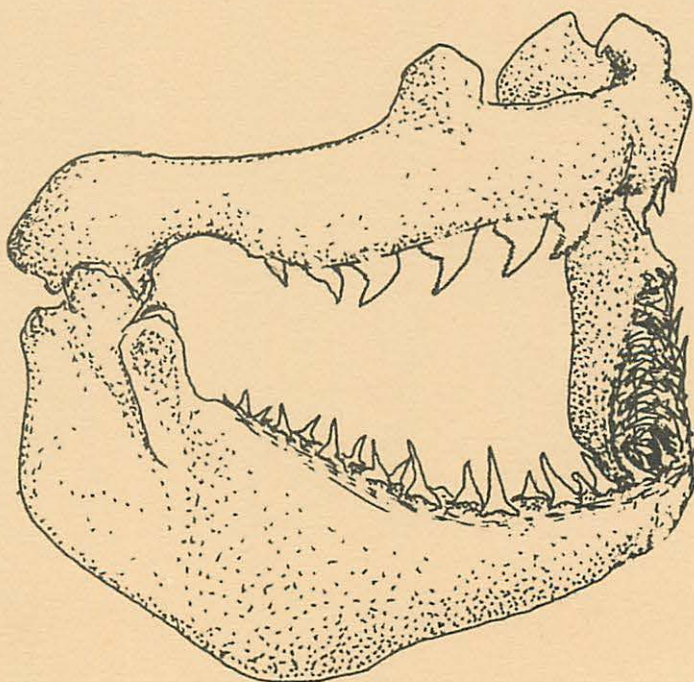


Curatorial Report Number 12

Nova Scotia Museum
1747 Summer Street
Halifax Nova Scotia Canada

Collections
made in
association
with
C.S.S. Dawson
Cruise
72-004

By Paul S. Doleman
September 1973

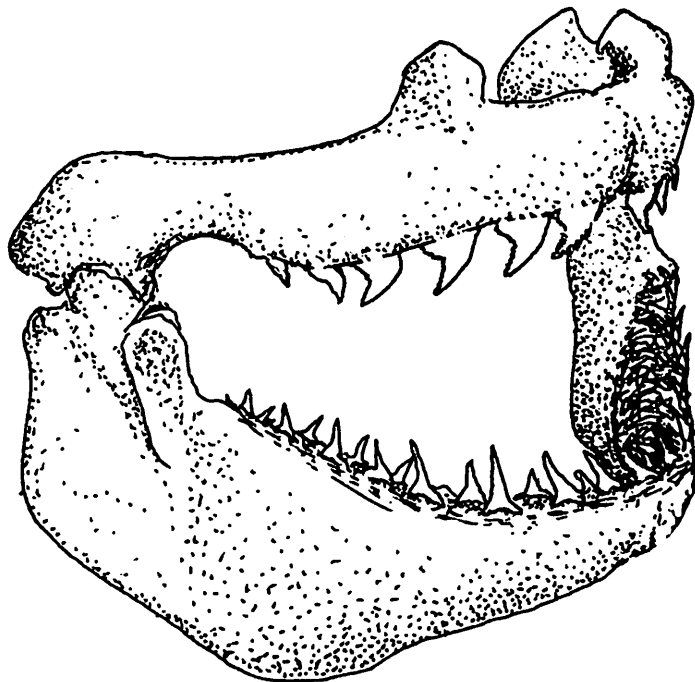


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NOVA SCOTIA MUSEUM

Curatorial Reports

The *Curatorial Reports* of the Nova Scotia Museum contain information on the collections and the preliminary results of research projects carried out under the program of the museum. The reports may be cited in publications but their manuscript status should be clearly indicated.

INTRODUCTION

Although the Nova Scotia Museum deals mainly with native species, exotic specimens are also useful. They can serve as reference material for the identification of accidental specimens as well as for the determination of collections brought back by tourists. Because Nova Scotia's fauna is limited, exotic material is required for special exhibits and talks in order to better demonstrate biological principles.

The Fisheries Research Board invited the Nova Scotia Museum to participate in a research cruise on board the C. S. S. Dawson, affording the opportunity to collect foreign species. The cruise began February 21, 1972 and ended March 25, 1972. The ship travelled into the Caribbean and then to Bermuda (see map #1) where the cruise ended. During the trip three days were spent in Curacao and after the trip five days were spent in Bermuda.

