SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE—LARYNGOLOGICAL SECTION.

December 7, 1917.

President: Dr. A. Brown Kelly.

Abridged Report.

Photographs, Specimen and Slide from Case of Teratoid Growth or Hairy Polypus of the Nasopharynx.[1]**—A. Brown Kelly.**

Collection of Dental Cysts and Cysts of Floor of the Nose.—A. Brown Kelly.—The points to which it is desired to direct attention are:

(1) *The Confusion of Dental Cysts with Supposed Diseases of the Antrum.*—Within the last few years it has come to be recognised that the conditions described as "hydrops antri Highmori," "distension of the maxillary sinus by fluids or mucous cysts," "empyema of the antrum with blocking of the ostium and bulging of the walls," do not exist as such, but are really produced by dental cysts invading the antrum. As a result of our more exact knowledge dental cysts are now diagnosed much oftener than formerly. I have met with over thirty cases during the past eleven years; previously, with few exceptions, such cases were regarded by me as varieties of antral disease, or as due to periostitis of the superior maxilla.

(2) *The Differentiation of Cysts of the Floor of the Nose from Dental Cysts.*—It has been shown[2] that retention cysts occasionally develop in the anterior part of the floor of the nose, presumably from long ducts present in this situation. Various stages in the development of these cysts have been observed, from a small, delicate, rounded bulging of the mucous membrane just beyond the vestibule, to a sac as large as a cherry, with dense walls, causing elevation of the ala and extensive erosion of the bony edge bounding the nasal cavity below. As these cysts have been proved to have no genetic connection with the teeth it has been claimed that they should be placed in a special class. These conclusions are based on three cases I previously reported and seven I subsequently observed. Dental cysts may extend upwards, raise the ala, and also produce a bulging of the nasal floor. Some writers, apparently unaware of the existence of cysts of the floor of the nose, have described this cushion as a useful diagnostic sign of a dental cyst. The reports of several of their cases indicate, however, that they were dealing with cysts which had really originated in the nasal floor.

(3) *Treatment.*—Most of the dental cysts were removed by dissection: the smaller were scraped out, and in a few cases only a portion of the wall was excised, the remainder afterwards shrivelling and the cavity becoming obliterated. Cysts of the floor of the nose when small were punctured in the nose and cauterised. The larger were dissected out from the mouth.

[1] Fully reported in Journ. of Laryngol., Rhinol., and Otol., 1918, xxxiii, p. 65 (with photograph).

[2] Journ. of Laryngol., Rhinol., and Otol., 1898, xiii, p. 272.

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Retention Cyst of the Nasal Floor.—Irwin Moore.—Patient, a male, aged fifty-three, first seen on September 12, 1916, complained of a swelling on the right side of the nose and adjoining portion of the cheek, which had existed for six months.

On examination: A round, tense, fluctuating swelling, the size of a small walnut, was seen occupying the floor of the right nasal vestibule, causing considerable obstruction, and gaping of the nasal orifice. There was marked bulging outwards of the right ala nasi with partial obliteration of the naso-labial sulcus, and protrusion forwards of the upper lip, whilst the swelling extended downwards to the right of the middle line under the lip, causing obliteration of the gingivo-labial furrow. Considerable facial disfigurement resulted, as may be seen from the photograph exhibited. Many septic stumps were present. The case was to have been shown at the meeting on November 3, 1916, and it was my intention to remove the cyst sublabially. In the meantime the patient attended the Dental Department of Charing Cross Hospital to have some teeth extracted, where the cyst was incised sublabially by the dental surgeon, and emptied of its contents, which consisted of a thick, pale yellow exudation. As a result of drainage and packing with gauze wicks the wound gradually healed up, and the cyst has not again refilled.

Short preliminary notes of the case were published in the JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOLOGY, vol. xxxii, p. 103.

Mr. HERBERT TILLEY: I have found that most of these cysts are connected with a carious incisor tooth, either central or lateral, and that their contents include cholesterin crystals. I would ask the President whether he has found such crystals in the retention cysts. With regard to operation, I have followed a procedure similar to the President's. The large cysts sometimes extend back, like the finger of a glove, and raise the floor of the nasal fossa, and I prefer to approach them from underneath the lip, to scrape out the mucous membrane lining of the cyst, and then, pressing down the whole cyst-wall from within the nose, one gets a very quick and excellent result. An advantage of that method is the avoidance of prolonged suppuration within the nasal cavity.

