has not attended the practice of others. Thus Dr. Strong, in the discussion on Dr. Waxham's paper, reported 32 cases, with 31 deaths, the fatal issue being attributed to traumatic pneumonia, extension of membrane, and actual starvation. Another speaker, Dr. Hatfield, recorded 10 cases, all fatal. If the results obtained by Ingals and Waxham be contrasted with tracheotomy, the new operation stands first as a means of saving life. Tracheotomy under four is admitted to be, on the whole, unsuccessful. Dr. Ingals estimates the recoveries at 15 to 20 per cent.; Trouseau for all cases, 20 per cent., or 1 in 5. Individual operators can, no doubt, show better results than these; thus Dr. Mudd, in contrasting intubation and tracheotomy, gives as occurring in his own practice and in that of his firm 171 cases, with 46 recoveries, or 26.9 per cent. His later cases did better, for out of the last 32 no fewer than 16 recovered. This success he attributes to the milder character of the disease, and to the fact that the operation was performed earlier. Those who see much of tracheotomy know well how the results vary with the character of the disease, and the same influences act, of course, for or against intubation. I remember a series of 19 tracheotomies at Guy's with 1 death, followed by another series in which nearly all died.

Amongst the special advantages claimed for intubation are the rapidity with which it is performed, and the ready consent of friends; the after-treatment is less tedious, and the results are as good as tracheotomy. It is, moreover, urged that expectoration occurs more readily than through the tracheal tube—a result one would scarcely have anticipated. Again, it may be performed at a time when tracheotomy could not be urged.

Many of these points place intubation for general purposes before tracheotomy, but a perusal of the dangers above enumerated will qualify this conclusion to some extent, and leave us with the impression that the new operation will require as much skill, both in its performance and in the after-treatment, as tracheotomy. As has been pointed out by the authors alluded to, and from whose writings, as will be understood, all these facts have been taken, intubation, besides giving relief and saving life in diphtheritic laryngitis—in which disease it should be performed early—is also specially of value in spasmodic croup, oedema of the larynx and in chronic stenosis. It has, I think, been proved that these tubes can be worn for ten to fourteen days without injury, a fact which leads me to hope that for laryngeal stenosis due to catarrh, the operation may be performed early without any injurious effect, and at a time when we should not recommend tracheotomy, on account of the dangers which we know to be inherent in that operation itself. These tubes have also been of great value in aiding the removal of the tracheotomy tubes in cases where difficulty arises. In scald, again these tubes may be useful. Not having had any experience with this method of intubation, it would be unwise for me theoretically to compare it with tracheotomy; this has been done, however, by two American practitioners, Drs. Strong and Mudd, who claim for the latter operation greater or equal success with less difficulty. To all, the difficulty of applying antiseptic remedies, and of treating the trachea locally, will be apparent, and we must wait for personal experience before being convinced of the ease with which membrane is expelled, or with which it may be removed by tracheal forceps through the tube. The method certainly commends itself at once in those cases where we stand hesitating whether to perform tracheotomy to-night or wait till to-morrow; and in all cases where the parents refuse their consent to tracheotomy, we must feel it our duty to employ this method, to which approval seems generally given. In face of the difficulty of introducing the tube, it would seem always wise to be prepared to tracheotomise the patient (when consent has been obtained), more especially should the membrane be pushed before the tube, and the dyspnoea thereby increased. Therefore, should anyone be about to perform intubation without the alternative of tracheotomy being granted him, he will have to prepare the friends of his patient for a possible speedy termination of the case. Such a result is exceptional, even rare, according to the record of cases. Our greatest difficulty will be with the feeding. The use of a stomach tube has been tried, but found to give so much distress as to be abandoned; still, with older children it may be successful.

As showing the tolerance of the larynx of mechanical interference, I may refer to two cases of chronic stenosis, in one of which complete recovery ensued, and in the other great improvement. The first was a child, aged 3, whose thyroid cartilage, with probably the cords, had been wounded in tracheotomy. The case was severe diphtheria, and the wound became very unhealthy. A catheter was first passed by the mouth on a stylet, under the finger, as described under intubation, but was soon expelled. Later, dilatation was effected by Mackenzie's dilator at frequent intervals, the tracheotomy wound was allowed to close, and the boy recovered the partial use of his voice.