The periods spent on land provided excellent opportunities for gathering exotic fauna and most of the time was spent doing so by searching. Collections were made at only one locality in Curacao but in Bermuda four main localities were sampled. Intertidal mollusca were primarily collected, however, land mollusca, arthropoda as well as other animals were also taken. While at sea, sampling was done by Neuston nets which were towed along the surface of the water and by Bongo and Isaacs Kidd nets which were towed beneath the surface of the water. Longlining was also carried out. Of all the specimens which were captured at sea, most are fish and they were taken by longline. The localities where specimens were collected are marked on the three maps which appear near the end of the report.

The list of specimens collected at sea is smaller than the other lists because no museum participation was written into the ship's program, which limited opportunities for obtaining specimens.

GENERAL COMMENTS

With almost every addition to the museum's collections there are new species added. The same is true of this collection. Some of the more interesting new species in this collection include, for example the Caecidae, a family of molluscs previously not in the collection which have very minute shells (between 2 and 7 millimeters). Another family new to the collections is the Pomatiasidae, a group of operculate land snails which form an evolutionary link between the operculate marine and nonoperculate land mollusca. Also of special interest is *Siphonaria alternata* Say, an air breathing marine limpet more closely related to the land snails than to the gill breathing keyhole limpets (Fissurellidae) and true limpets (Acmaeidae). There are various other species new to the collection as well as better specimens of species already represented in the collection.

A total of one hundred and fifty-five lots of invertebrates have been added to the collection. One hundred and twenty-seven of the lots are molluscs which have been arranged according to the classification of Thiele (1931, 1935). Most of the other books listed in the references were used for identification.

Twelve lots of fishes were also added to the collection. Of special interest is an entire dusky-sickle shark (*Carcharhinus* sp.) which is approximately forty inches long. Embryonic white-tip (*Carcharhinus longimanus* Poey) and hammerhead sharks (*Sphyrna* sp.) have also been added to the collection. Among the recently added shark jaws are those of the white-tip shark (*Carcharhinus longimanus* Poey) and scalloped hammerhead shark (*Sphyrna lewini* Griffith and Smith) which have not been in the collection before. Also included in the new additions are the skull bones of a male and female dolphin (*Coryphaena hippurus* Linné) and two Atlantic flyingfish (*Cypselurus heterurus* Rafinesque). The specimens collected at sea are particularly valuable because of the difficulty in obtaining them.

Many of the specimens collected on this trip, such as *Lithophaga bisulcata* Orbigny, which was collected in Bermuda, invite comparisons with our native fauna. This pelecypod is a rock borer as is *Zirphaea crispata* Linné, a native rock-boring species. Tropical examples of families also found in Nova Scotia have been added to the collection. *Littorina angulifera* Lamarck, for example, is related to our own *Littorina* species and its addition to the collection better illustrates the range in form in this genus.

The addition of these specimens to the museum resources has increased the research and interpretive value of the collections.

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ACKNOWLEDGEMENTS

I would like to thank J. S. Beckett of the Fisheries Research Board of Canada for inviting the Nova Scotia Museum to participate in the C. S. S. Dawson cruise 72-004 and the science staff of the Nova Scotia Museum for asking me to represent them on the cruise.

SYSTEMATIC LIST OF SPECIMENS COLLECTED AT SEA

MOLLUSCA

GASTROPODA

Pelagic gastropod 1972-Z-251.1

ARTHROPODA

CRUSTACEA

Branchiura 1972-Z-252.1
Branchiura 1972-Z-253.1

CHORDATA

CHONDRICHTHYES

Carcharhinus longimanus Poey 1972-Z-209.1
Carcharhinus sp. 1972-Z-210.1
Carcharhinus sp. 1972-Z-211.1
Prionace glauca Linné 1972-Z-202.1
Sphyrna lewini Griffith and Smith 1972-Z-212.1
Carcharhinus longimanus Poey 1972-Z-255.1
Sphyrna sp. 1972-Z-256.1

OSTEICHTHYES

Cypselurus heterurus Rafinesque 1972-Z-214.1
Coryphaena hippurus Linné 1972-Z-213.1
Coryphaena hippurus Linné 1972-Z-202.2
Coryphaena hippurus Linné 1972-Z-208.1
Unidentified Osteichthys 1972-Z-203.1

Table 1. Specimens taken at sea (see map 1)

