pulmonary veins, showing that the dark venous blood which had passed through the lungs met with obstruction at this part of its course.

These are the phenomena observed in cold blooded animals that die by asphyxia during the highest temperature of the season, at which period their physiological condition approaches that of the warm blooded, all the functions of the body being carried on with the greatest vigour. But when asphyxia is not so rapid in its operation, the action of the ventricle continues longer in unison with that of the auricles, though there be every appearance of the extinction of life in the animal.

On opening the thorax of another frog that had been subjected to the influence of asphyxia nearly two hours, we found the heart beating though feebly at the rate of 16 pulsations per minute, the ventricle acting in unison with the auricles. But blood had accumulated to a considerable extent in the large veins around the heart. As the action of the ventricle grew weaker, it became more irregular, and was only occasionally excited by the contraction of the auricles till it at length ceased. The ventricle now remained motionless and contracted, but the auricles, greatly distended with blood, continued to pulsate with the venæ cavæ and pulmonary veins for a considerable time after the ventricle was quiescent.

Exp. IV. August 4th. Temperature 80 *Fahrenheit.*

Placed a frog in a glass jar full of water, and inverted this in another vessel containing water, thus excluding every particle of atmospheric air from the lungs, and kept the frog in this position till asphyxia was produced, which took place in about an hour.

In this case the asphyxia was not so perfect, as the heart continued to beat at the rate of 22 pulsations per minute. But respiration remained suspended, and the frog was totally insensible to every kind of irritation employed to arrouse it. I employed artificial respiration at intervals and in 20 minutes the heart had come to beat at 30 per minute, but no symptom of sensibility appeared.

I then opened the abdomen and thorax, and found that both auricles and ventricle continued to contract vigourously, and there was little or no congestion of blood in the large veins around the heart, as in the former case. The lungs were not much distended, and their vessels contained dark blood.

The left auricle continued to contract with great vigour, even more so than the right. Blood was transmitted along the aorta, for on making a slight incision into the left branch, a small jet of dark venous blood was propelled at each contraction of the ventricle.

This experiment proves that whilst the heart contracted at the rate of 30 pulsations in the minute the circulation of the blood was maintained with considerable vigour.

Exp. V. July 20th.

Placed a frog in a phial full of water, from which every access of atmospheric air was prevented, thus arresting all respiration by the lungs. I allowed the frog to remain nearly two hours in this position; and on removing it from the water, and placing it on the table found that it was totally insensible to every irritation. Respiration was suspended, and the action of the heart was reduced to 18 pul-