

With regard to the temporary and periodical variations in blood-pressure consequent on respiration, certain considerations are of great moment.

1. The negative pressure in the thorax during inspiration forms but a small subordinate part of the cause affecting the aspiration of the heart (suction-pump action).

2. The capacity of the pulmonary vessels bears an inverse ratio to the systemic arterial pressure—*i.e.*, the greater that capacity the more blood is withdrawn from the systemic vessels and the blood-pressure must be lowered, and *vice versa*.

3. increase of resistance in the pulmonary vessels causes a fall in the arterial pressure, and *vice versa*. Blood is withheld from the systemic circulation.

4. An increased resistance in the pulmonary vessels, occasioning a fall in the arterial blood-pressure, must cause a rise in the venous blood-pressure. It is found, experimentally, that the respiratory curves of arterial and venous pressure in the carotid and jugular run counter to each other. But variations in the capacity of the pulmonary vessels exercise the same influence on arterial and venous blood-pressure; *e.g.*, increase in capacity will effect a fall in both arterial and venous pressure by lessening the tension all over the vascular system.

5. During normal respiration, the capacity is increased and the resistance lessened during inspiration and the reverse during expiration. Exactly the contrary of all this holds for *artificial* respiration.

6. As the results of compression of the abdomen, *per se*, with other interfering factors experimentally removed, it is found that the curve of both jugular and carotid pressure rises. This is owing to the narrowing of the small veins in the abdomen, a lessening of their capacity; hence a portion of blood is expelled from them, causing a rise in both arterial and venous pressure, as measured in the carotid and jugular respectively. This is De Jager's explanation, but it seems to us capable of another; in fact, it is just one of those cases that it would be quite impossible to decide independently of experiment.

It seems to us these facts must have an important practical bearing in cases of straining. Owing to the presence of valves