

out occasionally, as if in pain. Her pupils were strongly contracted, and this, in connection with the fact that I had treated her at different times for attacks of bilious colic, led me to believe that she had been overcome by one of these seizures, and, having resorted to opium in some form, had taken an overdose. In searching her, we found an almost empty bottle labelled "Laudanum."

The stomach-pump was used at once and the stomach found empty. However, apomorphin and brandy were administered hypodermatically, and the stomach was washed out with warm water. Retching occurred, but no vomiting. Strong coffee was then given, hypodermatic injections of brandy and one-thirtieth grain of atropin were administered freely, and the girl was forcibly held on her feet and kept moving. Flagellation with wet towels was also resorted to whenever the patient flagged, and as soon as those attending her were tired others took their places. At 10 p.m. these methods failed to be of use, and in spite of all efforts the patient became limp and unconscious. The face was cyanosed; the conjunctivæ injected; the pupils were the size of pin-points, and the respirations, which had been fairly good up to this time, fell to four per minute. The heart began to fail, and the extremities were cold. She was then placed in bed and twelve nurses, four at a time, relieved each other in applying massage. At 11 p.m. the respirations were three per minute, and the pulse, hardly perceptible at the wrist, was rapid and intermittent. Although we felt that we had a hopeless case to deal with, as a last resort the Faradic battery was brought in operation, one electrode being placed at the diaphragm, the other over the phrenic nerve at the neck, with the result of increasing the respirations and relieving the heart for an hour, when this method became unsatisfactory, as the diaphragm failed to respond to the stimulation. At the suggestion of Dr. Prout, third assistant physician and pathologist, the electrodes were placed one over each phrenic nerve at the point nearest to the surface where they pass in front of the scalenus anticus muscles, with a most gratifying and unlooked-for result. Respirations were increased or diminished at will, and immediately upon the contact of the electrode a full and forcible respiration occurred. At 1 a.m. the respirations had

ceased entirely, except those produced by the strong electric current. The pupils were still contracted in spite of the one-thirtieth grain of atropin which had been given every half-hour since 10 p.m., and the patient was comatose. Dr. Prout and myself relieved each other at the battery every half-hour, and artificial respirations were kept up for six hours, or from 11 p.m. to 5 a.m., when our patient partly regained consciousness and the respiratory function became re-established. At the end of three days she was practically well, with the exception of an erythematous rash (probably due to the atropin) that covered her body and face, and which finally faded away.

I desire to again call attention to the method of applying the electrodes, viz., one over each phrenic nerve at either side of the neck. There is no mention of such a method in any of our text-books which have come under my observation, nor have I ever seen any literature bearing upon their use in this manner. It certainly produced the desired effect, while the usual method of applying the electrodes to the nerve at the neck and the diaphragm failed. The normal number of respirations was produced for six hours consecutively, and the patient never failed to respond to the contact of the electrodes used in this manner.—By ELIOT GORTON, M.D., in *Medical News*.

SURGERY.

Theory of Mechanism of Cerebral Injury by Contre-Coup.—When the skull is struck forcibly at a particular region—say, the occipital—the comparatively rigid cranium is driven, as a whole, *away* from the point of impact (forwards in this case); but the brain, owing to its softness, lags behind, and tends to flatten itself against the cranial wall on the struck side (occipital). This may cause direct injury. But the cranial wall here supports the brain-substance, and distributes the force of the blow over a wide area, rendering the injury less acute. The chief injury occurs on the opposite side (frontal), where the lagging brain tends to move *away* from the cranial wall, and receives no support from it. *At the centre of the unsupported surface there is a point from which the soft brain-substance is tending to depart in all directions* in the act of flattening itself. At this point