NSM Accession Numbers	Date	Depth Meters	Surface Temperature ° C	Latitude	Longitude	Locality Number
1972-Z-202	5 Mar.	1600	26.0	11°46'N	60°27'W	1
1972-Z-203	7 Mar.		26.4	12°24'N	61°51'W	2
1972-Z-208	13 Mar.	2700	25.9-25.5	17°29'N	74°25'W	3
1972-Z-209	13 Mar.	2700	25.9-26.5	17°29'N	74°25'W	3
1972-Z-210	19 Mar.	500	25.0-25.4	26°19'N	79°03'W	4
1972-Z-211	19 Mar.	500	25.0-25.4	26°19'N	79°03'W	4
1972-Z-212	19 Mar.	500	25.0-25.4	26°19'N	79°03'W	4
1972-Z-213	20 Mar.			28°32'N	79°24'W	6
1972-Z-214	20 Mar.			29°00'N	80°09'W	7
1972-Z-251	19 Mar.			27°42'N	79°49'W	5
1972-Z-252	18 Mar.			26°19'N	79°03'W	4
1972-Z-253	5 Mar.			11°46'N	60°27'W	1
1972-Z-255	14 Mar.	896		18°18'N	75°18'W	8
1972-Z-256	14 Mar.	896		18°18'N	75°18'W	8

SYSTEMATIC LIST OF SPECIMENS COLLECTED IN CURACAO

COELENTERATA

ANTHOZOA

Scleractinia coral 1972-Z-205.26

MOLLUSCA

GASTROPODA

Diodora cayenensis Lamarck 1972-Z-205.6
Caecum nebulosum Rehder 1972-Z-205.14
Caecum imbricatum Carpenter 1972-Z-205.15
Caecum pulchellum Stimpson 1972-z-205.22
 Caecidae possibly *Parastrophia* sp. 1972-Z-205.23
 Unidentified Caecidae 1972-Z-205.24
Modulus modulus Linné 1972-Z-205.18
Cerithium litteratum Eorn 1972-Z-205.28
Natica canrena Linné 1972-Z-205.20
Polinices hepaticus Röding? 1972-Z-205.21
Cymatium sp. 1972-Z-205.3
Cymatium pileare Linné 1972-Z-205.27
Bulla striata Bruguière 1972-Z-205.29
Cerion uva Linné 1972-Z-204.1
 Unidentified Pomatiasidae 1972-Z-205.19
 Unidentified Pomatiasidae 1972-Z-204.2
Cadulus quadridentatus Dall 1972-Z-205.30
Cadulus acus Dall 1972-Z-205.33
Dentalium texasianum Philippi 1972-Z-205.25

PELECYPODA

Unidentified Pelecypoda 1972-Z-205.17
Arca imbricata Bruguière 1972-Z-205.7
Anadara notabilis Röding 1972-Z-205.8
Aequipecten gibbus Linné 1972-Z-205.5
Diplodonta punctata Say 1972-Z-205.10
Chama sp. 1972-Z-205.31
Chama macerophylla Gmelin 1972-Z-205.32
Chama macerophylla Gmelin 1972-Z-205.2
Americardia media Linné 1972-Z-205.1
Americardia media Linné 1972-Z-205.12

PELECYPODA

<i>Laevicardium laevigatum</i> Linné	1972-Z-205.4
<i>Chione paphia</i> Linné	1972-Z-205.9
<i>Chione granulata</i> Gmelin	1972-Z-205.11
<i>Chione cancellata</i> Linné	1972-Z-205.13
<i>Solecurtus cumingianus</i> Dunker	1972-Z-205.16

SEDIMENT SAMPLE

Unsorted sediment sample with small shells	1972-Z-205.34
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ARTHROPODA

INSECTA

Unidentified Gryllidae	1972-Z-206.1
<i>Everes comyntas</i> Godart	1972-Z-207.1

Table 2.