Dr. D. R. PATERSON: There are difficulties with some cysts even after dissecting out the sac. We have had to remove a considerable quantity of bone in such cases, and it has been suggested to me that the use of decalcified bone tissue, grafted, would help. Have members had experience of it in these cases? In two cases, when dealing with a very large cyst which encroached on the antrum, so that there was very little antrum left, instead of removing the whole cyst-wall I threw the cavity into the nose, just as is done in the radical antrum operation, and both the cases did well. These cases sometimes require considerable attention, and do not always heal up as smoothly as has been said.

The PRESIDENT (in reply): I am not sure that I have found cholesterin crystals in retention cysts, but those I have termed retention cysts have no connection with the teeth. In reference to Dr. Paterson's remark, the cyst does not require to be dissected out, but if well opened it will shrivel up, and need very little further attention.

Pharyngeal Pouch treated by Diverticulopexy.—William Hill.—Man, aged forty-three, complained of suffering from dysphagia, regurgitation of food, and gurgling for six months. The diagnosis was confirmed by endoscopic and X-ray examinations. The pouch, which was bound to the gullet by fascia, was dissected free, and the fundus of

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the unopened pouch stitched to the left side of the inferior constrictor muscle. As the result all symptoms have for the time disappeared.

Mr. E. D. D. Davis: Was the diverticulum or sac firmly attached by fibrous tissue to the pharynx and was dissection difficult? Mosher has published a paper in which he records three successful cases in which he divided the party wall between the sac and the pharynx as far as the fundus of the sac by the use of the endoscope. After the first case he feared mediastinitis, but it did not occur. If the diverticulum is not adherent to the pharynx Mosher's treatment may result in mediastinitis. Perhaps the relief of the symptoms is due to having divided the lower horizontal band of fibres of the inferior constrictor muscle. These diverticula are really herniæ between the oblique and horizontal sets of fibres of the inferior constrictor and consist of mucous membrane only, and this has been shown by the sections of the diverticula cut by Prof. Keith and myself. The pathology of these diverticula is similar to that of inguinal hernia, viz. there is increased pressure due in this instance to the act of swallowing, and secondly to a weakness in the wall of the pharynx where the pouch protrudes. I think that the increased pressure can be augmented by the sphincter action of the lower fibres of the inferior constrictor, though, if one examines these cases during operation, no stenosis is found below the sac. Mr. Waggett and I recorded a case five years ago in which the sac was free and there was no difficulty in separating it from the wall of the pharynx and turning it upwards. Mr. Waggett inverted the sac into the pharynx and stitched up the slit-like opening left on the outer aspect. In Mr. Waggett's case the patient sneezed violently eight months after operation and out came the pouch with recurrence of the symptoms, and at the second operation the pouch was found in the same position as before. With regard to excision of the diverticulum, I know of two cases of recurrence in which the sac was excised and the aperture in the pharynx carefully stitched with two layers of sutures; one recurred five years after operation by Mr. Charters Symonds, and in Mr. Waggett's case the symptoms commenced to recur two years after operation. I should like to know if members have heard of recurrence after excision of the sac.

Dr. Dundas Grant: One case of mine died, the other recovered, and we have not heard of any recurrence. But there was no close adhesion between the sac and the œsophagus, and in neither case could Mosher's operation have been practised with any likelihood of success. In the first case the sac on the right side was stretched a long way down, and when released from its attachment it shrank up to the size of a finger-stall. To prevent recurrence, I think it important to continue dilating the upper orifice of the œsophagus: I am sure the contraction there has to do with the formation of the sac. I described a case in which all symptoms of pharyngeal pouch were present when there was no pouch, though there was pouching. The symptoms disappeared after dilatation of the upper orifice of the œsophagus. It might have been well to obliterate the neck of the pouch, because if left open for drainage the chance of food getting into it is great. Goldman's operation was accompanied by a ligature and twisting up of the pharyngeal pouch before bringing it to the surface. Its tail was stitched into the wound ready to be pulled out when loose at the site of the ligature.

Dr. Kelson: In two cases of complete removal of pouch I have had there was no recurrence in one for two years, and in the other for three years, after which the patients disappeared. Both were between sixty

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and seventy years of age. The extraordinary way in which these patients improve in health and put on flesh afterwards fully justifies the operation.

