where the stomatodœum fuses with the foregut. Most of the recorded cases came under observation in the first weeks or months of life, but in a few the growth persisted to adult life. This might possibly have occurred in my second case had the growth remained a little smaller. Most of the tumours are described as being club-shaped, but some are said to have been like a cherry, as was my second case. It is curious that only some half-dozen of the cases occurred in boys; both the cases I have recorded were female infants.

I am indebted to Dr. Bethel Solomons, Master of the Rotunda Hospital, for asking me to see the first case, and to Dr. Kerry Reddin for sending me the second.

SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY.

March 6, 1931.

President—Mr. Frank Rose.

Papilloma of the Left Vocal Cord in a Case with Pendulous Epiglottis, removed by Indirect Method.—Sir James Dundas-Grant, K.B.E., M.D.

T. V., aged 39, was referred to me at the Cancer Hospital on 7th January 1930, on account of extreme hoarseness of nine months' duration, and difficulty in breathing; there was no difficulty in swallowing. The epiglottis was extremely pendulous and the anterior commissure could be seen distinctly only when the epiglottis was lifted by means of a Mount Bleyer lever. There was a papilloma close to the anterior extremity of the left vocal cord and this I removed with my "safety" endolaryngeal forceps. The voice is now quite clear. No tubercle bacilli were found in the sputum. The microscopical report was that the papilloma was non-malignant.

Discussion.

Mr. Andrew Wylie congratulated the exhibitor on having removed by the indirect method a papilloma which was close to the anterior commissure, as this was the most difficult situation from which to remove a growth. Lately he (the speaker) had discontinued using the indirect method in favour of the direct one, which was much easier, and enabled one to remove a growth more cleanly and more thoroughly. He would like to

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know why Sir James did not use the direct method in this case; also, why he did not use a Horsford's needle-and-thread to pull back the epiglottis, which was in the way.

Sir JAMES DUNDAS-GRANT (in reply) said it was simpler to use the indirect method when practicable. The anterior commissure was the most difficult situation to deal with either by that or the direct method, and it would have been almost impossible to have done so without such forceps as his own. As to the needle-and-thread, he had had several forms of it for the epiglottis. He had many apparatuses for lifting the epiglottis, which he proposed to bring before the Section. He preferred the Mount Bleyer epiglottis lifter, which was a tongue-depressor, rather bent at the tip, and was pressed between the epiglottis and the tongue, thus acting as a lever and tilting the epiglottis. It was meant for diagnostic purposes, but he remembered a difficult case in which Dr. Abercrombie had manipulated the Mount Bleyer lever, and he (the speaker) had removed the growth by means of his "safety" endo-laryngeal forceps.

Carcinoma of Right Vocal Cord removed by Laryngofissure.—Sir JAMES DUNDAS-GRANT, K.B.E., M.D.

W. H. N., aged 54, referred to me at Brompton Hospital in September 1930, on account of hoarseness of nine months' duration. The case had been diagnosed elsewhere as one of tuberculosis of the larynx and was sent to a tuberculosis centre. No physical signs in chest; no tubercle bacilli found in sputum. A growth extended along the anterior two-thirds of the right vocal cord, and a portion of this was removed for microscopical examination and was found to consist of squamous-celled carcinoma. On 31st October 1930 I removed the whole of the right vocal cord, and most of the right half of the thyroid cartilage, by laryngofissure. There is no sign of recurrence and a useful voice is steadily developing.

Laryngectomy for Epithelioma. Condition after Ten Years.—LIONEL COLLEDGE, F.R.C.S.

Patient, male, aged 44, had a growth occupying the left vocal cord, crossing the middle line in front and extending behind across the vocal process to the middle line. It also dipped into the subglottic region for half an inch. A biopsy by Sir St Clair Thomson proved the lesion to be epithelioma.

