

with six or eight medium sized green ovoid bodies and those with anywhere from two to many orange-yellow globules. The *Boltenia* examined failed to show any colored cells. This may have been due to some special conditions or to a failure to look in the right part of the vascular system as it was obvious in the other genera that the distribution of pigmented cells within the vascular system of an individual is very uneven.

All the species examined possess a variety of leucocytes. That their classification presents some difficulties is indicated by the fact that Fulton (1920), George (1930) and Huus (1937) each proposes a different system. Cells belonging to all three of Huus' categories, granular, hyaline and vesiculated were present in all the forms studied with the possible exception of *Boltenia* although often in very different relative proportions. Typical "compartment" cells either pigmented or not were absent in *Halocynthia* though some "signet ring" cells were observed.

Neutral red produced a striking differentiation between the various leucocytes. Many stain so deeply that their features are obliterated. Others take up the stain to a moderate degree. Still others, in *Molgula* and *Ascidia* well over 50% remain entirely unstained. These are the finely granular cells. Both "compartment" and "signet-ring" cells react in the same way which supports the view of George (1930) based on other grounds that these two types of cells are very closely related genetically. With Giemsa's stain both basophilic and acidophilic cells are evident but their positive identification must await further work.

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FAUNAL NOTE: AN INSHORE *CERIANTHUS* AT MOUNT DESERT ISLAND

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Cerianthus americanus Verrill or a closely similar species of this large and beautiful sea anemone was found in moderate abundance just below low tide lines on a gravelly bottom on the southwestern part of the island. Previous records (Parker 1900, Carlgren 1912, Pratt 1935) as well as information obtained from Professor Ulric Dahlgren, the actinian collection in the National Museum, etc., all denote Cape Cod as the northern limit of this species which extends southward to Florida.

The individuals captured were approximately five inches long in a moderately expanded condition but were capable of much greater extension. The coloration of the tentacles showed

considerable variation. The same animal was found early in the summer at South Harpswell, Maine, in a similar location. Over restricted areas every square meter held two or three individuals.

Whether this is identically the same species which H. J. Clark discovered in Charleston, S. C., in 1852 and Louis Agassiz first described in 1859 and which was named *americanus* by Verrill in 1862 can only be determined by a competent taxonomist. A number of discrepancies exist between the various accounts of this species in regard both to color and anatomical features (see Verrill, McMurrich and Carlgren). The latter authority has created a new genus, *Ceriantheopsis*, especially for this species.

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[The 1862 papers are included in the 1866 volume.]

THE CONDITIONS OF ILLUMINATION OF THE EYE NECESSARY FOR INDUCING THE DIFFERENT MELANOPHORIC RESPONSES IN *FUNDULUS HETEROCLITUS*

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Previous investigations have established the fact that the upper region of the eye of *Fundulus heteroclitus* is related to the paling response of the body, and the lower region to the darkening (Butcher, 1938). When these different regions were illuminated by mazda electric lamps, it appeared that less illumination was necessary to induce darkening. Accordingly, experiments were undertaken to determine the illumination necessary for darkening and paling.

With a black background below, some animals became dark when receiving as little illumination as 2 footcandles from above. To induce darkening in a majority of the animals, 4 footcandles were necessary, however. Animals responded equally as well to light from a mazda lamp as to light diffused through opal glass. When the black background was removed and non-illuminated space existed below the glass bottom of the dish, the reflected light received by the fish from the glass bottom was usually sufficient to inhibit darkening, regardless of the illumination from above. Thus, the reflected light from below had to be reduced nearly to 0 before complete darkening could be induced by illumination from above.