decrease in frequency and amplitude from which there was no recovery. Since a dilution of 1 eye stalk = 0.2 cc. does not always evoke a pronounced response in *Crago* chromatophores the excised heart of *Myoxocephalus* would seem to offer a more sensitive test of the crustacean eye stalk hormone than does the former.

STRUCTURE AND GROWTH OF SCALES IN FUNDULUS HETEROCLITUS

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The purpose of the study was to learn something about the formation of the circuli or marginal lines of growth and the radiating grooves which are seen in surface views of many fish scales.

The scale in a longitudinal histological section resembles a lancet with barbs along the upper side. The barbs are really sections of ridges which give the effect of lines in the surface view. The upper portion of the scale consists of a thin homogeneous basic staining material and the lower somewhat thicker acid staining part shows longitudinally arranged lines. At the deeply imbedded end of the scale may be found varying numbers of cells, often giving the appearance of a knob or a papilla. Flat cells are also closely related to both upper and lower surfaces. Transections show that the radial grooves of the surface view consist only of the homogeneous basic staining material and that the calcareous deposits of the lower part of the scale are lacking.

In the growth of the scale, the lower cellular end penetrates the connective tissue fibers which adhere in bundles on the upper side and are incorporated into the homogeneous basic tip. Alternating with the extensions of the c.t. bundles into the newly formed scale are cells. As the scale grows, the bundles of fibers lose their attachment, and ridges (circuli in surface view) mark their place of extension into the scale. Connective tissue cells are closely related to the under surface yet are not incorporated as the calcareous material is gradually deposited.

THE SEPARATION OF THE HYPOPHYSIS CEREBRI OF CERTAIN SELACHIANS (SQUALUS ACANTHIAS AND RAJA STRABULIFORIS) INTO SIX DISTINCT LOBES

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Investigations lately undertaken on the hypophysis cerebri* (Lewis, Butcher, Halsey and Geiling) required a more careful sepa-

* Reported in this Bulletin.