Mr. E. D. D. Davis: Halsted informs me that he had one case in which he ligatured the sac near the wall of the pharynx and allowed it to lie in the neck wound, which was packed with gauze, but the patient died of pneumonia a few days later.

The President: Dr. Hill has introduced an important modification in the treatment of pharyngeal pouches. I have had a few cases of the kind, but most of them have been in very old persons in whom surgical interference was inadmissible, while for the others I have hesitated to urge operation owing to the mortality. Has Dr. Hill found the pouch arising, as usual, above the fundiform fibres of the inferior constrictor, or in the weak triangular space bounded above by these fibres and laterally by the converging bundles of longitudinal fibres of the œsophagus?

Dr. Hill (in reply): In the two cases which have been operated upon the pouch was between the horizontal and the oblique fibres of the inferior constrictor: that is to say, the neck of the sac was surrounded by the inferior constrictor, and I assumed it was the position, because both Killian and Keith worked it out at that site. Zenker was the first to demonstrate that they perforated the constrictor muscle, though he pointed out that Rokitansky had found *post-mortem*, in one case, that it did come through the substance of the inferior constrictor. Zenker visited the museums of Europe, and got permission to dissect and examine specimens. He found they were all pharyngeal, not œsophageal. Mr. Davis has shown the untenability of Hackermann's linear triangle myth; there is no weakening oft he upper part of the gullet itself. I have looked for it in all the cases I have seen, but there was a hiatus between the two constrictor bundles of muscles in both operations. Dr. Grant asked why I did not obliterate the neck. This is what Halsted did, and, as Mr. Davis said, he had a death. It is quite likely that that patient died from the sloughing at the ligatured site, and the supervention of coli infection, mediastinitis and pneumonia. As to whether the pouch was bound down by fascia, it was so in both cases, and careful dissection was necessary, and I was glad to have a bougie in the pouch, so that I could dissect the fascia between the gullet and the pouch. I have read of many cases, and in some they separate easily: I mean the large ones, in which one tears the fascia readily when it is put on the stretch. But in these two cases there had been much binding down, and I felt nervous about the recurrent laryngeal nerve. I should never think of doing Mosher's operation, running the risk attendant on operating in the dark when an open method was available to me. At the smallest indication of the pouch filling I shall dissect it out, and, ligaturing the neck, in view of what has been said about recurrence, I shall stitch the bundles of muscular fibres together, to see if that makes any difference. The tendency in both operations is towards recurrence.

Tuberculosis of the Larynx in a Female Patient; Dyspnœa and Regurgitation of Liquids during Drinking relieved by Intra-laryngeal Operation.—J. Dundas Grant.—Mrs. B——, aged thirty-one, had suffered from gradually increasing hoarseness for three years, and complete loss of voice for six months. She went to the Sanatorium at Bournemouth in August of this year. While there she began to have difficulty and pain on swallowing, which first showed itself by a feeling of choking during drinking. Shortness of breath and difficulty in

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breathing developed later, and about fourteen days after its development (on October 30) Dr. Davison, of Bournemouth, who sent her up to Brompton Hospital, reported that there were signs of pulmonary mischief. I found shiny infiltration of both aryepiglottic folds and ventricular bands, with nodular infiltration of the upper surface of the right vocal cord. There was a tuberculous deposit in the interarytænoid space interfering with a closure of the vocal cords, producing inspiratory stridor and also regurgitation of liquids into the larynx during swallowing.

I removed a thick transverse piece of tissue from the interarytænoid space. The breathing was then easier. She was ordered anæsthesin powder for inhalation by means of a LeDuc's tube, and to drink fluids through an indiarubber tube.

On November 13 galvano-caustic puncture was made in the right ventricular band and vocal cord and in the left ventricular band, and on November 23 again in both ventricular bands.

On November 24 the ventricular bands had shrunk so as to permit of a view of the anterior commissure, where there was a rounded nodule projecting between the cords. This was removed by Landgraf's forceps. It was seen that the cords were approximated at their posterior extremities and did not separate sufficiently during inspiration. My intralaryngeal forceps, opening from side to side, were introduced and opened so as to dilate the larynx.

