

*Influences Affecting the Natural Rythm of the Heart.* Among these, in addition to mechanical excitation inducing a reversed rythm already referred to, must be especially mentioned the condition of the blood supplying the heart as to degree of oxidation. Blood, poor in oxygen, with greater readiness than in other cold-blooded animals, causes irregularity or arrest of the heart in a fish.

*Faradisation of the heart* in the fish leads to results very closely allied to those obtained in the Chelonians.

*Reflex Cardiac Inhibition.* The ease with which the heart of a fish can be reflexly inhibited by the stimulation of various parts of its body, is one of the most remarkable facts brought out by investigation on the heart physiology of the animal.

The results are much the same whether mechanical or electrical stimulation with the rapidly interrupted current be employed. The parts that have been found most effective in *Batrachus* are the gills, the air bladder, the abdominal viscera, the mucus lining of the mouth, the tentacular appendages of the mouth, the pectoral fins, the anus and the tail.

The results may be either (1) decided arrest of the heart for several seconds, followed by a slowed rythm, or (2) brief arrest of the slowed and irregular rythm or (3) the latter lasting from one to two minutes or longer without any actual stop of the heart. In some cases the operative procedure necessary to expose the heart is sufficient stimulus to keep the heart long inhibited. *The results of inhibition* are not uniform. In some cases no acceleration seems to follow, but in others and the majority, there is decided acceleration of the rythm.

*Peculiar Results associated with Reflex Cardiac Inhibition.* Stimulation of several of the parts mentioned above, and especially of the anus and tail, have given the following results :

- (1.) At first an accelerated rythm followed by a slowed rythm, or
- (2.) An accelerated rythm followed by a slowed rythm on increasing the current, or
- (3.) Only an accelerated rythm.