The larynx was removed on 2nd May 1921, by the operation of Keen, from below upwards, the trachea being fixed to a button-hole opening in the skin above the jugulum. The growth was found to be coming through the left half of the crico-thyroid membrane and invading the pre-laryngeal muscles. Primary healing of the wound, without leakage, followed and normal swallowing was regained in ten days.

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The patient presented himself for re-examination just five years later and complained of discomfort and deafness in the right ear. A granulation presenting through the tympanic membrane was removed and was found to be epithelioma. A wide radical operation with removal of the auricle was performed, and there has been no recurrence in either situation.

Perichondritis of Larynx secondary to Epithelioma.—LIONEL COLLEDGE, F.R.C.S.

Patient, male, aged 47, husky since January 1929; underwent various forms of treatment until eventually an abscess in the neck was opened and tracheotomy was performed, in Essex, in March 1930. Later sent from the London Hospital to Guy's Hospital for deep X-ray treatment. Mr. Mollison there removed a piece of tissue from the larynx, proving the presence of epithelioma. A fresh tracheotomy was performed and, as there was no improvement after three X-ray treatments, Mr. Mollison sent the patient to St George's Hospital.

The larynx was then much widened and was fixed by inflammatory exudation. Two sinuses in the front of the neck led down to the cartilage of the larynx and lower down was a high tracheotomy. Laryngoscopy showed a malignant ulcer invading the base of the epiglottis. No enlarged glands were palpable.

3rd December 1930.—Complete laryngectomy was carried out from above, the skin in front of the larynx, including the two sinuses and the track of the tracheotomy, being removed with the larynx in one piece. The skin sacrificed was replaced by bringing two lateral skin flaps down to the stump of the trachea and two up from below on either side, and creating a pharyngostome below the hyoid bone.

Healing followed without any sloughing and the pharyngostome was closed by a plastic operation on 20th January 1931.

The specimen shows perichondritis of the larynx with necrosis of the cartilages, and diffuse intrinsic epithelioma creeping up the laryngeal surface of the epiglottis. Microscopically the growth is a very cellular squamous carcinoma.

Carcinoma of Sinus Pyriformis.—LIONEL COLLEDGE, F.R.C.S.

Patient, male, aged 53, had for six months slight difficulty in swallowing, and pain going up to the right ear. On admission to hospital he was able to swallow only soft food and his voice was muffled. A growth was visible in the right pyriform fossa, and a large, hard gland under the anterior border of the right sterno-mastoid at the level of the hyoid bone was felt.

22nd December 1930.—The side of the neck was cleared, the sterno-mastoid and internal jugular vein being removed. The external carotid artery was not ligatured. By lateral pharyngotomy the growth,

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which was the size of a sixpence, was removed from the pyriform sinus with a good margin, and the raw area was lined with a flap of skin. The opening in the pharynx was stitched wide open to the skin of the neck.

12th February 1931.—The opening in the pharynx was closed in two layers by a plastic operation.

Carcinoma of Larynx treated with Radium.—V. E. NEGUS, M.S.

Patient, male, aged 56, first seen 11th June 1930 with a history of hoarseness for six months. A nodular growth extended along almost the whole length of the right vocal cord and involved the right ventricular band. The left cord was unaffected.

After consultation with Mr. Colledge, biopsy was carried out; sections showed carcinoma of Broder's Group III type. Neither laryngo-fissure nor partial laryngectomy was considered sufficiently drastic and total laryngectomy did not appear suitable as the patient was not robust.

7th July 1930.—Seven needles of radium, each of 1 mgm., were inserted by Mr. Colledge under local anæsthesia. The needles were arranged in the form of a palisade, after removal of the greater part of the thyroid ala; they were removed eleven days afterwards.

The larynx when seen recently was almost normal; the patient appeared to keep well and had a good voice.

DISCUSSION.

[The three cases shown by Mr. Lionel Colledge and that shown by Mr. V. E. Negus were discussed together.]

