were not operated on in the last eight years died. Trousseau and Solis Cohen have each gathered a large number from both hospital and private practice, and give one-third of recoveries in hospital and one-half in private practice.

These statistics are given from an aggregate of over 5,000 cases, and as they are furnished by our best authorities, whose testimony I can not impeach, they appeal strongly to my confidence in tracheotomy if early performed, and go far in disproving Dr. Bell's first proposition that "many would be operated on unnecessarily."

Equally does it disprove his second proposition, that "extension of the membrane took place more rapidly after operation," for if this were so the mortality would be greater after operation than without it, and his own figures show the contrary to be the case.

Moreover, it is not so often the extension of membrane that destroys life after tracheotomy, as it is the broncho-pneumonic complications, which were really established before the operation, induced by the prolonged asphyxia, which produced the venous congestion, engorgement, stasis, and exudation, which the free introduction of air merely failed to relieve. Therefore, remove, I say, the asphyxia by early operation, before these secondary pulmonary complications have been established.

Instead of this second proposition being true, "that extension of membrane takes place more rapidly after operation," this seems contrary to an established principle of surgery, viz., rest to an inflamed organ.

An opening into the trachea, below the seat of disease, secures rest to the inflamed larnyx, removes any cause of irritation by the passing breath, prevents the conveyance of infecting germs into the deeper air passages, and in many cases prevents the downward extension of membrane. This rest thus secured is of great and recognized value in syphilitic and tubercular larnygitis, and adds no element of danger, and we see no evidence, either clinical or physiological, that it should act otherwise here.

Give rest to the inflamed larnyx by allowing sub-larnygeal respiration, and we will favor resolution of the inflammation and do much towards preventing the extension of membrane downwards. Clinical history and the result of autopsies go to support this proposition.

The fact of the 33 to 50 per cent. of recoveries after tracheotomy, as compared with 10 per cent. without operation, shows that relief to the diseased part was obtained, and extension of the membrane was not made more rapid but prevented. The fact that those who lived from 5 to 20 days after the operation, showed at the autopsy that the membrane had disappeared from the larnyx and trachea, leads to the conclusion that the presence of the canula did not favor further exudation.

Another of the more common causes of death in diphtheritic croup is exhaustion of the organic nervous system.

What more potent agent is there in producing this exhaustion and depression of all the vital forces, than the carbonic acid gas poisoning from continued unoxygenated blood, and what speedier relief can be afforded, or more certain prevention secured, than by early opening the trachea, and giving a free supply of fresh air, which abounds in oxygen, so much needed.

Believing that carbonic acid poisoning, and the consequent increased exhaustion to the nerve centres and all its train of complications form a factor that plays no unimportant part in the fatal issue of our tracheotomies, leads us to the conclusion that delay here is alarmingly dangerous, and prejudices the best interests of our patient. It is no longer a question of, Shall we perform tracheotomy? but, *When shall we?* and *What are the indications?*

The answer may be gathered from the preceding argument. Be satisfied that it is a case of membranous exudation. And the best test I know of for this sometimes difficult problem is, loss of voice, and expiration labored, prolonged and audible.

When the constitutional symptoms of general infection are not sufficient to carry off the patient even though his asphyxia were removed; when these symptoms of general infection are slight or absent, the vital forces are well sustained, and the patient's strength unimpaired; when the asphyxia, though very marked, has not gone so far as to produce general cyanosis and prostration; when the usual remedies have failed to expel the mem-