The other was the case of a woman, about 60, admitted for laryngeal dyspnoea, for which tracheotomy became necessary. For many months she lost all power of phonation, and was never able to dispense with the tube. Under chloroform the tracheal wound was enlarged, some granulation tissue removed, and a rubber tube passed from the wound through the glottis, and retained by a thread. This was changed from time to time by passing a loop of silk through the rubber tube and the end of the catheter; the catheter was passed up into the mouth, and the tube drawn through the glottis; the loop was cut and the silk withdrawn, the short piece of tube remaining in the trachea and glottis, and retained by a piece of silk tied round its centre, brought out of the wound, and tied round the neck. Through this she was able to breathe and to speak, and, finally, by wearing a tube with an opening in its upper surface, regained her voice. She was not, however, able to dispense with the tube. O'Dwyer's tubes would have been useful in both these cases.

CASE OF PARTIAL EXCISION OF THE LARYNX, PHARYNX, ETC., FOR EPITHELIOMA: EVENTUAL DEATH.

By RUSHTON PARKER, B.S., F.R.C.S.,
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A GROCER, aged 39, was visited by me in Widnes on February 22nd, 1887, in order to have tracheotomy performed. He was under the care of Dr. McCambridge, and suffered dyspnoea and much loss of voice from laryngeal obstruction, suspected to be due to malignant growth in that passage. Dr. Glynn had been consulted, the growth had been seen with a laryngoscope, and early operation advised, for fear of total obstruction and asphyxia.

The patient was laid on a table and put under chloroform by Dr. Mangan, of Runcorn, other assistance being given by Dr. McCambridge and Dr. Nealon. During the progress to anaesthesia the patient became cyanosed, and it was soon evident that complete respiratory obstruction had occurred. The pulse having ceased to be felt, the chloroform was discontinued, yet every breathing effort intensified the cyanosis, and with it the anaesthesia, which soon became complete; but when respiration faded and actually stopped, the presumption that he was merely dying gave place to the fear that he was actually dead. Tracheotomy was now performed above the thyroid isthmus, and some difficulty experienced in puncturing the windpipe from calcareous hardening of its rings. For this eventuality I was prepared with a pair of cutting forceps; but, after an effort, the knife was forced through the upper rings, and the requisite section made upwards, on which the patient immediately breathed. Before the tube was inserted it was evident that he was safe, and shortly afterwards he was lying comfortably in bed, with a good colour and pulse, ignorant of the peril he had been in. The wound was treated with iodoform gauze slipped under the plate of the tube.

An inspection of the glottis with a laryngoscope just before tracheotomy had given me a view of an intralaryngeal growth having a papillary look suggestive of epithelioma, according to what I had been told. The tumour then appeared to me to be confined to the larynx, where by digital examination it could be felt, while the tongue and epiglottis seemed unaffected. I accordingly offered to attempt excision should the patient care to accept it. This he afterwards eagerly agreed to, but a little time was allowed him to get over any ill effects that might result from tracheotomy, to get accustomed to the tube, and to permit a more generous diet than he had been previously able to take owing to distress from coughing, dyspnoea, and other discomforts. Though he had to live on milk and soup, he took more of them. The trachea tube answered its purpose thoroughly, and his health improved at once. No febrile reaction or a single symptom of illness occurred, and he began to feel comparatively well and strong.

Three weeks elapsed after tracheotomy before excision was attempted. On inspecting the patient, it was noticed that the laryngeal region of the neck was swollen, and the skin over it was red and oedematous. This had only appeared a day or two and was not at first explained, but the cause became evident during the next operation.

