Kahn reactions negative.

Opinions are invited regarding this appearance, as to whether it is within the normal, or indicates some impairment of movement of the crico-arytenoid joints, or the possibility of a paralysis or paresis of the arytenoideus muscle.

DISCUSSION.

V. E. NEGUS said that from his examination of the case he found it difficult to follow the description, as it described one arytenoid moving in front of the other. The speaker saw the cartilage of Wrisberg of one side passing in front of the other. If Mr. Layton referred to that, it was a pity to speak of the arytenoid. The cartilage of Wrisberg was not connected with the arytenoid. Often there was a difference in the movements of the two sides. The cartilage of Wrisberg was moved by the upper fibres of the sphincter, chiefly the aryepiglottic fibres. In the present patient he could not see signs of paresis. Therefore he suggested that this was a physiological abnormality of a kind which was fairly common.

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A. BROWN KELLY said that the condition present in the posterior part of this patient's larynx was what had been termed "crossing of the arytenoids". Judging from dissections that he had made, the abnormality seemed to be due to want of symmetry of the arytenoids; in one of the specimens the approximating surfaces had presented respectively a rounded prominence and a concavity. As to the cartilage of Wrisberg, in some it stood upright, supporting the ary-epiglottic fold; in others it bent over towards the middle line.

HERBERT TILLEY said that the left ventricular band overhung the left cord much more than its fellow on the right side. It had a sharp edge, and the cord was red, while above and behind the left cord was a small stellate scar. It seemed worth while to consider whether such appearances might not be of syphilitic origin.

T. B. LAYTON (in reply) said that, as Mr. Tilley had pointed out, the important factor in this case was the difference in movement of the two sides. He was glad that so modern an authority as Mr. Negus thought that such a difference was within the bounds of normality. Influenced by the work of Beevor, Horsley, and Semon, he had thought that in the normal person the two sides of the larynx were always mirror pictures, the one of the other, in movement as in structure. When he had seen such differences as in this case he had feared grave disease, and when this had not been found had doubted his own observations.

He pleaded guilty to the use of the word arytenoid. It was inaccurate and yet very useful. They needed a term to include the arytenoid cartilage with its two attendant smaller cartilages (of Wrisberg and of Santorini) with the cellular tissue around and the mucous membrane over them. In his teaching he called all this the arytenoid process, and the surface as viewed from above, the arytenoid region, but he did not know that he had the support of any authority for doing so.

Papilloma of Larynx.—D. F. A. NEILSON.

Patient, male, aged 34.

Operation, 1925, "for papilloma of larynx". His voice has been husky for many years, but was improved by the operation. Recently it has been worse; there is a chronic cough and some dyspnœa with slight stridor.

A large mass is seen on indirect laryngoscopy, most of which is situated above the glottis and in the mid-line. The vocal cords are only seen close to the arytenoids and there is marked loss of mobility.

Multiple Papillomata of both Vocal Cords.—PHILIP JORY.

Male, aged 22. Has been hoarse for two years; also suffers from diabetes.

DISCUSSION.

H. V. FORSTER said that he had rarely seen advanced cases of laryngeal papillomata in adults, but quite recently he had been asked

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to see one of this kind in a seafaring man who appeared to have neglected his laryngeal condition, but had been admitted to hospital because of hæmatemesis. The larynx appeared to be filled with the growth which proved on microscopy to be a papilloma. When such a condition was approached by the direct method under an anæsthetic, the operation might present difficulty, and it would be as well to have at hand the anterior-commissure laryngoscope of Jackson which could be passed well into the larynx and therefore relieve dyspnœa as well as give easier approach to the growths.

F. Holt Diggle asked as to the value of tracheotomy in multiple papillomata; he felt that often it was the quickest way to get rid of multiple papillomata, as there was always the risk of some interference with the mobility of the cords if removal was effected by the forceps or caustics. He had performed tracheotomy in his fourth case, but the patient had to retain the tube for eighteen months. The papillomata disappeared entirely.

W. Stuart-Low said that in such cases he had applied a chloride of zinc solution, in the form of a spray, directly into the larynx. He first used 10 per cent., then 20 per cent., and worked up to 30 per cent., or even 40 per cent. Cocaine should first be applied, then there was no inconvenience. It could be done once or twice a week. In such cases there was much congestion of the larynx, the pharynx and elsewhere, and this kept up the congestion of the cords.

