

even in man, the carbonic acid expired is augmented without those pulmonary lesions, found by us in paralytics, having been presented.

There is yet the mechanical theory, which has been maintained principally by Bernard and Boddaert. It furnishes a plausible, though a venturesome interpretation of the facts. Bernard holds that the respiration increases in intensity, because whilst a normal rabbit inspires 20 c.c. of air, after cutting the vagi, it emits 32 cc. of it, so that the pulmonary vesicles become distended beyond measure, and from this there results that traumatic emphysema, which is one of the most constant of the anatomical findings in animals subjected to these experiments, together with blood engorgement and finally rupture of the vessels and infiltration of blood in the air channels.

Boddaert, in his very interesting work, holds that by section of the vagi, not only is the sensibility of the air passages abolished down to the pulmonary vesicles, but also, and principally, the contractility of the bronchi, and hence the air is not all expired, and the respiration is diminished and aggravated by the consecutive repletion of the blood vessels, and by ecchymoses, hemoptysis, oedema, emphysema and atelectasis. On the other hand, because of the increased activity of the heart, increased blood pressure takes place in the pulmonary system, and in consequence, hemorrhage and serous exudation in the pulmonary alveoli. The atelectasis would in part result from the emphysema, and in part from the obstruction of the bronchi by serum, mucus, &c. True inflammatory processes, according to this author, are not verified; he thus seconds the theory of Traube, which ascribes the morbid conditions to the entrance of particles of food and the buccal fluids into the air passages.

This is, within certain limits, true. The mechanism of respiration is notably changed by section of the vagi; but whilst in rabbits the thoracic expansion becomes more extended than in normal conditions, and there is, therefore, as Bernard states, a more active exchange of gas, so that the the alveoli remain distended; in dogs, on the contrary, the respiratory movements are slow, and they are deep only under the influence of emotions