On March 15th, 1887, the same gentlemen assisting me, chloroform was given by Dr. Mangan, on a sponge at the end of a bent piece of leaden gas-pipe inserted into the tracheal opening. This being about a foot in length, was intended to permit the chloroformist to work without impeding the operator, while the bleeding caused by the latter was kept out of the windpipe by a small plug of sponge. The long pipe, however, had to be abandoned in favour of the tracheotomy

tube, which proved less irritating, and was more easily freed from constantly accumulating mucus by frequent washing in the weak warm sublimate lotion employed during the operation. The incision was median, and vertical at first, and afterwards enlarged to a crucial. On freeing the larynx at the left side, some yellow fluid with granular flakes escaped, the obvious contents of an epitheliomatous cyst, showing that perforation had occurred there, with local diffusion of the growth, and accounting for the redness and swelling, which both went down at the moment of evacuation. I had previously determined to open the larynx, and remove no more of it than should be necessary for the free extirpation of the growth. This was now accordingly done, the thyroid cartilage being divided down the middle with forceps, after failure to cut it with the knife, owing to calcareous hardening. The left half of the thyroid cartilage and its coverings were now removed, bringing with them the bulk of the intralaryngeal growth; the right half of the thyroid and the whole of the cricoid, with their coverings, being left undisturbed. On feeling upwards towards the tongue a fragment of tumour was perceived attached to the epiglottis, so that appendage was pulled down and cut away with scissors. The left side of the pharynx close to the epiglottis, being now seen to be rather extensively implicated, was clipped away; and on feeling up about the tonsils, that on the left side being suspected to participate in the disease, a little energetic fingering enabled all that remained of the tumour to be pulled down and cut well away with scissors. Free bleeding had frequently broken out, but being all along quickly arrested there was not much blood lost. To all visible arteries ligatures of fine sublimated silk were attached; otherwise sponge pressure was applied, a small one forced into the cricoid aperture above the tube pretty well diverting the downward drip from the windpipe, while a larger one, stuffed behind the tongue, after the epiglottis and pharynx were cut, at once controlled the pretty free resulting hæmorrhage, which at the end of the operation was found to have ceased. After clearing out the cavity outside the larynx to the left, where the morbid growth had perforated the larynx, the trachea tube was once more well washed and replaced, the wound and pharynx being packed with iodoform gauze bandaged round the neck, and the patient put to bed not looking much the worse for these procedures.

The difficulties of this operation were less inherent than incidental to the frequent embarrassment caused by obstruction with mucus when the tube was in place, and by the trickling of blood into the windpipe when the tube was taken out to be washed. But these difficulties were gradually overcome without using any of the special appliances that have been contrived for the purpose, but which published descriptions of their use did not encourage me to procure. Nothing was given to swallow for the first thirty-six hours or so, any thirst that occurred being relieved by washing out the mouth with water. After this interval a tube of india-rubber was passed down the œsophagus by the wound, and liquid nourishment poured down it with a funnel. For a time he was contented thus to take his food without tasting, but after six weeks, he one day ate a little pudding, and succeeded in swallowing the greater part of what passed down, the rest escaping by the wound.

A fortnight after excision he astonished his attendants by speaking, and later in the day, at a visit which I made, he addressed me in an audible though husky whisper. On removing the dressings, this power ceased, but we saw movement of the right vocal cord, which remained *in situ*. He continued in excellent health, spirits, and vigour, but a recurrence appeared, and a further excision was undertaken on May 24th, involving a little more of the larynx. His health continued unimpaired, and he went about in the open air, wearing a trachea tube, and passing an india-rubber pipe down the œsophagus through the wound for feeding purposes. Again recurrence took place, and he submitted on June 22nd to a most extensive operation, involving the remains of the larynx, the adjacent border of the pharynx and œsophagus, almost the whole of the left submaxillary structures, including the lymph glands, and a chain up the neck along the carotids to the base of the skull. This last procedure was excessively difficult and tedious, but every particle of disease that could be felt in the upper parts of the neck and throat was removed, and these parts remained unaffected to the end. But he was sadly disabled, and had to wear a rubber tube in the œsophagus, as well as the trachea tube, constantly afterwards. Though much reduced, in fact to almost the last ebb of life, by this operation he rallied well, but was never as strong again. Further recurrence appeared about the trachea, necessitating a longer trachea tube, to reach below the growth and prevent suffocation. This tube was of silver, after Durham's pattern, and eventually reached from the top of the trachea down almost to its bifurcation, having a lobster-tailed inner tube to suit it. The vertical por-

tion of these tubes must have latterly had a length of nearly five inches.

