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## Notes on Invertebrates Found At Salisbury Cove, Maine In July 1952

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In a little less than three weeks (July 8-27, 1952) of casual collecting the 61 species of invertebrates listed below were found in shallow waters of Salisbury Cove, Maine, at or near the Mount Desert Island Laboratory. This list is not to be construed as being necessarily representative and is far from complete. Many species of Protozoa, Nemertinea, Nematoda, Annelida, Copepoda, etc. were observed abundantly without being identified to other than the larger taxonomic categories. It is probable that the list includes mostly animals that are very abundant, but the appearance in the list of a few species which had not been reported before near the station indicates that even this is not certain.

#### PORIFERA Suberites compacta COELENTERATA Clava leptostyla Tubularia crocea Campanularia sp. Sertularia pumila Thuiaria cupressina Cyanea capillata Aurelia aurita Metridium dianthus NEMERTINEA Lineus viridis Micrura affinis BRYOZOA Bugula sp. Schizoporella unicornis Lepralia pallasiana ANNELIDA Lepidonotus squamatus Harmothoe imbricata Eunoa nodosa Neanthes virens Nephthys caeca

Amphitrite figulus Spirorbis borealis Serpula vermicularis Clitellio arenarius MOLLUSCA Lepidochiton ruber Acmaea testudinalis Polinices heros Littorina littorea Littorina rudis Littorina irrorata Urosalpinx cinerea Thais lapillus Buccinum undatum Aeolis papillosa Dendronotus frondosus Mytilus edulis Petricola pholadiformis Ensis directus Mya arenaria Loligo pealeii ARTHROPODA Balanus balanoides **Balanus** crenatus

Balanus balanus Gammarus locusta Aeginella longicornis Crago septemspinosus Pagurus bernhardus Cancer irroratus Carcinides maenas Limulus polyphemu. Halacarus sp. Pallene sp. **ECHINODERMATA** Henricia sanguinolenta Asterias forbesi Asterias vulgaris **Ophiopholis** aculeata Strongylocentrotus droehbachiensis Echinarachnius parma Cucumaria frondosa CHORDATA Halocynthia pyriformis Molgula manhattensis Molgula retortiformis

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Two notes about the Echinoderms might be of interest. The starfish, Asterias forbesi, is usually considered to be of more southerly distribution than A. vulgaris. From the earlier surveys (1923-25) of the Salsbury Cove region, it would seem to have been rather uncommon. This summer, however, it was quite abundant - about 1 forbesi to 5-8 vulgaris. It is possible that this is a reflection of the increase in average summer temperature of waters along the north Atlantic coasts which some workers report. The sand-dollar, Echinarachnius parma, which is usually very common on mud flats near the laboratory, was rather rare this year. Thousands of tests of dead sand-dollars were found, indicating that the reduction in numbers had occurred shortly before.

# The Effects of 6063 Injections On Urine and Plasma Composition in Fishes

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Some years ago W. W. Smith<sup>1</sup> reported from this laboratory that the pH of the urine in the dogfish and sculpin is fixed at a value of about 5.7 and cannot be changed by the administration of bicarbonate or alkaline phosphate, the latter at pH 7.4 to 7.7. She suggested that this fixation at an acid reaction might be related to the fact that, in the marine fishes, the urine contains large quantities of magnesium which precipitates as  $Mg(OH)_2$ ,  $Mg(NH_4)PO_4$ , or, as Pitts<sup>2</sup> had previously shown, as  $MgHPO_4$ .  $3H_2O$ , if the urine is alkalinized beyond pH 6. She concluded that urine is acidified by the exchange of H<sup>+</sup> ions for B<sup>+</sup>, as had first been inferred for mammals<sup>3</sup>. This exchange mechanism has subsequently received wide support in the mammalian studies reported by Pitts and Alexander<sup>4</sup>, Pitts and Lotspeich<sup>5</sup> and Berliner, Kennedy and Orloff<sup>6</sup>.

It was demonstrated by the investigators cited above that the acidification of urine in the mammal can be partially blocked by carbonic anhydrase inhibitors, the most powerful of which is the sulphanilamide 6063, recently studied by Ber-

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