

THE MOULTING MECHANISM IN THE HEADS OF LIZARDS.

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(Abstract.)

One of the muscles of this mechanism was described before the Academy of Science several years ago (1). The complete mechanism, which I have recently described in the American Journal of Anatomy (2), includes the following more important parts:

1. The veins and blood sinuses of the head.
2. Special muscles which distend the sinuses and raise the venous blood pressure. One of these muscles (*m. constrictor venae jugularis internae*) invests the chief cephalic vein at the point where it passes from the head into the neck. A second muscle (*m. protrusor oculi*) lies behind the orbit in close relation to the large orbital sinus.
3. The cardio-accelerator mechanism. During the operation of the moulting mechanism the number of heart-beats increases and a larger amount of blood is sent to the head.

In the operation of the moulting mechanism two stages occur. The first stage is characterized by contraction of the constrictor muscle and by acceleration of the heart-beat. The veins and sinuses of the head are distended with blood; the eyes protrude. The second stage is caused by contraction of the protrusor muscle and others which press upon the distended vessels and raise the blood pressure to a higher level.

The distension of vessels and elevation of blood pressure aid in exuviation by stretching the skin and by facilitating the processes of metabolism. The moulting mechanism may be set in motion in an experimental way by the application of court plaster, or similar material, to the head.

In snakes and turtles the internal jugular vein is provided with a constrictor muscle, but the protrusor oculi is wanting. The simpler mechanism of these forms probably has the same function as the more complicated apparatus of the lizards.

1 Proc. Ind. Acad. Science, 1898, p. 229.

2 Am. Jour. Anat., Vol. VII, 1907, pp. 1-117.