

a room whose air shall be purified by its passage through sterilized cotton, or through tubes in imitation of Tyndall's glycerine box.

It is the glory of the time that really great men among us are not so marked by a wide separation from their colleagues, such as prevailed one hundred and fifty years ago. Then there was but one John Hunter, and he remained without peer, and with few followers. Meeting one of his contemporaries when he was carrying home some pig's feet from the market, for the purpose of anatomical inquiry, he was sneered at for busying himself about pig's pettitoes. To-day, the pettitoes on such a mission would be enclosed in a nimbus. We now have a Koch who leads, but there is a large following close at his heels. We have Atlee and Spencer Wells, but almost at once their followers appear everywhere and outstrip their teachers.

We sometimes hear pessimists declaim against the methods of the profession, and summing up their wild statements in the compendious anathema, that the world would have been better if the practice of medicine had become extinct. Our modern methods have not been long enough in use, to attract the kind of folly, that denounces vaccination, but it will appear. When pointing to the vast benefits that mankind has received from the labors of the medical profession, we naturally place at the head the trifling operation of vaccination. This is a contribution of surgery. Next to this stands the practical extinction of scurvy, which decimated the crews on long voyages, seriously crippling commerce. This result must be placed to the credit of the hygienist. Koch is credited with the assertion that the student will soon only know septicæmia by description, as he now knows scurvy. This is the addition to science furnished by the bacteriologist. But this is rendered the greatest boon of all by the surgeon. It is the crowning achievement of modern science, that we have already returned two of the greatest scourges of mankind to the box of Pandora, with a reasonable prospect of adding a third to the list.

It seems incredible that surgeons could have been at any time united in a guild with barbers. The connection in England was severed in 1742, while Mr. Pott was in active life, a man of culture, who has left his mark permanently upon the art. But the surgeon stood in rank far below the physician, and at one time was not allowed to make a surgical operation without the consent of the doctor. But at present it seems as if the future of the profession must be largely surgical. With a single bound the limitations set up by the physician have been pushed aside. The surgeon opens the various cavities of the body, not only to repair injury, but to remove the results of morbid processes. If the physician fails to rectify the abnormal chemistry of the enlarged spleen, the surgeon removes it. If nephritis and pyelitis with organic disease in one kidney is bearing the patient down, the surgeon takes it away. If disease obstructs the bowels, he cuts it out and joins the healthy ends of his cut. If the lungs are the seat of abscess he punctures and drains them. If the brain has an abscess pressing on it and en-

dangering life, he punctures, drains and renders the wound aseptic. It is difficult at the present moment to define the possibilities of modern surgery. It is a fit representative of the time we live in; the combination of science and action.

ORIGINAL ARTICLES.

TRACHEOTOMY IN MORPHINE POISONING.

Read before the St. Louis Medical Society, March 21, 1888.

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About four months ago, I read in the *Medical Review*, a short account of the resuscitation of a physician of Vienna, from opium narcosis by means of tracheotomy and forced respiration with a bellows. It seemed to me to be a rational and feasible procedure, and I determined to try it, should the opportunity present itself.

On the afternoon of March 11, 1888, a young man was brought to the City Hospital in an unconscious condition. It was reported that about an hour previously, in ending up a debauch, he had taken an ounce of laudanum with suicidal intent.

His condition then was bad; cyanosis was marked, the pulse was proportionally weak; and respiration, already shallow, was rendered difficult by the accumulating mucus in the trachea. The pupils were minutely contracted and immobile; extremities cold. The treatment usually carried out in the hospital in such cases was adopted; one-hundredth of a grain of atropia, and several syringefuls of whisky were administered subcutaneously, the syphon-tube was passed into the stomach, and that organ was repeatedly washed out, at first with water, afterward with strong coffee. The flagging respiration was stimulated by douches of cold and hot water alternately dashed over his chest, and to the same end the Faradic current for a time seemed to be of benefit. But notwithstanding our efforts, narcosis became more profound; cyanosis was intensified to a degree which I have seldom seen, and efforts at respiration on his part ceased entirely, so that artificial respiration was substituted, effectually at first, with much less success afterwards. It became evident that unless something radical were done, and that, too, immediately, the patient could not last. I bethought me of the bellows method.

