

uselessness of the artificial respiration, until it was feared that the patient might succumb before the forced respirations could be applied. 3.40 a.m.—Operation of tracheotomy begun. Blood venous. Dr. Hanley remarked at the time that it was "ebony colored." 4.05 a.m.—*Forced respirations* begun. In a short time the pulse became stronger and was reduced to 78 per minute. 5.30 a.m.—Pulse 102. 5.45 a.m.—Pulse 64. 6.25 a.m.—The patient, *up to this time insensible*, opened his eyes, stared in a half dazed manner, and raised his head above the pillow. He recognized Dr. Goldberg (by voice only, as afterwards stated), and, in answer to inquiries, stated that he had taken twenty grains of chloral with some stimulant. This was found to be untrue. 6.45 a.m.—First noted that when forced respiration is discontinued, not the slightest attempt at breathing is made by the patient, even when the cyanotic condition is extreme.

During the progress of the case water was frequently swallowed by the patient. In one or two instances the forced respirations were unintentionally kept up when the patient was swallowing. The glottis being opened at this time, water entered the lungs, and was subsequently coughed up and passed out of the valve of the apparatus.\*

7.00 a.m.—Pulse 96. 8.15 a.m.—Pulse 108. It was found that the patient could breathe for himself, but only for a short time, and forced respirations had to be continually kept up. 9.00 a.m.—The trachea tube not being secured tightly in the trachea, permitted quite an amount of blood to pass into the lungs and the air to pass upward into the mouth, so that the lungs were not thoroughly inflated at each inspiration. This blood gurgled ominously at each respiration. With a curved needle encircling the trachea, another ligature was passed and tightened about the trachea and tube, as the rings to the tracheotomy tube had not been devised or value of face mask known at this time. The forced inspirations following markedly improved the action of the heart.

\*This indicates, in part, the value of the application of the apparatus in cases of drowning; also that it would be objectionable to pass a tube into the larynx by way of the buccal cavity when the elimination of poison is important, as liquid, in swallowing, would be apt to enter the lungs. It indicates the value of the face mask in drowning. See later pages.

As the poison became more completely incorporated with the blood, the effect of even a short stoppage of the forced respirations was indicated in a weaker action of the heart. At one time the rubber tube connecting the respiratory or air valve with the trachea tube became almost completely clogged with clotted blood. It was removed and thoroughly cleaned, as was also the inner tube of the tracheotomy tube a number of times. Digitalis fluid extract, in half minim doses, was given a number of times, also atropia, one-eighth grain at one time and smaller doses also. No dilatation of the pupil took place at this time.

The question of keeping up the forced respiration when there seemed to be no prospect of the ultimate recovery of the patient was seriously discussed. I was urged to discontinue the respirations on account of the case being considered hopeless. At one time I stopped the respirations for a longer period than usual, thoroughly discouraged and tired. The man was not dead, and we had to keep it up.

11.30 a.m.—Drank some brandy and water; vomited. As the patient had at this time been given up to die, his family were permitted to see him and "bid him good-bye."

12.00—Pulse 117. Grain 1-75 of atropia administered hypodermically. 12.10 p.m. Face cyanosed; efforts to breathe made; twitching of toes; respirations not supplying air enough. 12.40 p.m.—Owing to a solution of atropia being placed on or in the eyes, the pupils gradually dilated.\* Pulse 126. 12.55 p.m.—The patient, who had become unconscious for a short time, regained consciousness and drank some water. Pulse, after drinking, 168, weak and flickering. After this, more air was administered by giving three movements of the bellows for the inspiration instead of two, as formerly.

3.20 p.m.—Temperature 100.5° Fahr. 6.00 p.m.—Pulse 120.

After nearly fifteen hours of forced respiration, at 6.15 p.m. the patient began breathing for himself. Respiration, fourteen per minute. This lasted fifty-five minutes, when the respirations lowering to *eight* per

\*This may not have been judicious, but it was done under the belief of all the physicians present that the patient could not recover.