The PRESIDENT said that Mr. Colledge's first case illustrated one great advantage of total laryngectomy, namely, the long freedom from local recurrence. If any other method had been carried out he questioned whether the patient would have been so well to-day.

From time to time at meetings of the Section, cases had been shown in which perichondritis had been the first and most obvious symptom, and the fact that it was secondary to malignant growth inside the larynx had been discovered only at a comparatively late stage.

Mr. J. B. HORGAN said that pain radiating to the ear was a common symptom in malignant disease of the pharynx and larynx. He could recollect patients who had complained only of pain in the ear. Upon examining the pharynx he had found well-marked epithelioma of the tonsils, though there had been no complaint regarding the throat.

A possible explanation of pain in the ear in these cases was the interconnection between the pharyngeal and other nerves, as, for instance, the communication through the spheno-palatine ganglion, between the descending palatine and the vidian nerves, and hence with the tympanum. These neuroses and their ætiology had been explained by the late Dr. Sluder, of Chicago, in his book on nasal neuroses.

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Mr. HERBERT TILLEY said that pain referred to the ear was not uncommon in cancer of the larynx, especially in advanced stages, and also in tuberculous laryngitis. It was also a quite frequent symptom of calculi, or of retained septic accumulations in the tonsil. In such cases as had been discussed the pain was referred to the ear by primary stimulation of the laryngeal terminals of the superior laryngeal nerve. The path of the sensory impulses would appear to be by way of the superior laryngeal nerve, nucleus of the vagus, recurrent auricular branch of the vagus, to the recurrent cutaneous branch of the facial nerve, which was distributed to the skin of the lower posterior part of the auricle and over the mastoid. The subject had been studied by Albert Gray (*Proc. Roy. Soc. Med.*, 1921, Sect. Otol., vol. xv., p. 15) and by Ralph Fenton (*Amer. Otol. Soc.*, 1st May 1928).

Mr. J. F. O'MALLEY said that in several cases of post-cricoid carcinoma pain was referred to the ear, and carcinoma in the pyriform region would be likely to give the same symptom. He had been familiar with it for some time.

Mr. V. E. NEGUS said that in his own case the growth had seemed too extensive for laryngo-fissure to be practicable. Finding that it was a Group III growth, he thought it unsuitable for a limited operation, as the chance of recurrence was too great. The only operation possible would have been total laryngectomy, but the patient appeared fragile and unfit for the risk, and therefore Mr. Colledge was requested to apply radium. Under radium treatment the patient did very well. Tracheotomy was not performed. In one or two cases he (the speaker) had done what had been suggested by others, namely, prepared the front of the trachea by exposing it, and then sewed it up again, so that it was ready for the instant insertion of a tracheotomy tube if this was necessary. But in the present case the patient had no difficulty with his breathing. The radium was inserted under a local anæsthetic, and there had been no sepsis or reaction. The patient had been watched each month and apparently remained well.

Sir JAMES DUNDAS-GRANT said that if he had his case of laryngofissure to do again he would insert radium, though he recognised the difficulties. He was the more encouraged in this view by the success obtained by Mr. Negus.

Mr. VLASTO, speaking with reference to the question of tracheotomy following the insertion of radium through a window in the thyroid cartilage, said he understood that Mr. Harmer, whose technique he had followed, considered that a tracheotomy was the safer procedure. During the past week, he (the speaker) had had to deal with a case of advanced cancer of the larynx, and Mr. Carter Brain and he had inserted eight needles, each of 1 mgrm., which were to be removed the next day. He had seen the patient daily throughout the week, and had ascertained by blocking the tracheotomy that a definite slight stridor was present, but not so marked as to endanger the man's life.*

* POSTSCRIPT.—After hearing the views expressed at the meeting, I have removed the tracheotomy tube, and so far no untoward effect has occurred. [M. V.].

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Mr. N. S. CARRUTHERS said that he had had two cases which were inoperable by laryngofissure, one twenty-two months and the other eighteen months ago. In each case the usual "window" operation had been performed, together with tracheotomy. The immediate result was excellent but he regretted to say that in the second case the growth had recurred necessitating further radiation. He was doubtful of the permanent cure in these cases.

