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**Heart Rhythms in Frog and Turtle as Affected by Ultraviolet Point Radiation.\***

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The apparatus used in these experiments has been previously described in a paper published in this journal,<sup>1</sup> and consists of a Cooper-Hewitt quartz mercury-vapor arc as the source of radiation, running at 110 volts D. C. A quartz rod placed at right angles to the axis of the arc, and pointed and bent at a slight angle served to conduct the radiation from the arc to the desired point on the heart's surface. As previously reported for *Fundulus* hearts, it was possible to obtain an increase in rate of heart beat, or a decrease in rate depending on the length of the period of exposure.

Short exposures in the region of the sino-auricular node of both frog and turtle produced a noticeable increase in rate. When the exposure is too long continued, a decrease in rate follows, and the normal sequence of auricle and ventricle beats may be interfered with. In this connection, further experiments are being done and will be reported in a later paper. Experiments with ultraviolet radiation and heart-block are also under way.

It has been possible to stimulate the heart of a frog to regular beat, normal in sequence and in amplitude, by radiation at the sino-auricular node after the heart has been quiescent for an hour or more. Whether this be a question of stimulation of the pace-making region to greater activity so that the magnitude of the impulse is great enough for conduction through the heart tissue, or whether the pacemaking region is entirely quiescent and is at once stimulated to activity by the exposure, remains to be determined.

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<sup>1</sup> Hinrichs, *Proc. Soc. Exp. Biol. and Med.*, 1930, xxvii, 354.