Bedford Russell said that before the European War Mr. Douglas Harmer had used a 50 mgm. tube with a ½ mm. filter held between the cords for a couple of hours, on several cases. In one of the cases Sir Henry Butlin had performed local removal eighteen years previously, but without success. Radium caused the papillomata to disappear, and they remained away for six years.

A. H. S. Walford said he had an adult case which showed that X-rays were of no use in abolishing these papillomata. The man had undergone tracheotomy many years previously, and he (the speaker) had removed the papillomata, at intervals, five times. He had then sent the patient for deep X-ray treatment, but the only result was œdema of the mucous membrane of the larynx, so that breathing was now very difficult.

Herbert Tilley said that in laying down any form of treatment and in appraising its value, it must be borne in mind that laryngeal papillomata resembled multiple warts on the hands or elsewhere. In each case they were locally infective, and no treatment, beyond palliative measures, would be successful until a natural immunity had been established. Then the last local application would get the credit or, possibly, the reputation of the "wart charmers" would be enhanced. He instanced the case of a little boy who, during a period of about two years, had about forty-five surgical interventions, including many openings of the original tracheotomy wound, and wore a cannula at intervals for many weeks during his treatment. The papillomata appeared on the granulations around the tracheotomy opening, and later spread up the posterior pharyngeal wall into the nasopharynx. Then within a fortnight they all disappeared and did not recur.

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D. F. A. NEILSON (in reply) said that as the growth had seemed so obviously a simple tumour he did not remove a piece for examination, as doing so might have disturbed it. He thought that removal was best done by the endoscopic route. The larynx had been opened at least once before. He had intended to use the diathermy current with a special laryngeal electrode, which was designed by Mr. Bedford Russell. It was difficult to get the larynx quiet enough to operate.

P. JORY (in reply) said that in his case the patient had diabetes, for which he was having insulin, and that discouraged prolonged efforts. Mr. Harmer had told him (the speaker) that radium was of no use for papillomata. Americans held the same view, but some result was obtained when the radium was applied unscreened. The only course seemed to be to remove the papillomata piecemeal.

Post-Nasal Tumour: Case for Diagnosis.—J. C. HOGG.

Female, aged 54.

Attended hospital in *March*, 1933, complaining of deafness of the right ear. History of operation on the right antrum (Caldwell-Luc approach) three years previously. In the post-nasal space is situated a sessile, smooth, bluish swelling, attached to the right lateral pharyngeal wall and extending down to the level of the upper pole of the right tonsil. Anterior rhinoscopy shows no abnormality. The Wassermann reaction is negative.

DISCUSSION.

E. BROUGHTON BARNES said that he knew of two cases very similar both in appearance and history. One had been under observation for some years, and a piece of growth had been removed for examination, but no diagnosis had resulted. The condition had not changed. The other case he had seen recently. There had been a sinus operation ten years ago. The nose was clean, but the swelling was present, and the patient complained of a "thick head". X-rays showed definite sclerosis of the bone on the floor of the sphenoid. It would be noted that in both these cases, as in Mr. Hogg's case, there had been a sinus operation some years before. He suggested taking a skiagram in the present case. The hearing was being interfered with and, if left alone the patient would become deaf. He would try to destroy the growth by diathermy in order to clear the Eustachian cushion.

Sir JAMES DUNDAS-GRANT thought that this patient had a serous effusion into the tympanum as a result of closure of the Eustachian tube by the tumour. The deafness could often be relieved by suction-puncture.

J. C. HOGG (in reply) said that probably the operation on the right antrum three years previously was a factor in the present condition.

Angeioma of Larynx.—J. C. HOGG.

Female, aged 30. Attended hospital, *August*, 1933, complaining of slight dysphagia for the preceding twelve months. No alteration in voice.

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Nodular purple, sessile tumour arising from the region of the right aryepiglottidean fold, partially obscuring the right side of the larynx. Opinion is invited as to the best method of treatment.

DISCUSSION.

