influence of the anesthetic (ether) might have ample time to disappear, and then observations were made on the following: (1) The minute volume of air breathed; (2) the alveolar CO_2; (3) the total CO_2, P_H and (5) the lactic acid content of the arterial blood; and lastly, (6) the total acid excretion by the urine.

The general nature of the results is indicated in the following table in which the above values are given for an animal which showed no dyspnea (XXIII), and one in which this and irregular breathing were pronounced (XXII).

These experiments typify the results in extreme cases; the animal in XXIII remained in perfect condition for over five hours after the decerebration, whereas in that of XXII the breathing, although normal at the start, became later rapid and dyspneic, death, preceded by vomiting, occurring in about three and one half hours after the decerebration. Of a total of thirteen animals so far observed, six behaved like XXIII, for at least five hours, and four like XXII, while three gave intermediate results. Animals in both of the latter groups died within three hours. In the animals of the second group which provisionally we may call the acidosis group, the following changes were invariably found: (1) A progressive decrease in alveolar CO_2 followed later by (2) a decrease in blood CO_2, (3) an increase in acidity (P_H lower and (4) an increase in the lactic acid content of the blood. The excretion of acids and ammonia by the urine was irregular. The simplest interpretation of the results is that the development of a condition of acidosis is responsible for the changes observed in the dyspneic group of animals. It is further of interest to record, that decerebrate rigidity was much more pronounced in the "acidosis" animals than in those that remained normal. Whether the rigidity is responsible for the acidosis, by causing lactic acid to be discharged in excessive quantities into the blood, or whether it is an effect of the acidosis, is at present problematical.

Marked glycosuria was common in most of the animals.