

1963 #1

BROMINATION OF PHTHALEIN DYES BY THE UTERUS OF THE DOGFISH, Squalus acanthias

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The observations that phenol red is brominated by the pregnant dogfish uterus in vivo were extended and chlorophenol red, metacresol purple, and fluorescein were also found to be brominated. Some evidence was obtained that p-hydroxybenzoic acid and phenol were similarly brominated. After intrauterine administration of fluorescein, 4,5 dibromo-, 2,4,5-tribromo-, and 2,4,7-tribromofluorescein could be recovered in 24 hours and after 48 hours only eosin could be recovered, thus implicating a stepwise bromination. In vivo bromination could be inhibited by administering 10 mM of sodium azide with the dye. The bromine was derived from an extraneous source but sea water could be replaced with a solution of NaBr. Bromination did not occur in non-gravid dogfish. Bromination was also demonstrated by in vitro incubation, the pH optimum was found to be 7.4 and the site of bromination seemed to be the epithelium of the uterus.

1963 #2

OCCURRENCE OF THE CILIATE URCEOLARIA (Peritrichida, Mobilina) ON THE SEA URCHIN Strongylocentrotus droebachiensis

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Examination of the literature shows that epizoic species of Urceolaria have been reported from various invertebrates, including flatworms, mollusks and polychaetes, but not from echinoids. In 1963 urceolarias were found in abundance on S. droebachiensis at Mt. Desert Island. They occurred chiefly on the short spines (length, 2-4 mm.) and on the stalks of the triphyllous pedicellariae of two regions of the urchin test, viz., the flattened circumoral region and the region surrounding the periproct. Specimens were found in smaller numbers on the long spines (length, 5-10 mm.) of these regions, but only on the basal third of each or at most the half. (Spine-lengths refer to urchins having tests 40-60 mm. in diameter.) They occurred very sparingly on the spines and pedicellariae of the equator of the test. In general, the number of specimens per faunated short spine varied from 5 to 40 or more (maximum observed, 95), and on some urchins 50% of the short spines had ciliates. Triphyllous pedicellariae usually had 5-20 apiece.

With reference to incidence of the ciliate, examinations were made of 187 urchins from three localities: Laboratory Point, Long Ledge and Googin's Ledge. Of these urchins, 157 (84%) were positive, suggesting that the ciliate is of common occurrence on the host. Study of the gastroles indicated that the food is entirely bacterial, and thus the ciliate appears to be a harmless epizoon. Some characteristic features are its low cylindrical form and H-shaped macronucleus,