Sir STCLAIR THOMSON said that anyone approaching angeioma of the larynx should be warned of the danger of the furious and even uncontrollable hæmorrhage which might occur if it were tackled through the mouth, even after a preventive tracheotomy. In former days the galvano-cautery was tried for such cases, but the condition was seldom cured by it. He would suggest a lateral pharyngotomy if symptoms affecting voice or respiration called for interference. It was interesting to recall that spontaneous hæmorrhage was rare in angeiomata of the larynx.

W. G. HOWARTH said that Sir StClair Thomson's advice should be emphasized; some form of external approach was indicated; the best would be through the lateral wall of the pharynx. It would be courting disaster to attempt removal through the mouth.

With regard to angeiomata of the larynx in general—ten years ago a most misleading article had appeared stating that angeioma was a very rare growth in the larynx. It was really a common one, and large numbers of the small growths of the vocal cords could be proved microscopically to be angeiomata.

F. HOLT DIGGLE said that he had seen only one case of pedunculated tumour in the aryepiglottic fold, and radium seeds caused its disappearance in a few weeks.

Laryngectomy for Carcinoma of Cricoid; Closure of consequent Pharyngostome.—JOHN F. SIMPSON.

Henry W., aged 51, seen *July 14th*, 1932, complaining of slight dysphagia and hoarseness for about six months.

On examination.—The edge of an ulcer projected from the back of the cricoid. No glands palpable in the neck.

Operation—(*September 21st*, 1932).—Laryngectomy by H-shaped incision; skin flaps sutured to pharyngeal mucous membrane with no attempt to close pharynx, as the growth had begun to encroach on both pyriform fossae, so that only a narrow strip of mucous membrane of the posterior pharyngeal wall was left in the midline. The small bridge of skin between the trachea and the œsophagus broke down, and after one unsuccessful attempt to reconstitute it some weeks later, it was allowed to remain un-united.

Examination of the growth showed a squamous-celled carcinoma, about the size of a penny, on the posterior surface of the cricoid. Nothing further was done until *February 16th*, 1933, when closure of the pharyngostome was performed under a local anæsthetic. The pharyngostome healed without further operation.

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The patient was fitted with an artificial larynx, and was discharged from hospital on *April 18th*, 1933. He is still having deep X-ray therapy for the neck.

DISCUSSION.

Professor BURGER said that he saw the patient speak with his apparatus, but he did not think this the ideal method of speaking after laryngectomy. He (the speaker) had demonstrated before the Section a patient who accompanied him from Holland some years ago, and who was able to speak well. This patient had learned to speak by using a reservoir of air in his stomach and gullet; this, as was demonstrated by X-rays, was filled at inspiration and used for talking. Some patients who had an artificial larynx laid it aside because they were not satisfied with it. These must be taught to use inspiration and create a new glottis at the " mouth of the gullet ".

J. F. SIMPSON (in reply) said he would take the advice of Professor Burger and try to persuade the patient to manage without the instrument, but he was fond of it, and in his (the speaker's) view, he did quite well with it.

Late Acute Polio-encephalitis.—D. F. A. NEILSON.

Patient, male, aged 27. On *May 30th*, 1933, while he was on his way to work, his throat felt sore and the pain rapidly became severe. Within two hours of the onset there was vomiting, and severe occipital headache developed. The headache and sore throat persisted for five days, and then the vomiting recurred with renewed severity. At the same time the patient had dysphagia and regurgitation of food. One day later dysphonia and diplopia occurred; the diplopia lasted for five days.

When the patient first came under observation the dysphagia and dysphonia were marked and there was nystagmus on looking to the right.

On examination there was weakness of the palate on the left side and of the left side of the tongue, the movements of the larynx and vocal cords were normal.

The voice and swallowing are still slightly impaired, but there is no weakness of any other group of muscles.

Specimen. Torsion of Fibroid Polypus of Pyriform Fossa.—JOHN F. SIMPSON.

Pedunculated tumour, $3 \cdot 2 \times 2 \cdot 1 \times 1 \cdot 2$ cm., growing from a pedicle $1 \cdot 2$ cm. long. Outer surface covered with fibrin and cut surface intensely hæmorrhagic. Microscopically a fibroma infarcted as a result of torsion of pedicle.

Removed by operation on *April 26th*, 1933, from a woman, aged 35, who gave a history of coughing up a pinkish lump and " thought she had swallowed her tonsil ".

