of the larynx may remain stationary, the longest period of apparent quiescence he had seen was one and a half years.

Dr. JOBSON HORNE thanked the members of the Section for the attention they had given to the several points dealt with in his introductory paper, and said that, in view of the amount of time that had been taken up by the discussion, and also in view of the number of papers before them, he had been asked by the President to be brief in his reply. It would, therefore, be difficult for him to deal at all fully and individually with all the points raised in the debate. Speaking quite generally with reference to the remarks—for they did not amount to criticism—that had been made anent the practical value of a minute knowledge of the histology of the larynx, he sincerely trusted that in those remarks there would not be found an excuse to deter others from making similar investigations, for he could strongly recommend the part played by the epithelium of the larynx in health and disease as a field for the most valuable research.

DIRECT LARYNGOSCOPY, WITH ILLUSTRATIVE CASES.

BY ANDREW WYLIE, M.D., C.M.,

Assistant Surgeon Central London Hospital for Diseases of the
Throat, Nose, and Ear.

THE method of investigating disease by direct inspection of cavities and enclosed chambers has received recently considerable attention from specialists devoting themselves to diseases of the larynx and the bronchial tubes. A new era was opened to laryngologists, and great advances made in the study of the physiology and pathology of the larynx when Garcia invented the laryngoscope. A still further addition to the armamentaria of the laryngeal surgeon has been made by Professor Gustav Killian, of Freiburg, in Breisgau, in South Germany, to whom laryngo-tracheal surgery has been lately so greatly indebted for progress.

Direct laryngoscopy by Killian's tubes implies that the larynx can be directly inspected, without the light being reflected by mirrors. When laryngologists have become more accustomed to the manipulation of these tubes, the method will be more extensively employed in cases where examination by the mirror leaves the diagnosis doubtful. It is certain also that this method will be adopted wherever operative measures can be more successfully undertaken through the tubes. By their use and skilful manipulation there need be no danger of injuring the delicate structures of the larynx, or the epiglottis, and direct laryngoscopy will undoubtedly form in the future a routine practice among specialists.

There are many difficulties to overcome in applying these tubes. Severe spasm and coughing frequently interfere with their introduction. The profuse secretion of saliva which nearly always occurs often hinders the surgeon from obtaining as good a view of the interior of the larynx as he otherwise would do. Deformities of the throat from tuberculosis, rheumatism or congenital deformities affecting the neck and hindering the backward movements of the neck during the insertion of the tubes form other difficulties which the manipulator has to encounter. It is also a matter for useful precaution when attempting to remove a foreign body or a growth through these tubes to have in readiness the proper instruments for the performance of tracheotomy, as severe dyspnœa may supervene.

To perform the direct inspection through these tubes with comfort to the patient and to the surgeon, it is advisable to place the patient under chloroform anæsthesia. This anæsthetic should be pushed so that there shall be no spasm of the masseter muscles, and no necessity for the employment of a gag to keep the mouth open. Further, it is advisable to swab the larynx and epiglottis with a 10 per cent. solution of cocaine, a procedure which tends to counteract and to overcome reflex action. The patient should be placed on the operating table with the head thrown well back over its edge, and at a situation lower than the rest of the body. Having smeared the tube with vaseline, it is firmly gripped by the surgeon and forms a powerful spatula or tongue depressor, causing the epiglottis and the hyoid bone to come forward. During an inspiration, the tube can be gently inserted past the epiglottis into the glottis. It must not be pushed too far, lest it should carry the foreign body for which search is being made further into the trachea. In case of laryngeal or other disease about these passages, the tube may cause some hæmorrhage, and thus prevent the field of view from being properly inspected. With a direct electric forehead lamp, such as the Leiter lamp, or Kirstein's, which throws the light directly on the part to be examined, or with an electric extension lamp, the larynx is thoroughly well seen through the tube, and foreign bodies and growths are easily recognised and removed.

Killian describes the removal of 164 foreign bodies from the larynx and bronchi by direct laryngoscopy and bronchoscopy. This collection includes such bodies as buttons, seeds, beans, fish-bones, artificial dentures, pieces of bone, pebbles, whistles, safety-pins, coins, and a variety of other objects. Perhaps the greatest use of

direct inspection of the larynx will be found in diagnosing diseases and growths, and also in assisting in more completely removing them. Thus, for example, malignant growths can be thoroughly viewed and portions removed for examination. Tubercular disease can be medically and surgically treated with great thoroughness. Abscesses can be opened with precision. Cicatricial bands of any kind can be accurately removed. Papillomata, fibromata, and all benign growths of the larynx can be easily treated by removal with forceps or by the galvano-cautery—a mode of treatment which I have formerly advocated, even with the employment of the ordinary endo-laryngeal method. The galvano-cautery can be easily employed through Killian's tubes without any risk or injury to the adjacent parts of the larynx. Papillomata in children, which are most difficult to remove by the ordinary laryngeal methods, can be easily taken away when Killian's tubes are used.

Tracheotomy instruments should be ready in case of emergency. A smaller tube for children is inserted, and with a good light the papillomata are seen and removed by means of long crocodile punch forceps of the type which has been described by Dr. Patterson, and bear his name.

In my own practice I have successfully employed these tubes in a number of cases, of which the following three are the most illustrative:

CASE 1. *Removal of a Piece of Gristle.*—A gentleman, aged forty-five, on August 20 this year, during a sudden fit of merriment at dinner, felt a piece of meat go into his larynx, or, as he described it, "go down the wrong passage." This was followed by a fit of violent coughing and choking, but the effort of Nature failed to dislodge the foreign body, and when the violence of the spasmodic coughing had ceased the patient still felt there was something in his "windpipe," and consulted me next morning.

