verised tar-water every day. On Feb. 8, the cough was greatly relieved. The tongue was moist and rosy. The patient began to eat his food with pleasure, but could not yet eat meat. He was ordered to continue the bitter mixture and pulverised tar-water as before, and to take two teaspoonfuls of tincture of cinchona daily. On Feb. 12th, the patient began to eat meat, and to feel more strength. He had taken a little walk. The cough was almost entirely gone. The treatment was continued. On Feb. 24th, the patient ate and slept well; he coughed very little, and felt his whole being quite changed. On April 5th, the patient had been so well for some time, that he had been able to resume his situation. I have ordered him some few movements with a stick, in the way that I have seen it used by M. Laisné in Paris, at the gymnasium of the Enfants Malades, in order to extend the chest; twice a week iodine tincture on the chest; and one sulphurous water injection into the lungs with the pulverisator. Since that time to the present day, the young man has continued his daily occupation. His cough is very little and rare; his appetite excellent. The pectoriloquy still exists under the left clavicle; how long this will last I do not know. But what struck me is the rapid cessation of cough; that it is entirely due to the pulverisation, I cannot say with certainty, but I have also had several other cases in which the same effects have been produced, and especially in emphysema.

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ACUTE LARYNGITIS: TRACHEOTOMY: RECOVERY: WITH REMARKS.

By HAYNES WALTON, Esq., Surgeon to St. Mary's Hospital, and to the Central London Ophthalmic.

On the 27th of June, I was sent for by Mr. Turner of Kensington, to see a person, as the summons expressed, "with throat-affection and difficulty of breathing". I took, therefore, with me such instruments as might probably be required. I reached the house at half-past one o'clock. The patient was a man between fifty and sixty years old.

He was in bed, with his body supported erect by pillows and attendants, and gasping for breath. His face was red and bloated; his tongue protruding, and swollen to twice the natural size, and loaded with whitish secretion; and a copious salivary discharge was escaping. He was unable to swallow; nor could he speak. From his jaws to his clavicles, the integuments were red and swollen. I listened to the back of the chest, but could hear no vesicular murmur, the absence of which, together with the violent efforts that were made to sustain breathing, and the peculiar grunting noise produced during the short expirations, unmistakably showed that there was stoppage in the larynx, and to an extent that would soon destroy life.

I advised the immediate performance of tracheotomy. As a rule, I should prefer laryngotomy in laryngitis, whether idiopathic, erysipelalous, or caused by swallowing hot water or chemical irritants; but here I rather expected extension of disease to the breathing apparatus below the true vocal cords. The sufferer and his family consented; and, with Mr. Turner's assistance, and that of a non-professional person who was at hand, I proceeded to operate.

I raised the shoulders by pillows, and allowed the head to fall back a little, so as to place the neck on the stretch, and make the anterior portion prominent. The swelling of the soft parts prevented me from feeling the cricoid body; and I could only judge of its position from what I felt of the thyroid, and by that determine where to begin my incision. There was free

bleeding at first, but it ceased readily. Having hooked up the trachea, and attempted to open it, I found the rings ossified, so that I was obliged to hack through them as best I could with the scalpel; but I penetrated it where I wished, and, I may say, with very little delay. After the spasmodic breathing, the cough, the violent expulsion of thick mucus, and of blood produced from the lining membrane of the trachea, and all of only a few moments duration, relief was established. Within half an hour from the period of my visit, the breathing was regular and quiet. It was requisite to keep some covering over the tracheotomy-tube, to prevent coughing. A piece of flannel was employed. The amount of œdema in the neck may be inferred from the fact of the head of the tube being more than an inch from the surface.

The disease was purely idiopathic, and had been rapid in its course. It was only on the 24th—three clear days before—that illness was felt. On the 25th, Mr. Turner was applied to for soreness of throat; and he detected coldness of surface, depression of pulse, dejection of spirits, loss of voice, and an erysipelalous appearance of the tonsils, of the fauces, and of the soft palate. On the 26th, the symptoms were more advanced, in spite of all treatment; the breathing was affected; the tongue enlarging; and the saliva flowing very copiously.

