atrio-ventricular funnel of *Malacoclemmys geographica* are the portions which are most efficient in conducting the contracting impulse from the auricles to the ventricle. When the auricles are partially separated from the ventricle by a series of cuts leaving only a narrow connection, and in consequence of which atrio-ventricular block (complete or incomplete) has been brought about, it is these parts which are later most capable of conducting the impulse from the auricles to the ventricle so that the contractions of the latter follow those of the auricle coördinatedly, or so that the incomplete block is decreased.

Stimulating the funnel of beating (in situ and excised) and still hearts (first Stannius ligature) with single shocks (quick make and break) and with interrupted currents of short duration have shown (1) that the funnel is more easily excited than the base of the ventricle, (2) that the right and left parts of the funnel are more easily excited than other parts (dorsal and ventral) and (3) that the excitability of the funnel increases as one approaches the auricle.

The stimulation of the funnel just below the level of the A-V boundary of beating hearts with interrupted currents, even when these are strong and of long duration, can only occasionally produce a "fibrillation" of the ventricle or a V-A rhythm (funnel rhythm) which lasts over after the stimulation is discontinued. This is possible, however, and curves have been obtained from excised hearts showing a duration for several seconds of a funnel rhythm following a ventricular "fibrillation." In the still heart the setting up of a funnel rhythm is more easily and frequently accomplished, and several cases have been registered showing a funnel rhythm lasting for several minutes.

104 (1168)

The influence of the vagi and of the sympathetic nerves on the rhythm-forming power of the atrioventricular connection in the turtle.

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The investigations here reported were undertaken to determine the action of the vagus and sympathetic nerves upon the

V-A rhythm produced by electrical stimulation of the atrio-ventricular funnel. In *Malacoclemmys geographica* the two nerves are not fused into a single trunk, but run separately in the neck just median to the carotid artery. The turtles were decerebrated, and the plastron removed, the circulation being kept intact to a large degree. The vagus was stimulated just above the thoracico-abdominal ganglion, and the sympathetic, between the median cervical and the first thoracic ganglion.

Stimulation of the vagus nerves alone gave the usual results. The effects of sympathetic stimulation were, however, not so clearly marked. The general effect was a slight augmentation of the auricular contractions. Acceleration of the heart beat was less frequently obtained, the average being from 2 to 3 beats per minute, although an acceleration of as many as 6 beats per minute was registered.

Conjoint stimulation of the vagus and the atrio-ventricular funnel just below the A-V boundary with relatively strong interrupted currents produces a V-A rhythm which lasts over, in different experiments for varying lengths of time, after the stimulation has been discontinued. In these cases stimulation of the vagus nerves with a current of sufficient strength to still the normal heart causes only a decrease in the height of the auricular contraction with no effect on the rate of beat. Stimulation of the sympathetic with strong currents stops the funnel rhythm, after which a normal atrio-ventricular beat begins.

105 (1169)

Changes in form and position of the retinal elements of normal and transplanted eyes of Amblystoma larvæ occasioned by light and darkness.

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In order to investigate the changes occasioned by light and darkness in the retinal elements of a Urodele a series of experiments on large (37 to 45 mm.) larval and on recently metamorphosed individuals of *Amblystoma* was carried out. It was found