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This was diagnosed as globus hystericus by her doctor. Ten months later she again coughed up the lump and bit it. One week after this she complained of sudden onset of dysphagia and increasing discomfort and pain in the throat radiating to the right ear.

Operation.—Large purple mass suspended by pedicle from area of right pyriform fossa, and hanging into œsophageal entrance, removed by direct laryngoscopy at origin of pedicle, which showed two complete twists.

Specimen. Posterior half of tongue and entire Hyoid Bone removed by Median Pharyngotomy on account of Carcinomatous Ulcer.—JOHN F. SIMPSON.

Edward B., aged 55. Admitted to hospital from the casualty department *August 10th*, 1933, on account of urgent dyspnœa. Examination showed large excavating ulcer at base of tongue involving the epiglottis. Marked fœtor and salivation present.

Patient had complained of only slight dysphagia for four months, his main trouble being "a thick voice and much phlegm". The dyspnœa was due to a mass of bleeding growth overhanging the larynx.

Operation (*August 31st*, 1933).—Median pharyngotomy, the divergence of the mid-line incision taking place at the junction of the anterior and posterior halves of the tongue. Removal of greater part of posterior half of tongue together with small remnant of epiglottis and entire hyoid bone. No wire was used for suturing the mandible. Good recovery. Patient was discharged from hospital, *October 19th*, and is now undergoing a course of deep X-ray therapy for the neck. He is unable to swallow but manages to feed himself satisfactorily with an œsophageal tube. There are no palpable cervical glands.

There is a large excavating carcinomatous ulcer occupying the entire width of the base of tongue and this had completely destroyed the epiglottis by the time of operation.

DISCUSSION.

H. V. FORSTER said he would like information as to the success of driving in radium seeds from the outside in such a case using, for example, a seed-gun as described by Souttar. He had now under his care a patient with a deep carcinomatous crater in the right glosso-epiglottic fossa, though the growth had been kept under control for eight months in rather a surprising way by the use at first of partial diathermy and, since the operation, regular treatment at intervals by deep X-ray therapy. He had been surprised at the mobility of the tongue; it was only after several months that this mobility showed obvious impairment on protrusion.

J. F. SIMPSON (in reply) said that he did not use seeds because the growth was enormous and a great number would have been required.

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It was a severe operation, but relief came quickly and the man was much happier. There were no enlarged glands in the neck.

Carcinoma of Epiglottis.—MYLES L. FORMBY.

Male, aged 57, complaining of slight difficulty in swallowing for past two months. Recently complained of pain in left ear. Teeth are in process of extraction. General health good—no cough. Wassermann reaction negative. Skiagram of chest showed no evidence of tuberculosis.

Projecting from the posterior surface of the epiglottis, near the base on the left side, is a rounded tumour, the size of a walnut, the upper surface of which is smooth and reddish, but no ulceration is visible. The tumour completely occludes a view of the larynx, except for the right arytenoid, which appears to be normal.

ABSTRACTS

EAR

Contributions to the knowledge of Mucosus Otitis. H. ROLLIN. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxvii., 333-50.)

The diagnosis of mucosus otitis should not be made on clinical grounds alone, but the organisms must be demonstrated in fresh smears and culture. The reaction which distinguishes the *streptococcus mucosus* from other capsulated organisms is the thionin stain described by Wittmaack.

Mucosus otitis is comparatively rare in children. Clinically it runs an entirely different course from the otitis caused by the *streptococcus hæmolyticus* in which the symptoms develop rapidly (red bulging tympanic membrane, profuse discharge, much pain), while mucosus otitis is characterized by a slow progress and few symptoms in the early stages (tympanic membrane hardly reddened, scanty discharge). If operation becomes necessary in hæmolyticus otitis, suppuration is found chiefly in the centre of the mastoid process and near the antrum; while in mucosus otitis the foci of suppuration are more often found at the periphery, with almost normal conditions near the antrum. Mucosus otitis seems to occur most frequently in individuals with normally developed pneumatic cells.

The critical period in *streptococcus hæmolyticus* otitis is the third week. In mucosus otitis complications occur round about the fifth week. In the author's experience no case of mucosus otitis has ever died from intracranial complications before the fifth

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