

The American Midland Naturalist

Published Bi-Monthly by The University of Notre Dame, Notre Dame, Indiana

VOL. 18

MARCH, 1937

No. 2

Ecological Studies on Selected Marine Intertidal Communities of Monterey Bay, California*

Willis G. Hewatt

CONTENTS

Introduction	161
I. Location of Investigated Area.....	164
II. General Environmental Conditions.....	166
1. Geological Features	166
2. Temperature of the Water.....	167
3. Salinity	168
4. Phosphate and Silicate.....	168
5. Air Temperature and Rainfall.....	168
6. Aeration	170
7. Light Conditions	170
8. Tides	170
III. Apparatus and Methods.....	172
IV. Some Questions Concerning the Terminology of the Biotic Distribution and Zonation	174
V. Animal Distribution and Zonation.....	177
1. Supralittoral	183
2. Littoral	183
3. Seasonal Migrations	189
VI. Food Relationships	192
VII. Systematic List of Species.....	199
Summary	201
References	202

Introduction

Marine sociological investigations have been carried out by various workers in several widely separated intertidal regions. Most of these studies are in the form of descriptive surveys, such as Verrill ('73), in the Vineyard Sound region; Sumner, *et. al.* ('11) and Allee ('23), in the Woods Hole vicinity; Hedley ('15) and Johnston ('17), on the Australian beaches; Shelford and Towler ('25), in the Puget Sound area of the Pacific coast; and Gislen ('31), in the Misaki district of Japan. Quantitative investigations in this field have been made on the Scottish coast, by Stephens ('28); in the Gullmar Fjord,

* This paper describes the results of part of the investigations carried out and submitted to the faculty of Stanford University as partial fulfillment of the requirement for the degree of Doctor of Philosophy.