Personally he felt much happier if tracheotomy was performed, as in his experience considerable œdema followed irradiation.

Mr. DOUGLAS HARMER said that in his first twelve cases tracheotomy had been performed, but now he and his colleagues made a rule never to perform tracheotomy unless the patient had difficulty in breathing while under the anæsthetic. If both cords were freely movable, tracheotomy was rarely necessary after radium was inserted, because even if œdema supervened, the movable cords nearly always allowed the patient to breathe long enough to enable one to arrange for tracheotomy. If the growth had caused fixation of the affected side and had extended across the middle line, so as to make the other cord a little sluggish—and particularly if it had extended to the subglottic space—it was advisable to expose the trachea and do what one of the patients called "an amateur tracheotomy," *i.e.*, cutting down on the trachea without opening it.

Another point was that of filtration. When he began to treat with radium, he found that in using a milligram needle, if only 0·5 filtering was used, œdema frequently followed if the radium was kept in for a long time. But if one wanted to place radium against cartilage or against bone, one could employ massive doses without fear of causing perichondritis or periostitis, so long as the filtration was increased. When desiring to give a long treatment with radium he used 0·6 mm. filtration, or as much as 1 mm.

The cases which he and his colleagues had treated with radium were divided into early and late. In the earlier cases there were surprisingly good results. Out of fifteen early cases, eleven patients were living up to $5\frac{1}{2}$ years. Of the others, one died from heart disease, and after radium treatment there had been only three recurrences. In the late cases they had been obtaining bad results, but they found that they had not been covering the whole of the disease; they had been treating only the upper limit, and were leaving out the subglottic and other extensions. In advanced cases a more extensive operation, such as that described by Hautant, should be performed. Both the thyroid cartilage and the lateral part of the cricoid should be removed, so that long needles, or a number of smaller ones, could be inserted, and the side of the larynx irradiated over a much wider area. In such cases there was more chance of mutilating the larynx.

Swelling on Right Vocal Cord.—W. A. MILL, F.R.C.S.

Patient, female, aged 31, complains that since undergoing tonsillectomy five years ago she has suffered from hoarseness. As a teacher of swimming she has to use her voice a good deal. There is a

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swelling of the right vocal cord at the junction of the anterior and middle thirds.

DISCUSSION.

The PRESIDENT said that there appeared to be a swelling on the left vocal cord also.

Dr. LOGAN TURNER said that he too regarded the vocal nodules as bilateral.

Mr. A. WYLIE agreed with Dr. Logan Turner. This was practically a case of singer's nodules, and he thought Sir James Dundas-Grant's forceps would remove them.

Pachydermia Laryngis.—W. A. MILL, F.R.C.S.

This patient, aged 62 years, has been hoarse for about eight months. There are two round, pink swellings at the posterior ends of the vocal cords. The case is shown because this appearance is regarded as unusual.

Sir ST CLAIR THOMSON said that at first the swellings suggested one of the usual forms of pachydermia; they were typically limited to the vocal process on each side. One side did not fit in with the opposite side; both were cupped, and they were lipped all round. Though the patient was a labouring man, his arm muscles were much wasted. He (Sir St Clair), finding this, had therefore asked him whether he had a cough, and he replied that he had recently coughed up half a cupful of blood. He (the speaker) thought the condition would prove to be tuberculous. Among the elderly patients at Midhurst, many had what he would formerly have called pachydermia. In the works of Morell Mackenzie and others pachydermia loomed large. Tuberculosis was a much more common cause of the condition than syphilis.

Syphilitic Laryngitis.—W. A. MILL, F.R.C.S.

The patient has been hoarse for about seven months. Both vocal cords are red and swollen and there is a grey irregular swelling extending along the length of the cord in the right subglottic region. The skin over the right mastoid region shows gummatous infiltration. The Wassermann reaction is strongly positive.