The day after my operation—the 28th—my patient was breathing nicely; his countenance astonishingly changed for the better; his neck less swollen; and the secretion from the trachea more healthy. He did not cough, and he made signs to express his great relief. The vesicular murmur was thoroughly established all over the chest. He had passed several hours in sleep. The tongue was improving, and the saliva was lessening. Late in the day, a few teaspoonfuls of beef-tea and brandy were swallowed. Through careful watching by Mr. Turner and his partner, Mr. Towers Smith, this fortunate man progressed with unusual quickness, and in seven days the tube was removed, and the wound strapped up. At this time the tongue was natural, and there was no trace whatever of unhealthiness in swelling or otherwise of the parts within the mouth. There was, therefore, so far a complete restoration to health.

Such a triumph of practical surgery is not so common as to render publication of the facts unacceptable. Indeed, I give publicity to the case for the sake of example, to show how a valuable life was saved, and to encourage young surgeons to do likewise under the same circumstances. But it must be remembered that I am alluding especially to the application of the operation to adults, and in idiopathic laryngitis. Of tracheotomy in general I shall not make a remark, beyond that I am fully aware of its almost inutility in the croupy affections of children, and which is no more than should be expected, recovery being the very rare exception.

I have seen life lost in laryngitis by temporising with leeches and other measures, when opening the trachea would in all probability, and according to the testimony of the *post mortem* examination, have given a good result. In a case to which I was called, the physician in attendance overruled my opinion and my advice to operate, and death soon ensued. The healthy state of the trachea, and the œdema of the upper part only of the larynx, plainly showed the opportunity that had been lost.

This is the light in which I regard the laryngeal affection with reference to the treatment by operation, whether the larynx is the sole seat of the inflammatory action, or participates only in that which is around and above it: it may be called a mechanical view of the matter. In the throat, as elsewhere, these inflammatory or erysipelalous attacks will and must run a certain course and pass through certain stages, however little or much they may be counteracted or modified; and I be-

lieve in our power so to influence them, but not to arrest. When the maximum of the attack, or the highest point of intensity, does not quite produce such physical changes on the glottis by narrowing it so as to prevent the necessary amount of breathing, recovery is not, of course, prevented by suffocation. But a very little more stoppage may shut off too much air for the continuance of life, so that the issue depends on a matter of degree; and that greater degree of inflammatory action must often be so slight, and of such kind and measure that it would not perhaps be appreciated or recognised in another part of the body, even were the affected spot under immediate observation, as on the surface. I should, therefore, always be inclined to watch more anxiously the state of the breathing, and the effect of its decline on the system, than anything else; and to be guided by it, and to act accordingly. I should, too, be jealous in observation, lest the absence of any ordinarily expected condition, especially swelling externally or in the fauces, should mislead me.

Tracheotomy cannot cure the existing disease—certainly it cannot; nor can any agency but the natural reparative power; but it bridges the patient over the difficulty, and gives time, I may say life, while nature is making the cure. I say, then, act in time, and do not wait till the heart is no longer able to drive the blood through the congested lungs.

About fourteen years ago, a valuable member of our profession in London, a friend of mine, was, as I think, allowed to die after three days illness, because the physician and surgeon would not consent to tracheotomy. This gentleman begged to have it done; he wrote his request on the slate, and died pointing to his throat. The physician was rather inclined to acquiesce; but his colleague, a very timid man, now deceased, resisted; and, as usual, life was extinct unexpectedly, while some ridiculously useless means were being tried.

It is with much pleasure that I refer to two favourable examples of the operation that occurred in St. Mary's Hospital at the end of last year, in two adults. The operation in each instance was done by Mr. Young, the house-surgeon at the time, a most intelligent and thoroughly practical man. I congratulated him on his promptness, his knowledge, and his skill. In all probability, any delay in either case would have been followed by death. At this period, both the patients are well. The particulars were published in this JOURNAL.

Respecting the performance of tracheotomy, I will venture to allude to some of the chief features, such as I try to impress on my class when teaching operative surgery.

