prepare precipitating antisera. Each antiserum produced as a response to the injection of a specific antigen (body extract) will be tested against all the molluscan antigens. The degree of intensity of reaction between antigen and antiserum will be taken as the relationship of the species compared. By this method new light on the interrelationships of some common Mollusca may be obtained.

It would be well to mention that animals for these extracts must be obtained in abundance and *Chrysodomus* was found easily at Pretty Marsh. *Mya* was very abundant in the mud flats near the laboratory. Also two rare Mollusca, *Aporrhais* sp.? and *Dentalium pretiosum*, were found to be plentiful in the water around Sutton Island, near Seal Harbor.

REPORT OF WORK DONE AT THE MT. DESERT ISLAND BIOLOGICAL LABORATORY DURING THE SUMMER OF 1932

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In the course of the summer, preliminary work on a study of the finer anatomy of the musculature of the digestive tract of *Squalus acanthias* was done. A series of preparations of portions of the tract were made. From these it would appear that the striated muscle of the oesophagus extends considerably further down than heretofore reported. The cardiac stomach certainly has striated muscle and this seems to extend in a gerater or lesser degree into the pyloric region.

The so-called "cramp striations" described by Dahlgren were produced by the electrical stimulation of strips of muscle from the stomach. These bands, which seem to bear no relation to the striation of the muscle, extending through the Z stripe as well as the M stripe frequently for a distance of many sarcomeres, give the appearance of being of the nature of typical smooth muscle contractions. There can be no doubt that they are due to swellings of the myofibrillae, as they are clearly visible, and distinctly parts of individual fibrils.

It is difficult to relate these contractions to the present physiological concept of the contraction process. The work of E. J. Carey lends substance to the hypothesis that the heavy contraction bands that have been observed in this striated muscle are really smooth muscle contractions, for, by his work on the bladder muscles, he has shown that there is no fundamental difference between the two types of cells. It seems reasonable to suppose that these contractions are involved in the as yet unexplained phenomenon of contractures.

With this in mind, the nervous innervation of the muscle is being examined, and a psysiological study is being made to determine the exact conditions which give rise to these bands, as well as to determine accurately the conduct of the muscle under the circumstances.