The administration of chloroform was at each operation a most arduous task, and I have to thank Dr. Mangan for having managed it with great judgment and patience. All the after-treatment, with the management and suggestion of the new tubes, was undertaken by Dr. McCambridge with great perseverance, and often at great labour; but the growth persisted, encroaching and ulcerating, causing great irritability, coughing, retching, and vomiting, until the patient died exhausted on August 30th, 1887. His sister died at the age of 47, of mammary cancer, a few weeks before he did, but the rest of the family enjoy immunity from this disease.

REMARKS.—It would have been better, I think, to have excised the entire larynx the first time, but I was then anxious to avoid unnecessary mutilation, but instead had to inflict probably more.

THERAPEUTIC MEMORANDA.

STROPHANTHUS IN HEART-DISEASE.

DURING the past few weeks there have been several communications to the JOURNAL testifying to the beneficial action of strophanthus in heart-disease, but I have not seen any record of its failure. I have been using strophanthus for several months at the Birmingham Workhouse Infirmary, and with little success. At first I thought that it might be due to my using a badly-prepared tincture; and to some extent this was the case, for I found that the tincture prepared by Messrs. Burroughs and Wellcome was far superior to that obtained from several other chemists. In all my cases hitherto I have found that, though tincture of strophanthus has done some good, yet the substitution of an equal quantity of tincture of digitalis has been attended with marked benefit, and I have ceased to prescribe strophanthus where it is important to obtain an immediate improvement. I have found that vomiting occurs from strophanthus quite as frequently as from digitalis; and in my opinion strophanthus, at any rate in the dose and preparation at present in vogue, is decidedly inferior to digitalis in its action in heart affections.

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CASE OF INTESTINAL OBSTRUCTION FROM HARDENED FÆCES CAUSED BY LARGE DOSES OF IRON.

A. B., aged 60, a gentleman, consulted me some time since for debility and anæmia. On examination, I found him to be the subject of chronic Bright's disease, and he also had mitral stenosis. There was a good deal of anæmia, and also œdema of legs and ankles. I prescribed ferri et ammon. cit. gr. xx with chloric ether three times a day, milk diet, warm clothing, and told him to be very careful to have the bowels open every day, and to take one wineglassful of Friedrichshall water three times a week.

After this I saw him several times, and he was better. I advised him to continue the treatment. I did not see him again for several weeks, when one morning I was called up at 4 A.M. with a message to go at once, as my patient had been vomiting the whole night. On arriving at the house I found him lying in bed with his legs drawn up, complaining of intense pain in the belly, and vomiting every three or four minutes. The history was this. He had felt seedy the whole evening, and had gone to bed very early; he had no many hours before he commenced to vomit and have great abdominal pain, and thus continued the whole night.

State on Examination.—Temperature 96.8°, pulse 100 small and thready; pupils small, equal, acting to light; tongue dry.

Abdomen.—In the right lumbar region there was a tumour of double the size of one's fist, extending within an inch of the linea alba; it was dull on percussion, and somewhat doughy to palpation; there was slight tympanitis over rest of abdomen; no hernia.

The treatment I then adopted was sedative. I gave him a one-grain morphine pill, and put hot fomentations, sprinkled with laudanum, over the abdomen; he fell asleep soon after. I left, leaving word that I would return in a few hours. I saw him again at 11 A.M., and found him awake, but he said he felt very little pain, and the vomiting had ceased. I then gave him two or three very large soap and water enemata, and brought away about a chamber full of black fæces resembling "black sand." He expressed himself at once as greatly relieved. I saw him several times afterwards, and he was as well as ever.

REMARKS.—Is this not a case of intestinal obstruction due to the iron which he had been taking; where chemical action took place in the intestinal canal, and the iron became converted into an insoluble