will not be contended in these pages that any change of force, nervous or otherwise, can be manifested in an unchanged material organ; but the changes in the prolonged shock are probably similar in character to those which occur in the more rapidly fatal forms.

[To be continued.]

CASE OF

DIPHTHERIA SAVED BY TRACHEOTOMY.

By GEORGE BUCHANAN, A.M., M.D., Glasgow.

In a paper which I contributed to the proceedings of the British Medical Association at Cambridge, and which subsequently appeared in the pages of this JOURNAL, I called attention to the importance of having recourse to tracheotomy as a means of saving life in the later stages of croup and diphtheria; and I urged the necessity of resorting to the surgical operation before the disease has worn out the vital powers of the sufferer.

A further experience convinces me that, in many cases, the medical attendant can discover at a comparatively early period in the disease, whether the tendency is to the exhaustive or suffocative type. And the practical point is, to have surgical aid when it appears that the false membrane is arresting the respiration in a manner sufficiently marked to show that the patient will succumb unless air be more freely admitted to the lungs.

In the communication referred to, I gave the result of twenty-one operations. Since then I have operated seven times; in all twenty-eight operations of tracheotomy, with the result of ten cures. It must be remarked, however, that the proper view to take of this operation is: given twenty-eight cases of croup and diphtheria, in which the medical attendant has deemed that medicine will be of no further avail and death will in all probability take place from suffocation; tracheotomy has saved ten. For of these twenty-eight I do not believe one would have survived if the operation had not been performed.

My experience of croup and diphtheria is very remarkable. During the last six years, I have seen upwards of forty cases. They all occurred in the practice of other medical men in this city and neighbourhood. In none have I seen either disease at its outset, having always been summoned in a surgical capacity to determine the question of tracheotomy and perform it when it was decided on. Of the twenty-eight cases in which I undertook it, ten recovered; all the others, which I refused to operate on, died. Some I refused, because they were dying from exhaustion; five or six I declined to operate on, because both the medical attendant and I considered that there was still a prospect of recovery by medical treatment. But of all the cases of croup and diphtheria to which I have been called in consultation, none have recovered, except the ten which I saved by tracheotomy.

The following case is a good illustration of its advantages.

Catherine Walker, aged 7 years, began to complain of hoarseness, with a slight but rough cough, on Wednesday, January 9th, 1867. These symptoms increased in severity till Friday, the 11th, when Dr. Tindal was called, who prescribed a blister to the throat, and administered two grains of iodide of potassium and two grains of chlorate of potash every

two hours. He found a white patch of diphtheric deposit on each tonsil. In two days, the symptoms were relieved, a bit of false membrane thrown off, and the tonsils had a more natural appearance. On the 16th, a fresh accession of the disease seems to have occurred, for the breathing became oppressed; and, though there was no appearance of deposit on the tonsil, it was evident that effusion was taking place in the larynx, as the stridulous noise on inspiration was quite evident. The same remedies were pushed for two days without effect; for, on the morning of Friday, the 18th, the distress in breathing was great.

I was called by Dr. Tindal on that day, and found the child evidently in great danger. The stridor on inspiration was extreme; and the obstruction in the larynx most evident, by the drawing in of the abdominal walls and intercostal spaces at each act of breathing. The pulse was weak and rapid, and the skin already cold and pale. I was quite satisfied that death was imminent, if tracheotomy did not afford a chance of safety. Having got the parents' consent, I operated; the patient being put under the influence of chloroform, which is a great relief both to the surgeon and patient. As soon as the trachea was opened, the violent respiratory efforts threw out some shreds of false membrane, and with the dressing-forceps I pulled away much more; some of the pieces being half a square inch insize. Fortunately, most of the effused membrane was situated above the opening in the trachea. As soon as the double tube was lodged in the trachea, the breathing became free, the colour was restored to the lips and cheeks, and soon the pulse and heat became natural.

Dr. Tindal and I continued to visit the little patient daily; but during the first three days she was indebted for safety and comfort to the continuous attendance of a number of my senior students, who kindly volunteered their services; so that at no time during day or night was she without a skilled assistant at her bedside. It is a most important part of the after-treatment to keep the tube clear of any secretion which may be coughed up into it. Fortunately, the disease seemed to be checked; for the secretion, instead of becoming viscid, assumed a more fluid consistence, so that it could be readily removed with a feather. The iodide of potassium was continued for two days. The patient was nourished with beef-tea, and after the second day with more solid food. Steam was introduced within the bed-curtains by a tube attached to the spout of a kettle which was kept boiling on the fire; and it was noticed that, when any slight difficulty of breathing through the tube occurred, an increase in the amount of steam soon relieved it. The tube was removed on the fourth day; when the respiration was found to be quite free, all symptoms of the disease having passed off. She continued to improve daily after the removal of the tube, breathing, eating, and sleeping in a natural way.

AN ANEMOMETER. General Morin has submitted to the French Academy an ingenious electric anemometer, which shows with great accuracy the state of ventilation in hospital wards, theatres, etc.

STREET ACCIDENTS. A Bill has been read a second time in the House of Lords for the regulation of traffic and the protection of foot passengers in the streets of the metropolis. Not too soon. We are at present killing 150 persons annually by driving over them, and if we add those who are hurt or maimed by the same process, we shall have 2000 persons who are more or less injured by the unsafe state of our streets.