With the laryngeal mirror a small, dark, foreign body was seen lying in the anterior commissure below the vocal cords. The mucous membrane had become swollen and served to fix the foreign body. The sketch on the opposite page (Fig. 1) indicates precisely the position of the foreign body.

I tried by using MacKenzie's and Whistler's forceps to remove it, without success. The same afternoon, chloroform having been administered, Killian's tube was passed; an excellent view was obtained, and a small piece of gristle, about the size of a pea, was extracted by means of Patterson's forceps.

A considerable degree of hoarseness, due to the swollen con-

FIG. 1.

Piece of gristle lodged in the anterior commissure of the larynx below the vocal cords removed through Killian's tubes.

FIG. 2.

A small benign growth on left vocal cord removed by galvano-cautery through Killian's tubes.

FIG. 3.

Papillomata in the larynx of a child removed by Patterson's punch forceps through Killian's tubes.

FIG. 4.

Fish-bone lodged in boy's larynx and fixed to left arytenoid. Dislodged by paroxysm of coughing during insertion of Killian's tubes.

TO ILLUSTRATE A PAPER ON "DIRECT LARYNGOSCOPY," BY ANDREW WYLLIE, M.D.

dition of the larynx, remained for several days, but this subsided and patient was completely recovered within a week.

CASE 2. *Benign Growth on Left Vocal Cord.*—A lady, aged thirty-seven, who had been complaining for several months of hoarseness, consulted me in August last.

On examination a very small growth, like a papilloma or fibroma, was seen growing from the upper third of left vocal cord, as illustrated in Fig. 2. I was inclined to apply the galvano-cautery under a local anæsthetic, but the patient was nervous and would not agree to this method. Chloroform was administered, Killian's tube passed, and the growth was gently and leisurely touched with the galvano-cautery. This operation was easier to perform than by the indirect method. Considerable pain and hoarseness lasted for a week, but since then there has been no return of the growth.

CASE 3. *Laryngeal Papillomata in a Child.*—A little girl, aged five, was brought to me in August last. The parents had noted a change in the tone of the girl's voice. At times the voice was completely lost.

A laryngoscopic examination was conducted under great difficulty owing to the struggles of the patient, but several small papillomata were observed growing from both vocal cords (see Fig. 3). Chloroform was administered and the pharynx cocaineised. The small Killian's tube was passed and the papillomata, under a good light, removed by Patterson punch-shaped forceps. A considerable amount of bleeding occurred. This was arrested by adrenalin on cotton-wool attached firmly to a long probe. If the papillomata should recur this operation may be repeated with impunity.

CASE 4. *Fish-bone in the Larynx for Three Hours.*—A school-boy, aged twelve, swallowed at breakfast one morning a fish-bone, which went into his larynx and caused severe spasm, choking, and dyspnoea. He was brought to my consulting room hardly able to speak or breathe for the incessant cough and fits of choking. No examination could be made with the laryngoscope and tracheotomy seemed inevitable. Chloroform was administered, and a small Killian's tube was passed. Tracheotomy instruments were at hand. A small fish-bone could be observed lying in the posterior end of the larynx fixed to the left arytaenoid cartilage, as depicted in Fig. 4. A thorough inspection was prevented by an excessive spasm of coughing, which caused me to withdraw the Killian's tube, and on

its withdrawal the fish-bone was coughed up and all the symptoms subsided.

The larynx remained red and swollen for a few days, but soon recovered its normal condition.

REMARKS ON A CASE OF ACUTE SUPPURATION OF THE MIDDLE EAR COMPLICATED BY SEPTIC MENINGITIS AND BRAIN ABSCESS.

By W. S. SYME, M.D. EDIN.,

Assistant Surgeon, Ear, Nose and Throat Hospital, Glasgow.

THE case which I wish first to relate and afterwards to offer some remarks upon was that of a school-boy, aged fourteen, whom I was asked to see by Dr. P'Anson, of Whitehaven, on March 5 of this year. On that day he had a discharge from his left ear of a week's duration. At first there was also a discharge from the right ear, but this had ceased after two days, and at the time of my visit this ear had recovered. The aural condition had followed a mild attack of influenza, which was especially prevalent in the school, and which in several cases was complicated by pneumonia. On February 28 this boy had a slight rigor with sickness, the temperature rising to 103° F. It fell the next day and did not again rise till the morning of March 5, on which evening I first saw him. His condition then was: free discharge from left ear with a fair-sized perforation in the *antero-inferior* segment of the membrane. No pain over the mastoid and no tenderness on pressure, no severe headache, *photophobia*, ocular paralysis, or other symptom suggesting intra-cranial lesion. There was no mental dulling, the temperature was 100° F., and the only anxious point was the somewhat slow pulse—70. I contented myself with recommending the ordinary antiseptic treatment of acute middle-ear suppuration together with a brisk purge. For two or three days he went on satisfactorily, and those in attendance on him thought he was quite in the way of recovery. On the third day, however, he seemed somewhat dull, answering only slowly when spoken to. At the same time tenderness appeared at the anterior part of the tip of the mastoid process, and also over the region of the antrum. The pulse-rate, too, had fallen to 60. On March 9 I saw him again. We could find no other sign or symptom suggesting cerebral complication, except the mental dulness and slow pulse, but in view of these and the mastoid tenderness I decided