DISCUSSION.

The PRESIDENT said that the right vocal cord did not move very freely; it had a nodular appearance, and aroused a strong suspicion that the condition might prove to be something more serious than syphilis.

Mr. HERBERT TILLEY said he had no doubt that the case was one of epithelioma, developing in a syphilitic subject. In many of his cases there had been a history of syphilis and yet the laryngeal lesion had proved to be cancer. Five weeks ago he saw a patient, aged 77, who had a definite history of syphilis when he was a young man, for which he had been

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treated. His larynx was now similar to that in Mr. Mill's case, *i.e.*, both cords were involved. When he (the speaker) first saw his patient, the cords had moved freely, though there was an extensive amount of disease, and he had asked himself: "Is this syphilis?" With such an amount of disease one would have expected some infiltration, laming one or both cords. The patient was put on to full doses of iodide and mercury three weeks ago, but it had had no effect on the growth, and yesterday the right arytenoid was very œdematous and there was some stridor. He had warned the patient's medical attendant that tracheotomy might be necessary at any time. One should not be unduly influenced by a positive Wassermann reaction and waste time with anti-syphilitic remedies if and when clinical appearances were strongly in favour of malignant disease. In the present case a biopsy would possibly be helpful.

Sir ST CLAIR THOMSON said it would be almost impossible to get a satisfactory piece for biopsy. Syphilis led to paresis and even to fixation of the cord. He (the speaker) suggested that intensive treatment with mercury should be given for three weeks, and if the condition had not then improved, it should be regarded as subglottic epithelioma. The remarks of Mr. Harmer confirmed his own view that subglottic epithelioma was more frequent than it was formerly thought to be.

In a paper read recently before the Section of the History of Medicine, Mr. Colledge had adduced satisfactory evidence, with regard to the historical illness of the Kaiser Friedrich, that the growth had previously begun as a subglottic one.

Mr. W. A. MILL (in reply) said that the patient had been attending hospital for three weeks, and, when he first came, there had been a large gumma behind the ear; this had now practically disappeared. He had had potassium iodide and mercury for three weeks, but as yet there was no change in the larynx. Malignant disease had been in his own mind. Mr. Lloyd, Director of the V.D. department at Guy's Hospital, said that he had found late tertiary syphilis in the larynx to be very rare; during six years in that department he had had only one case.

Pulsating Hæmangioma on Dorsum of Nose.—HERBERT TILLEY, F.R.C.S.

G. W., female, aged 21.

There is a soft ovoid swelling about 2 inches long and 1 inch broad, which occupies the middle third of the dorsum of the nose. The skin over it is of a mottled bluish colour. Pulsation synchronous with the pulse is easily detected during light palpation. The nasal cavities are normal. Seven years ago the patient had several applications of carbonic acid "snow," but this did not reduce the size of the swelling which, she thinks, has recently increased.

Mr. W. J. HARRISON said that he had recently treated, by the diathermy needle, a case of large angioma at the side of the face of a child, which was almost closing its eye. That treatment had reduced the swelling by two-thirds. The subsequent scarring was the disadvantage of this method, which had to be used in some cases.

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Societies' Proceedings

Syphiloma of Larynx. Treatment by Intravenous Injection of Arsenobillion.—E. A. PETERS, F.R.C.S.

This patient, aged 44, was admitted to hospital suffering from loss of voice and slight dyspnœa. The larynx was occupied by three large plaques affecting the false cords and posterior commissure. The Wassermann reaction was feebly positive.

The breathing was relieved by an intravenous injection—the first of a series—of 0·15 gr. arsenobillion.

