

cases can now be safely conducted through capital operations, that formerly would have been deemed unable to bear any surgical interference.

"Before quitting this subject, I must mention a case recorded by a most careful and accurate observer, my friend and former instructor Mr. Paget, of which he remarks: 'It was very observable that the ill effect of chloroform was exercised on the heart more than, and earlier than, on the muscles of respiration.' A man labouring under tetanus inhaled chloroform, and 'was brought under its full influence. I was trying to open his mouth, but the face was still fixed and white; still trying, we saw him become extremely pale, and then bluish about his lips and nose, then he began to breathe heavily and frothed at the mouth, and his pulse, which had been irregular during the inhalation of the chloroform suddenly stopped; his heart ceased to beat, and in a few seconds more he ceased to breathe, became motionless, with his limbs flaccid. He was to all appearance dead, and thus he remained for about a minute and a half, when again his heart began to act, blood returned to his face, and his pulse again became full, when he began to breathe again, and presently he breathed freely.' Such a case, recorded by so trustworthy and accurate an observer, might go far to upset all the doctrines I have been endeavouring to maintain with regard to the action of chloroform; and although I do not attempt to explain the phenomena, I would desire to draw attention to two points in the history, which I think, if rightly considered, will deprive the case of much of its apparent importance. In the first place, then, the patient was suffering at the time from tetanus, a disease characterized by the most violent spasmodic contraction of the voluntary muscles, and sometimes, there is good reason to believe, of the involuntary also; and in the second place, let it be remarked that the pulse stopped suddenly at the time Mr. Paget was trying to force open the mouth.

"If we admit that shock from mechanical injury may sometimes take place during the anæsthetic condition, the importance of always insisting on the horizontal position during the performance of operations while in this state will be evident; for then, if shock, and its consequence syncope, should occur, the danger of its proving fatal will be greatly lessened. But while, for my own part, I feel tolerably confident that syncope, and even fatal syncope, is sometimes produced under the circumstances I have mentioned, I fully acknowledge that, before the fact can be established, more observations must be made, more cases of death accurately observed, and the entire subject more fully and carefully investigated."—*Monthly Journ. Med. Sci.* Sept. 1853.

73. *Tartrate of Antimony*.—Edinburgh Physiological Society, February 5, 1853. Dr. HALDANE gave the result of some experiments on the urine of a horse, to which large doses of tartrate of antimony had been administered. It was a remarkable fact that doses of an ounce or even larger quantities of tartar-emetic could be administered to the horse for a length of time without producing any effect whatever. In the urine of a horse so treated, Dr. H. had by careful analysis detected antimony, but only in very minute quantity.—*Monthly Journal of Medical Science*, February, 1853. T. R. B.

74. *Mineral Constituents of the Human Body*. *Arsenic*.—Devergie and Orfila believed that they had found arsenic in all animal bones, and hence that it should be regarded as an integral constituent of the animal organism. Subsequent investigations have, however, shown that there must have been some fallacy in the method of analysis pursued by these chemists, and that this view is altogether erroneous.

When positive experiments seemed to show that arsenic existed in the bones, chemists thought they had found an explanation of the apparent fact in the circumstance that phosphorus and arsenic are so frequently associated together; if the discovery of Walechner and Shaffhault, that the sediment of most chalybeate waters contain arsenic, had then been known, they would doubtless have been regarded as strong additional proof of the presence of arsenic in the animal organism.

Arsenic acts in so noxious a manner on the animal organism, even in the