Specimens collected in Curacao (see map 2)

NSM Accession Numbers	Date	Place
1972-Z-204	10 Mar.	Willemstad
1972-Z-205	10 Mar.	Willemstad
1972-Z-206	10 Mar.	Willemstad
1972-Z-207	11 Mar.	Willemstad

SYSTEMATIC LIST OF SPECIMENS COLLECTED IN BERMUDA

MOLLUSCA

AMPHINEURA

<i>Chiton</i> sp.	1972-Z-254.1
<i>Chiton</i> sp.	1972-Z-237.1

GASTROPODA

Unidentified Gastropod eggs	1972-Z-248.4
<i>Diodora cayenensis</i> Lamarck	1972-Z-243.5
Unidentified Fissurellidae	1972-Z-244.1
Unidentified Fissurellidae	1972-Z-248.6
<i>Nerita tessellata</i> Gmelin	1972-Z-244.23
<i>Helicina clappi</i> Pilsbry	1972-Z-231.1
<i>Helicina clappi</i> Pilsbry	1972-Z-216.9
<i>Littorina angulifera</i> Lamarck	1972-Z-244.25
<i>Petalococonchus irregularis</i> Orbigny?	1972-Z-243.11
<i>Vermicularia spirata</i> Philippi	1972-Z-243.10
<i>Modulus modulus</i> Linné	1972-Z-243.2
<i>Batillaria minima</i> Gmelin	1972-Z-244.4
<i>Cerithium litteratum</i> Born	1972-Z-243.9
<i>Cerithium variable</i> C. B. Adams	1972-Z-244.21
<i>Cerithium variable</i> C. B. Adams	1972-Z-243.6
<i>Cerithium variable</i> C. B. Adams	1972-Z-216.15
<i>Cerithium variable</i> C. B. Adams	1972-Z-248.5
<i>Cerithium variable</i> C. B. Adams	1972-Z-215.2
<i>Ocenebra intermedia</i> C. B. Adams	1972-Z-244.6
<i>Columbella mercatoria</i> Linné	1972-Z-243.13
<i>Columbella mercatoria</i> Linné	1972-Z-216.16
<i>Anachis avara</i> Say	1972-Z-243.19
<i>Nitidella ocellata</i> Gmelin	1972-Z-244.2
<i>Nassarius albus</i> Say	1972-Z-243.7
<i>Olivella nivea</i> Gmelin?	1972-Z-243.21
<i>Bulla striata</i> Bruguière	1972-Z-243.4
Unidentified Pulmonata	1972-Z-227.4
<i>Ovatella (Phytia) myosatis</i>	1972-Z-244.29
<i>Siphonaria alternata</i> Say?	1972-Z-244.5
<i>Siphonaria alternata</i> Say	1972-Z-216.11
<i>Siphonaria alternata</i> Say	1972-Z-248.2
<i>Siphonaria</i> sp.	1972-Z-248.7

GASTROPODA

<i>Siphonaria</i> sp.	1972-Z-248.7
<i>Lamellaxis</i> sp.?	1972-Z-227.5
<i>Lamellaxis</i> sp.	1972-Z-231.3
<i>Lamellaxis</i> sp.	1972-Z-216.8
<i>Rumina decollata</i> Linné	1972-Z-226.1
<i>Rumina decollata</i> Linné	1972-Z-242.2
<i>Rumina decollata</i> Linné	1972-Z-228.4
<i>Euglandina rosea</i> Férussac	1972-Z-227.1
<i>Euglandina rosea</i> Férussac	1972-Z-221.1
<i>Euglandina rosea</i> Férussac	1972-Z-216.1
<i>Anguispira alternata</i> Say?	1972-Z-228.1
<i>Anguispira alternata</i> Say?	1972-Z-216.7
<i>Anguispira</i> sp. ?	1972-Z-216.18
Unidentified Polygyrinidae	1972-Z-227.3
<i>Polygyra cereolus</i> Nuhlfeld?	1972-Z-243.3
<i>Polygyra plana</i> Dkr.?	1972-Z-231.2
<i>Mesodon</i> sp.?	1972-Z-216.5
<i>Oxychellus</i> sp.	1972-Z-216.19
<i>Philomyicus</i> sp.	1972-Z-218.1
<i>Deroceras</i> sp.	1972-Z-219.1
Unidentified Pleurodontites	1972-Z-228.2
Unidentified Pleurodontites	1972-Z-216.3
<i>Helicina clappi</i> Pilsbry	1972-Z-243.17
<i>Helicella</i> sp.?	1972-Z-216.4
<i>Cochlicella ventrosa</i> Férussac	1972-Z-227.2
<i>Otala lactea</i> Müller	1972-Z-223.1
<i>Otala lactea</i> Müller	1972-Z-216.6
<i>Otala lactea</i> Müller	1972-Z-242.1
<i>Otala lactea</i> Müller	1972-Z-228.3
<i>Otala lactea</i> Müller	1972-Z-216.2
<i>Otala lactea</i> Müller	1972-Z-223.1