There is no operation in which is to be found a greater difference in execution between the living subject and the dead. In the latter, the trachea is prominent, and stands out, as it were, high and dry, no longer surrounded by full blood-vessels, and away from the shrunken muscles; in the former, it is deep, covered, and astonishingly hidden by the acting muscles, and always seems smaller than one would expect, and more difficult to expose. It is quite impossible to give an accurate idea of the great dissimilarity of the proceeding, arising out of these conditions. The difference is still widened when there is swelling of the neck. In a case to which I was called to perform tracheotomy for diphtheria last year, in the person of a young adult, by Mr. Beale, there was, in addition to a very fat neck, so much swelling of the integuments, and so much infiltration of the neck-muscles, that for a time it seemed impossible that I should ever expose the trachea satisfactorily. The difficulty was increased by the very profuse bleeding. Except for the quiet behaviour of the patient, I could not have succeeded.

Tracheotomy in children is very strikingly more difficult than in adults, on account of the diminutiveness of the parts, especially in the lesser size of the trachea,

and its comparatively greater depth, and the granular fat and small veins that lie on it.

It is more easy to open the trachea, as I did in this instance, above the isthmus of the thyroid body, than below, because of the more superficial position, and the absence of veins. Except when the thyroid body is diseased, or tracheotomy is needed for the extraction of a foreign body, this position should be preferred. Ordinarily, the isthmus covers the third and fourth tracheal rings; but it is uncertain in size and shape. The objections to the lower operation are, the greater depth to traverse, the presence of the inferior thyroid veins, and of the sterno-hyoid and thyroid muscles, which, in a thick-set muscular man, overlap the air-tube more than could be supposed from what is seen in the dissections of bodies. On the lower portion of the trachea exist branches from the inferior thyroid arteries. The carotids are, of course, in nearer relation, the lower the operation is done.

There is no more important step in the whole proceeding than that of dividing the integuments exactly in the mesial line. It is the first thing to be done; and, if badly done, unfortunate results are likely to follow: the lateral lobe of the thyroid might be cut into, or the trachea missed, or perhaps the carotid artery opened. I have seen the first and second happen.

I am particularly desirous to speak about hæmorrhage. Indeed, to get an opportunity for this has originated these remarks. Except under the most urgent haste, and when life seems to depend on the immediate and momentary admission of air to the lungs, should the trachea be opened while its surface is covered with blood? Several times I have seen death produced by the blood being inspired; and in each case, unfortunately, there was no hurry needed. In one of these, an extraneous substance was lodged in the larynx. An excellent surgeon, who, when he found that he could not control the bleeding by any ordinary measures, applied the actual cautery. Success ensued. I am sure that the patient is always placed in the greatest possible danger except the bleeding be arrested or almost checked.

I think that the trachea should invariably be hooked up and steadied before being opened, because of the greater accuracy secured, and the dangers that are avoided, and the time that is saved. This is recommended by all good practical surgeons who have written on the operation, and no doubt practised by most judicious operators; but, strange to tell, it has never happened to me to see it used in the many times that I have witnessed tracheotomy.

THE PRESERVATION OF LEECHES. "Leeches are best preserved," says Mr. Maisch, "in moist turf in a cool place, not subject to sudden variations of temperature, and free from ammoniacal and acid vapours. The turf may either be kept in a wooden box or tub, or else in an unglazed earthen vessel; the latter may be set in a vessel containing water, reaching on the outside to about half the height of the turf. Where large quantities of leeches are used, those intended for immediate use may be kept for a few weeks in clean water over washed sand and gravel, the water to be changed for clean water of the same temperature every two or three days. Leeches that have been used, may be made to discharge the blood by putting them in lukewarm water containing some vinegar, washing them repeatedly in water of the same temperature, and finally keeping them upon sand in water for themselves for two or three weeks before they are put in the turf. As a general rule, for the preservation of leeches, avoid heat and all sudden changes of temperature, keep them carefully from all noxious gases, and do not mix leeches indiscriminately until you are satisfied that all are in a healthy condition. Very few deaths from sickness will then occur."