Mr. RITCHIE RODGER said that what interested him most was the granulomatous condition of the posterior part of the right cord. He did not doubt that, the true nature of the disease having been discovered so early, this would disappear on intensive treatment, but when cases of the kind were missed for a long time the granuloma was apt to become larger, and, with the movements of the larynx and the air currents, also to become pedunculated. Nine years ago he had had a case transferred to him from the V.D. department because of dyspnœa. The man was then undergoing treatment, but the condition had been missed for a considerable time. The granuloma had become quite firm, and during expiration it was thrown up between the cords. Another which was posterior to it was also seen on forced expiration. He (the speaker) had attempted to grasp it by the direct method and remove it, but it was so tough that he felt he would tear out the larynx in doing so. He performed a laryngofissure, and found that the whole subglottic region, on both sides, was involved, and that there was a tendency to pedunculation in different parts. It was necessary to remove much of the hypertrophied mucosa from both sides. The patient made a good recovery, eventually dying from an acute abdominal condition.

Carcinoma of Pharynx, suggesting Local Control by Diathermy.—ALEXANDER R. TWEEDIE, F.R.C.S.

Katherine W., aged 58, admitted to Nottingham General Hospital 21.10.30, with a history of hoarseness of ten months' duration. Wassermann reaction negative. No tubercle bacilli in sputum. Indirect examination, Neoplasm involving the base of the tongue, right aryepiglottic fold and right side of epiglottis.

27.10.30.—General anæsthetic. Directoscopy (Haslinger). Section removed for examination. Tracheotomy.

13.11.30.—*Pathologist's Report.*—"Sections show fibrous tissue covered with squamous epithelium which is in places rather thickened. I can see nothing which suggests tuberculous disease."

28.11.30.—General anæsthetic. Suspension laryngoscopy, as the previous examination had shown that exposure of the hypopharynx was essential. Neoplasm treated with diathermy.

2.1.31.—Suspension laryngoscopy and repetition of diathermy. Treatment did not disturb the power of swallowing except, very temporarily, immediately afterwards.

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7.1.31.—*Pathologist's Report on further Specimen.*—"Squamous epithelioma."

27.1.31.—Patient died as the result of secondary deposits in abdomen. The original neoplasm seems to be well under control.

Tongue showing Inflammation of Glands of Blandin.—ALEXANDER R. TWEEDIE, F.R.C.S.

William W., aged 52, admitted to Nottingham General Hospital (28.12.30) with an ulcerating neoplasm of the right side of the tongue, situate about opposite the molar teeth. Wassermann reaction negative.

29.12.30.—As the clinical appearance strongly suggested a malignant neoplasm, a block dissection of the corresponding lymphatic glands was performed.

12.1.31.—Excision of right side of the tongue with diathermy.

Pathologist's Report.—"No infiltration of the lymphatic glands; the neoplasm of the tongue consists of hyperplasia of the glands of Blandin."

Specimens of Pituitary and Laryngeal Tumours from the same Patient.—A. J. WRIGHT, F.R.C.S.

These specimens were removed post-mortem from a man, aged 40. The case was a typical one of acromegaly of five or six years' duration. Three years ago the pituitary tumour was exposed by the sphenoidal route, a considerable amount of new growth was removed, and radium was inserted. Marked improvement resulted and persisted. Laryngeal obstruction was first noted six months before death took place. Death resulted from hæmorrhage into the air passages, following tracheotomy.

Points of Interest.—(1) The occurrence of two *malignant* tumours of different types in the same individual. (2) The pituitary dysfunction. Was this a factor in the production of an epithelioma of the larynx at an early age? (3) The symptomatic improvement resulting from operation and radium application to the pituitary tumour. (4) The degree to which a slow-growing tumour can compress the base of the brain without producing paralytic phenomena.

Pituitary Tumour.—This consists of a large lobulated growth, which has destroyed the pituitary fossa and penetrated the dura mater, forming large pedunculated masses in the middle cranial fossae. Microscopically, the tumour is an adeno-carcinoma arising in the pars anterior of the pituitary body.

Laryngeal Tumour.—The specimen shows a mass of growth involving the whole of the right vocal cord and subglottic region. Histologically, it is a typical epithelioma.

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