

The Natural History of Enewetak Atoll

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Introduction

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The organization and coordination of the taxonomic collection of this volume was initiated by Dr. Dennis M. Devaney of the Bernice P. Bishop Museum and was completed by Beatrice L. Burch after Dr. Devaney died in a tragic scuba-diving accident on August 13, 1983, as he was investigating shrimp offshore from the Big Island of Hawaii. His great interest in all invertebrates in the tropics was increased when the opportunity arose for him to work at the Mid-Pacific Research Laboratory at Enewetak Atoll.

Devaney made his first collecting trip to the atoll in the early 1960s while he was still in graduate school. As the collection grew and taxonomy of the organisms became better known, it was soon apparent that the reference collection at Enewetak was becoming increasingly valuable. Devaney was pleased to participate in the Coral Reef Workshop held at the atoll in 1976, because he believed that the scleractinian coral collection was the key for the study of other organisms. The workshop brought together international coral specialists to establish species limits on this important and variable group. After the workshop was over, reference material from Enewetak was deposited in European and American museums for ready reference by a wider audience of scientists. Each year after the Coral Reef Workshop, Devaney went to Enewetak to curate the reference collection and to conduct his own research on echinoderms. At the same time, he encouraged the work of specialists to compile taxonomic and other research from Enewetak for this publication.

The diversity of the organisms at Enewetak made it difficult to find specialists to study all groups, so Devaney prepared several chapters himself. Unfortunately, most groups were collected in the course of other work such as physiology, toxicity, etc., and were not extensively collected by specialists for a particular taxonomic group.

The number of families, genera, and species reported in this volume either from the literature or from new records determined by the authors of this volume are presented in Table 1.

References in this volume show that some or much work was done on a particular taxon. Many groups remain

TABLE 1
Taxonomic Groups at Enewetak Atoll

Taxon	No. of species	No. of genera	No. of families
Algae	238	106	40
Fungi	112	58	18
Vascular plants	123	97	48
Forams and nonplanktonic protozoa	279	144	58
Porifera	40	33	26
Actinaria	27	21	14
Octocorallia	31	17	12
Scleractinia	169	53	12
Brachiopoda	4	4	4
Bryozoa	84	61	39
Sipuncula	11	77	3
Echiura	2	2	2
Platyhelminthes	31	11	10
Nemertea	1	1	1
Nematoda	1	1	1
Polychaeta	132	110	34
Mollusca (fossil, recent)	1240	453	151
Insects and related arthropods	190	157	93
Pycnogonida	5	4	4
Stomatopoda	12	4	4
Cirripedia	10	7	6
Lagoon plankton	285	177	52
Ostracoda	10	10	5
Natantia	145	56	14
Reptantia	4	3	3
Anomura	76	29	10
Brachyura	293	114	16
Holothuroidea	20	11	5
Echinodermata other than Holothuroidea	97	65	32
Fishes of the Marshall Islands	815	338	92
Reptilia	9	9	5
Aves	41	27	12
Mammalia	9	7	6
Miscellaneous	124	87	40
Totals	4671	2284	902

to be worked on more thoroughly by specialists in particular fields, such as Porifera or Tunicata, which, at the present time, seem to be represented so lightly at Enewetak Atoll. By having a named reference collection, the researchers there were able to identify organisms used in their studies on biochemistry, ecology, productivity, animal or plant associations, physiology, immunology, radiobiology, growth rates, and reproduction. They were also able to make broad interpretations of reef chronology,

geochemistry, stratigraphy, and biogeographic distribution.

The checklist contains, in each chapter, a coded entry symbol placed before the generic designation to indicate (1) if the organism represents a newly recorded species for Enewetak or for the Marshall Islands, (2) if it is a fossil record, or (3) if it has some other reason to be so marked. The explanations for these codes follow each species checklist.