PELECYPODA

<i>Arca zebra</i> Swainson	1972-Z-243.1
<i>Barbatia domingensis</i> Lamarck	1972-Z-216.12
<i>Arca imbricata</i> Bruguière	1972-Z-243.24
<i>Brachidontes exustus</i> Linné	1972-Z-244.12
<i>Brachidontes exustus</i> Linné	1972-Z-243.18
<i>Lithophaga bisulcata</i> Orbigny	1972-Z-216.17
<i>Isognomon</i> sp.	1972-Z-243.20
<i>Pteria colymbus</i> Röding	1972-Z-243.20
Unidentified Ostreidae	1972-Z-216.13
<i>Diplodonta</i> sp.	1972-Z-216.21

PELECYPODA

<i>Codakia orbicularis</i> Linné	1972-Z-244.18
<i>Codakia orbicularis</i> Linné	1972-Z-243.16
<i>Chama</i> sp.	1972-Z-244.19
<i>Chama</i> sp.	1972-Z-244.27
<i>Chama</i> sp.	1972-Z-243.25
<i>Chama</i> sp.	1972-Z-216.14
<i>Laevicardium laevigatum</i> Linné	1972-Z-244.26
Unidentified Veneracea	1972-Z-244.10
<i>Gouldia cerina</i> C. B. Adams	1972-Z-243.15
<i>Macrocallista maculosa</i> Linné	1972-Z-216.10
<i>Macrocallista maculata</i> Linné	1972-Z-243.23
<i>Macrocallista maculata</i> Linné	1972-Z-244.28
<i>Transennella canradina</i> Dall	1972-Z-243.14
<i>Chicne cancellata</i> Linné	1972-Z-244.14
<i>Chione cancellata</i> Linné	1972-Z-243.7
<i>Semele proficua</i> Pulteney	1972-Z-244.20
Unidentified Tellinidae	1972-Z-244.13

ANNELIDA

POLYCHAETA

Polychaeta	1972-Z-244.22
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ARTHROPODA

ARACHNIDA

Arachnida	1972-Z-227.6
Arachnida	1972-Z-250.1

CRUSTACEA

<i>Balanus amphitrite</i>	1972-Z-244.11
Unidentified Paguridae?	1972-Z-248.3
Unidentified Paguridae?	1972-Z-248.1
Unidentified Paguridae?	1972-Z-244.3
Unidentified Isopoda	1972-Z-216.20
Unidentified Isopoda	1972-Z-242.3

INSECTA

Unidentified Dermaptera	1972-Z-245.2
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<i>Periplaneta americana</i> Linné	1972-Z-245.1
<i>Periplaneta americana</i> Linné	1972-Z-240.1
Unidentified Coccoidea	1972-Z-222.1
Unidentified Lepidoptera	1972-Z-236.1
Unidentified Lepidoptera	1972-Z-239.1
Unidentified Lepidoptera	1972-Z-241.1
Unidentified Lepidoptera	1972-Z-246.1
<i>Synedoida</i> sp.	1972-Z-240.2
Unidentified Noctuidae Catocalinae	1972-Z-229.1
<i>Anicla infecta</i> Ochs.	1972-Z-224.1
Unidentified Tipuloidea	1972-Z-235.1
Unidentified Noctuidae Agrotinae	1972-Z-229.2

CHORDATA

AMPHIBIA

Hylidae	1972-Z-234.1
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Table 3. Specimens collected in Bermuda (see map 3), March 25 to March 29, 1972.