There is now no pain on swallowing and no regurgitation of liquids during drinking, the patient not finding it necessary to use anæsthesin before taking food, and although there is a slight degree of stridor on inspiration there is no difficulty in breathing, and she can run upstairs, which she was frequently quite unable to do. The voice is a little more than a whisper. She is taking syrup of garlic, but as she had little cough or constitutional disturbance it is scarcely a case for demonstrating the efficacy of the remedy. Subjectively, however, she is feeling very much better.

Regurgitation of liquids in tuberculosis of the larynx is generally due to loss of substance from ulceration in the interior of the cavity combined with rigidity of the framework produced by infiltration, and recovery of the power of drinking normally is exceedingly rare. The action of the transverse bar of tuberculous tissue in propping apart the side-walls of the larynx is a most unusual cause of regurgitation.

Dr. W. Hill: The suggested cause is important. Entrance of food into the larynx causes coughing, and is followed by regurgitation, and that is probably because the arytænoids cannot come together. The vestibule of the larynx prevents things entering into the larynx.

Fibro-papilloma of Larynx simulating Laryngeal Tuberculosis in a Middle-aged Soldier; Pendulous Epiglottis; Removal of Growth by means of Snare and Forceps.—J. Dundas Grant.—The patient, a soldier, states he was discharged on account of tuberculous laryngitis; he had suffered from sore throat, shortness of breath and huskiness for six months, and from pain in front and back of the chest for nine months. He is under Dr. Batty Shaw, at Brompton Hospital, for pulmonary tuberculosis, the upper and middle lobe of the right lung being involved. Tubercle bacilli had been found in the sputum in France but none here.

I saw him on October 23, when he was complaining of extreme hoarseness. The epiglottis was so pendulous as to conceal the interior of

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the larynx, but on elevating it by means of Mount Bleyer's epiglottis-lifter I found the larynx occupied by a large mass which was manifestly a fibro-papilloma.

On the following occasion an endeavour was made to extract it by ordinary forceps without any effect beyond the removal of a tiny fragment. The site of the growth was doubtful but it appeared to be at the front of the larynx. I then used a simple wire snare, the loop being placed transversely, while the epiglottis was raised by Mount Bleyer's instrument, and I removed a good half of the tumour; I was then able to see that it arose from the anterior part of the left vocal cord, and by means of my safety intralaryngeal forceps I cleared away the bulk of the growth, leaving the vocal cord practically clear. Without this combination of instruments the removal of this growth would, under the circumstances, have been of the utmost difficulty. In a week's time the voice was almost normal and I applied a solution of chloride of zinc to the site of removal. On November 27 the voice was quite good and the larynx clear. Microscopically the section showed the structure to be that of a papilloma with round-celled infiltration at its base. "In the absence of giant-cells or caseation it was not possible to attribute the round-celled infiltration to tubercular infection."

Dr. WYLIE: I consider the best way to draw the epiglottis forward is by a thread inserted through the epiglottis with Horsford's needle. An assistant is therefore not required. I have removed several papillomata with the snare, but the growths are generally subglottic and any piece remaining is removed by forceps. I have sent a list to the JOURNAL OF LARYNGOLOGY, RHINOLOGY AND OTOLOGY.[1]

Multiple Papillomata of the Larynx in a Child; Tracheotomy and Removal under Suspension Laryngoscopy; Decanulisation; Subsequent Recurrence of Stridor; Reintroduction of Tube; Larynx found almost clear by Indirect Laryngoscopy; Tentative Removal of Tube.—**J. Dundas Grant.**—A boy, aged four, was sent to me at Brompton Hospital in June, 1917, on account of the impossibility of removing a tracheotomy tube which had been inserted two months previously for difficulty in breathing, such as to threaten his life. I was able, on laryngoscopic examination, to see that the larynx was occupied by several papillomata. Under suspension laryngoscopy I removed a large number of small papillomata about the size of small split-peas. Subsequently I removed his adenoids. On July 4, owing to the high position of the former tracheotomy, which involved the cricoid cartilage, I made a fresh opening, about 1 in. lower down, and inserted the same tube as before. A repetition of suspension laryngoscopy revealed the complete absence of papillomata. His voice soon returned; he was able to breathe without the tracheotomy tube, and he was sent home. Two months later his difficulty in breathing returned, and the tracheotomy tube had to be re-introduced. He was sent back to me, and I saw a papilloma attached to the left vocal cord, there being, however, a fair amount of breathing space in the larynx. I removed the papilloma by direct laryngoscopy and also enucleated his tonsils, which were extremely large and buried. He can now breathe through the larynx, and his voice is good, but I am advising the retention of the tracheotomy tube during the winter months in the expectation that in the interval the

[1] JOURN. OF LARYNGOL., RHINOL., AND OTOL., vol. xxxiii, pp. 33-71.