The patient was hastily removed to the amphitheatre, where, with the kind permission of our superintendent, Dr. H. C. Dalton, I performed tracheotomy as rapidly as possible, during which only a gasp was taken now and then, probably two or three to the minute. On separating the severed cricoid, a deep inspiration was followed, as is usually the case at this stage of a tracheotomy, by a considerable interval of quietude. We were about to insert the tube connected with the bellows, when a second gasp produced such a shock on the bronchi by the direct impact of cold air on their mucous surface, that violent coughing was set up, expelling with

each spasmodic expiration, mucus which had collected in the trachea to a considerable amount. By this means the tube was soon cleared of its contents. Coincident with the violent coughing, of course, deep inspirations were taken, just the object aimed at, though attained in an unexpected manner, without the use of the bellows; change for the better began almost immediately. The dark purple countenance gradually paled under the more vigorous action of the heart—however paradoxical that may appear at first thought—and efforts to speak evidenced returning consciousness. A piece of moist gauze placed over the tube, acted as a filter to the inspired air. Injections of stimulants—whisky and ether—were continued at intervals, and another hundredth of a grain of atropia was given, after which the patient was removed to his bed and subjected to frequent and vigorous stirring up when respiration was inclined to flag—and it was so inclined for the next several hours.

Sleep was not prevented, and he was soon wrapped in its soothing embrace.

On the following morning the tube was withdrawn and the incised membrane and cartilage were sutured, the rest of the wound being allowed to granulate.

I should like to be able to close the record of this case *à la mode* with the statement that recovery followed without a bad symptom, but I am prevented from doing that by the fact that four days after his entrance into the hospital, the patient became subject to delirium tremens, from which he died thirty-six hours later. The presence of pneumonia or other complication of that sort was definitely excluded by post-mortem examination.

It may be suggested that possibly the patient might have recovered even after several stoppages of natural respiration, such as the one which precipitated the operation, ordinary methods of artificial respiration being employed. I, too, believe that possible—but not probable, a fact but too often demonstrated in cases of that kind.

I have seen not a few patients with vastly less cyanosis, with at times stronger pulse and more vigorous respiration, succumb under the continued use of that treatment.

And the procedure could add no complication to the already critical situation; on the contrary, it could only be of benefit, by allowing a free vent for the cause of that ominous sign, the tracheal râle, and by shortening and simplifying the channel of communication between the lungs, and that all powerful life-giver "fresh air." As hinted at above, the direct influx of unwarmed air would seem to be no mean factor in conducing to the desired end. Should respiration not be reëstablished, or fail after its repeated reëstablishment, it would be easy enough to insert into the tracheal tube, a tube connected with a bellows, by which the lungs could be forced into activity as long as desirable.

In searching for literature on the subject, the *Index Medicus* directed me to only one article referring to it, that of Dr. G. E. Fell, in the *Buffalo Medical and Surgical Journal*, for November, 1887. In it the author reports the successful treatment by

means of forced respiration with bellows, etc., of a patient who had been poisoned by morphine for a longer time than the one to whom I have called your attention. The narcotism in the former case seems to have pursued a course not so rapid as that of the latter. The apparatus used was the one usually employed in the doctor's physiological laboratory in the performance of artificial respiration on dogs.

The operation was done on July 24, 1887, prior to the one performed at Vienna, and was therefore, so far as known, the first on record. Since then, Dr. Fell has used the treatment with success in two cases, both of which required the prolonged exercise of forced respiration.

In view of the results of the hospital case, I believe that in morphine poisoning, where other means fail, even though it be impossible, on account of the lack of apparatus, to supplement it with bellows respiration, tracheotomy is a wise and justifiable measure.

CORROSIVE SUBLIMATE INTERNALLY IN PUERPERAL AND OTHER SEPTICÆMIAS.

Read before the Gynecological Society of Boston, February 9, 1888,

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I was first led to use corrosive sublimate internally in puerperal septicæmia by observing its beneficial effects in diphtheria. The principle on which I base its use was announced in 1884, at the Medical Congress in Copenhagen, by Dr. Bouchard, who then made this statement: "Medical antiseptic therapeutics does not propose to kill the microbe, but only to stay its pullulation. Even slight modifications in the human infected organism may prevent the indefinite multiplication of certain microbes which have invaded it."

It was found by Roice, of Utrecht, that in any suppurating focus microbes are found in the blood and kidneys. Dr. H. J. Garrigues, in his paper on puerperal fever in the genital tract of puerperal women, has endorsed this view by recommending, in addition to local treatment, "carbolic acid, sometimes combined with the compound tinct. iodine." If we can hinder the proliferation of microbes, or render them inert, is it not as important as their elimination from the system? Dr. Macan, in his report of the Rotunda Hospital for 1883, declares that he knows nothing which will quicken the elimination of the poison from the system in hetero-genetic infection. In cases in which the source of poison is hetero-genetic I am accustomed to attempt to sterilize the air in the patient's room by means of iodine vapor. I place iodine sales in cups with a little alcohol and suspend them around the room. The fumes are not disagreeable nor very irritating, and are well borne. I have used bromine, but find it rather troublesome to the throat.

My initial dose of corrosive sublimate is $\frac{1}{16}$ grain,