NSM Accession Numbers	Date	Place
1972-Z-215	26 Mar.	Opposite Whalebone Bay
1972-Z-216	26 Mar.	Biological Station
1972-Z-218	26 Mar.	Biological Station
1972-Z-219	26 Mar.	Biological Station
1972-Z-221	26 Mar.	Biological Station
1972-Z-222	26 Mar.	Biological Station
1972-Z-223	26 Mar.	Biological Station
1972-Z-224	26 Mar.	Biological Station
1972-Z-226	26 Mar.	Near Biological Station
1972-Z-227	26 Mar.	Biological Station
1972-Z-228	26 Mar.	Near Biological Station
1972-Z-229	26 Mar.	Biological Station
1972-Z-231	26 Mar.	Biological Station
1972-Z-234	27 Mar.	Biological Station
1972-Z-235	27 Mar.	Biological Station
1972-Z-236	27 Mar.	Biological Station
1972-Z-237	27 Mar.	Warwick Long Bay
1972-Z-239	28 Mar.	Biological Station
1972-Z-240	28 Mar.	Biological Station
1972-Z-241	27 Mar.	Biological Station
1972-Z-242	28 Mar.	Roadside
1972-Z-243	28 Mar.	Shelly Bay Beach
1972-Z-244	28 Mar.	Biological Station
1972-Z-245	28 Mar.	Biological Station
1972-Z-246	28 Mar.	Biological Station
1972-Z-248	27 Mar.	Warwick Long Bay
1972-Z-250	29 Mar.	Biological Station
1972-Z-254	Mar.	



Figs. 1 and 2.

Throughout the trip sharks were taken on the longline, measured, their jaws removed and stomach contents examined. Occasionally embryos were found.