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tendency to regeneration of papillomata may disappear, remembering the beneficial effect of tracheotomy, even without removal, in cases of papillomata of the larynx.

Mr. TILLEY: Did Dr. Grant try the peroral method first, and find he could not succeed with it? It seems a pity to connive at tracheotomy unless there are difficulties which are insurmountable by the peroral method. We should reserve tracheotomic bronchoscopy for cases in which there is severe dyspnœa, or some other emergency, which makes it imperative to open the trachea.

Dr. DUNDAS GRANT: The answer to the first part of the question is in the affirmative. The operation was done under suspension laryngoscopy, and salicylic acid was applied at the same time.

Dr. W. HILL: Without doubt there is a mortality from these cases in young children. There is a very small glottis, and tracheotomy has often to be done, and the last condition of the case is sometimes worse than the first. I have not had a case of multiple papilloma of the larynx for six years; if I had I should have used either radium or thorium. Results from thorium are said to be marvellous, and we have heard nothing of recurrences. The treatment of warts by thorium has been most successful. There are difficulties in the way of keeping a child under an anæsthetic and holding it in one position for half an hour.

Dr. JOBSON HORNE: Is Dr. Hill mindful of the lately discovered fact that epithelioma of the larynx can be brought about by the use of radium?

Lipoma of Larynx removed by Operation (Specimen exhibited).—Hunter Tod.—A male, aged fifty-eight, was admitted to London Hospital in June, 1916. He had suffered from increasing difficulty of breathing for over twelve months, chiefly at night time and after exertion. Later there was an aggravating cough, sometimes resulting in spasmodic attacks of dyspnœa. A variable inspiratory stridor was present.

On examination the interior of the larynx could not be seen owing to a large sessile tumour, almost blocking up the entrance of the larynx. It seemed to be attached to the posterior part of the larynx and inter-arytænoid space on the left side. On quiet breathing the growth did not move very much, but on deep inspiration it was sucked down towards the glottis. The surface was smooth and sparsely covered with fine vessels. On touching it with a probe it seemed semi-solid. It had a yellowish appearance and not the bluish translucent look of a cyst.

Under a general anæsthetic the growth was removed by the "suspension" method by means of an ordinary Krause's snare passed along a Hill's slotted laryngoscope. The patient did well.

On examining the larynx two days after the operation the point of origin of the growth could be seen as an irregular, yellowish, raw surface, as if the growth had not been completely removed; but healing gradually took place and three months after the operation the larynx looked normal. The growth itself was about the size of a pigeon's egg, and seemed to be composed of fatty tissue. The covering mucous membrane was only loosely attached to the underlying tissue, from which it rapidly retracted.

Multiple Papillomata of Larynx removed by Operation (Suspension Method) after Tracheotomy; Death Five Weeks later from Acute Membranous Tracheitis and Bronchitis.—Hunter Tod.—Boy, aged four, admitted to London Hospital on September 7,

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1917, suffering from attacks of dyspnœa and stridor, especially when asleep. Symptoms were stated to have dated from birth, but got worse for the two weeks previous to admission to hospital. The vocal cords could not be seen on examination with the laryngoscope owing to an overhanging epiglottis. The child was not hoarse, but would only speak in a whisper.

On September 12 the child was given a general anæsthetic, but before complete anæsthesia was obtained marked signs of laryngeal obstruction occurred rendering it necessary to perform tracheotomy at once as the child was *in extremis*. After the skin incision was made the trachea was incised straight away; to do this the thyroid isthmus, which seemed to be very large, had to be cut through. After the insertion of a tracheotomy tube the breathing soon became normal again. The larynx was examined by the direct suspension method and multiple papillomata were found to fill up the larynx. They grew from the right vocal cord and just above it. They were completely removed, a clear view of both cords afterwards being obtained.

At first the result of the operation seemed most successful, and after the third day there was free breathing through the mouth when the tracheotomy tube was plugged. The tracheotomy wound was small and healed well.

Three weeks after the operation there was some redness round the wound and some mucus began to be coughed up from the trachea. This was accompanied by an evening rise of temperature from 100° to 101° F. for two or three days. The red area round the wound slowly increased with induration of the subcutaneous tissues. For the next two weeks the mucous secretion increased in quanity, especially after severe attacks of coughing. These attacks became worse and were associated with extreme dyspnœa, and finally, in addition to the mucus secreted, there was occasionally a considerable amount of blood. As it was obvious that the child was getting steadily worse, I decided on October 17 to make a further examination. To relieve spasm a small quantity of 1 per cent. cocaine with 1 in 8000 adrenalin solution was made to trickle into the trachea along the tracheotomy tube. A very small quantity of chloroform was administered. On removing the tracheotomy tube the opening was found to be lined with thick gelatinous-looking membrane about $\frac{1}{8}$ in. thick. On inserting a small bronchoscope this membrane could be seen flapping in the trachea during the act of respiration and extended down in irregular masses as far as the bifurcation of the trachea. I removed a considerable quantity of this membrane which lined the opening and upper part of the trachea.

During the examination the child had an extremely severe spasm of dyspnœa and death seemed imminent. Oxygen was administered and a few drops of the cocaine and adrenalin solution were again applied. It was obviously useless to do anything further in the way of surgical interference, but I advised that if further attacks of dyspnœa occurred a soft rubber catheter should be passed into the trachea a few inches beyond the tracheotomy tube. This certainly relieved one or two of the subsequent attacks of dyspnœa, but eventually the child died on October 19 in extreme distress.

The clinical picture was very similar to that seen in a patient suffering from an intrathoracic growth situated at the bifurcation of the trachea, and causing death by obstruction of the bronchial tubes.

Report of Autopsy (Dr. H. M. Turnbull, London Hospital).—Specimen

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shown. "Patches of thin, granular membrane in upper compartment of larynx. Gelatinous, somewhat tough, yellowish-grey membrane (0·3 cm. thick) lining the lower compartment of the larynx and the walls of the tracheotomy opening in the first, second and third tracheal rings, and almost completely filling the trachea, the left bronchus and the bifurcation of the left bronchus into the bronchi to left and lower lobes. Right bronchus free. Purulent bronchitis and a few areas of collapse in portions of both lungs."

Films from Larynx (prepared at time of autopsy).—"The films were stained (1) with Gram and neutral red, and (2) by Neisser's method. There were numerous Gram-positive streptococci, in chains up to twelve cocci. There were a few staphylococcal groups of Gram-positive cocci. There were still fewer Gram-positive bacilli. These were slightly curved rods measuring 3 to 8 μ by 1 μ; they exhibited none of the morphological characteristics of diphtheria bacilli."

Microscopical Sections of growth removed from larynx confirm the diagnosis of papilloma of larynx (specimen shown).

Dr. D. R. Paterson: With regard to Mr. Hunter Tod's second case, I had a case where membranous exudation occurred a few days after operation in similar circumstances, and the child died. Another child had membranous exudation some time after the operation, and we had difficulty in getting it free: the child was ill for a long time, and an autogenous vaccine had a good result. Ultimately the child was operated upon three times, and the tube was left out as the condition subsided. In neither case was there diphtheria infection.

Mr. E. D. D. Davis: I have had an epidemic of cases of papillomata, and have curetted four cases, but they all recurred. In three cases the papillomata disappeared when the children reached ten years of age. With regard to the membrane of obscure origin, it is curious, after enucleating tonsils, how a thick white slough collects on the surface of the cavity. Can this case be of a similar nature? I had one case of enucleation of tonsils in which the inaccurate diagnosis of diphtheria was made, and the patient was sent to a fever hospital.

Mr. Hunter Tod (in reply): The point about my second case has been rather missed. Mr. Davis compares the condition to that of the membranous slough seen after enucleation of the tonsils; that is common knowledge. This case is almost unique. The operation was successful, and, as you will have noticed, there are no papillomata in the specimen. They were removed by the operation. As the child was well and was running about the ward for three weeks, the infection of the wound cannot be considered the result of the operation. The reason for postponing a further examination under a general anæsthetic was owing to the symptoms of lung infection. It was only because the spasms increased with attacks of hæmorrhage that one felt that something more must be done. At the second examination a thick gelatinous membrane was peeled off, and although a culture was not taken at the time, this was done at the autopsy, when streptococci, but no Klebs-Loeffler bacilli, were found.

(*To be continued.*)

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