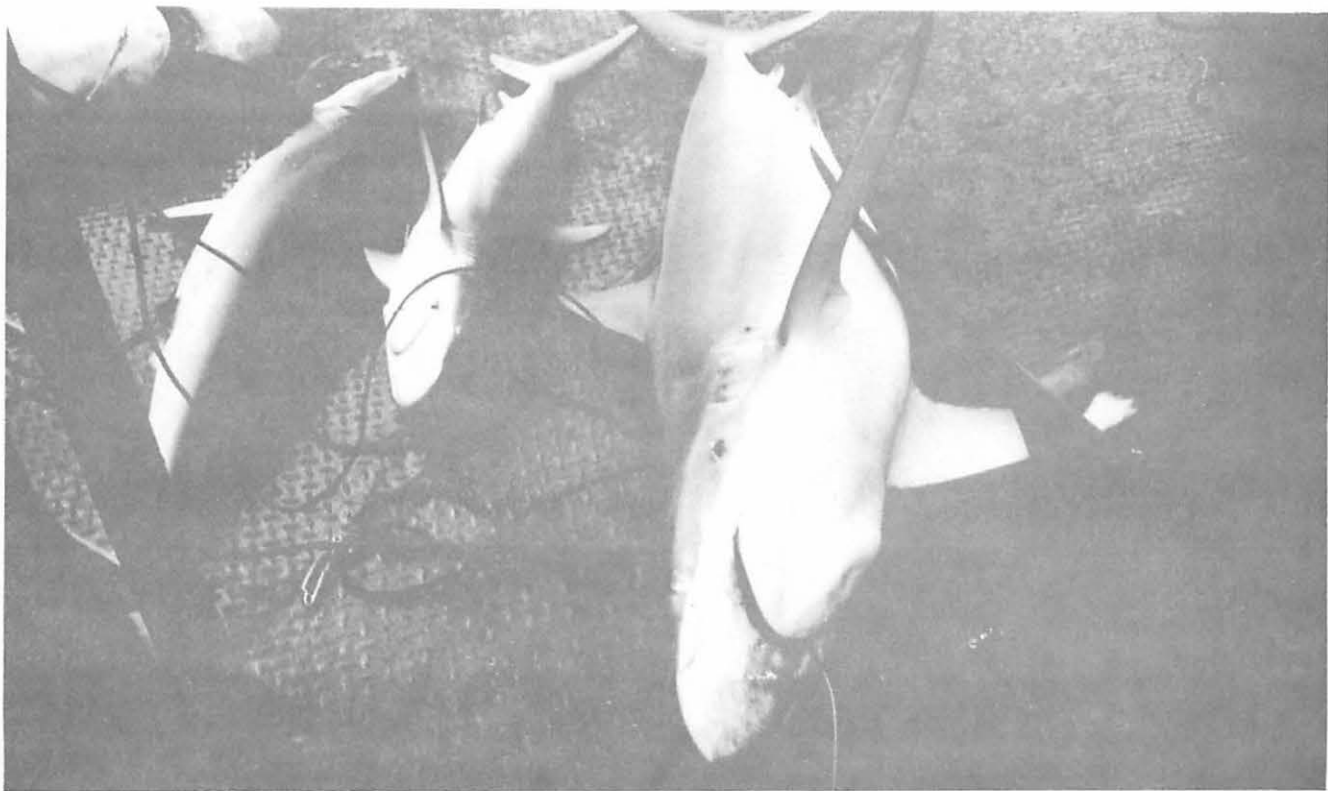


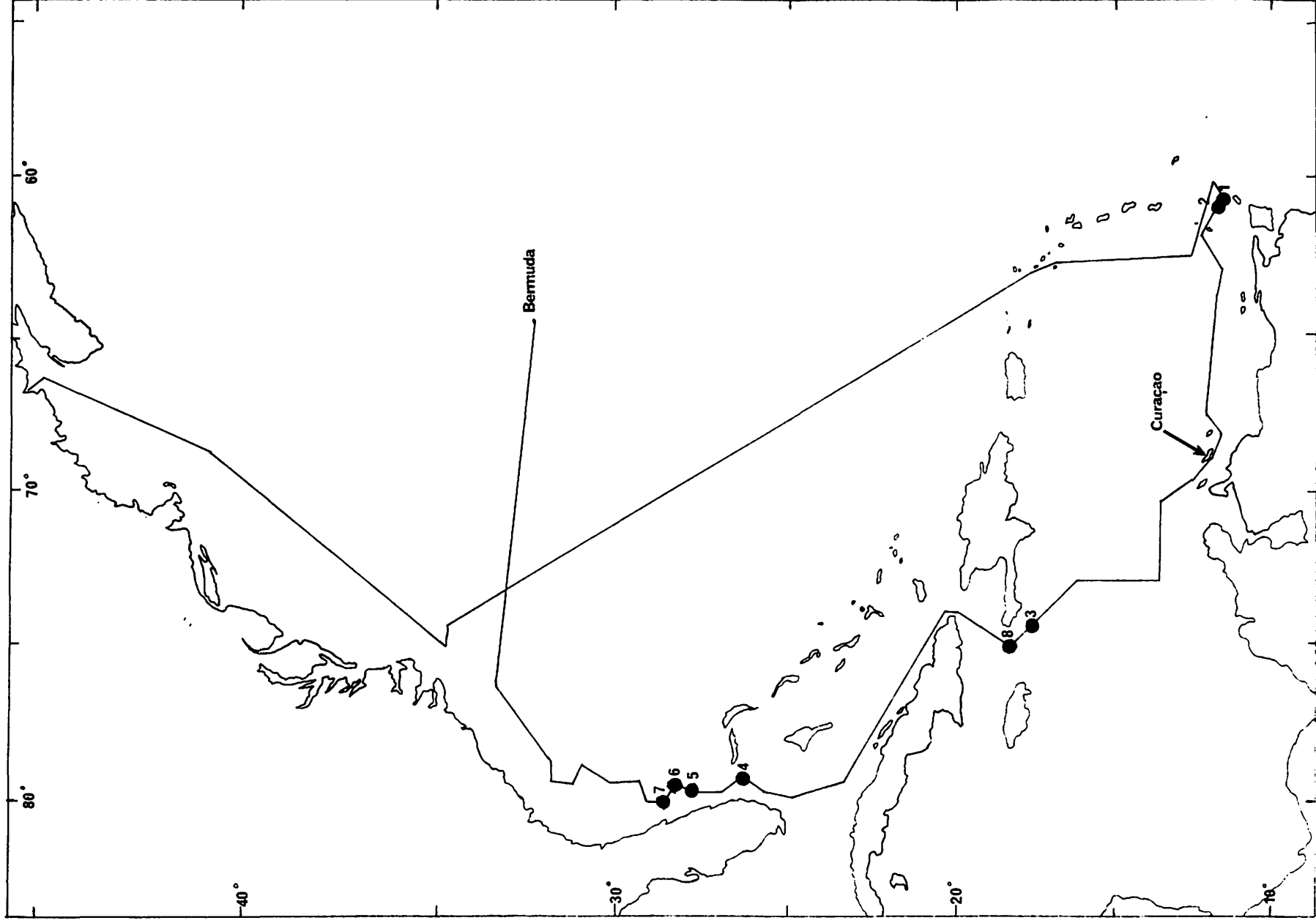


Fig. 3. In Curacao the land snail *Cerion uva* Linné was found on bushes and limestone.

Fig. 4. Warwick Long Bay, Bermuda, where specimens were collected from the tidepools.

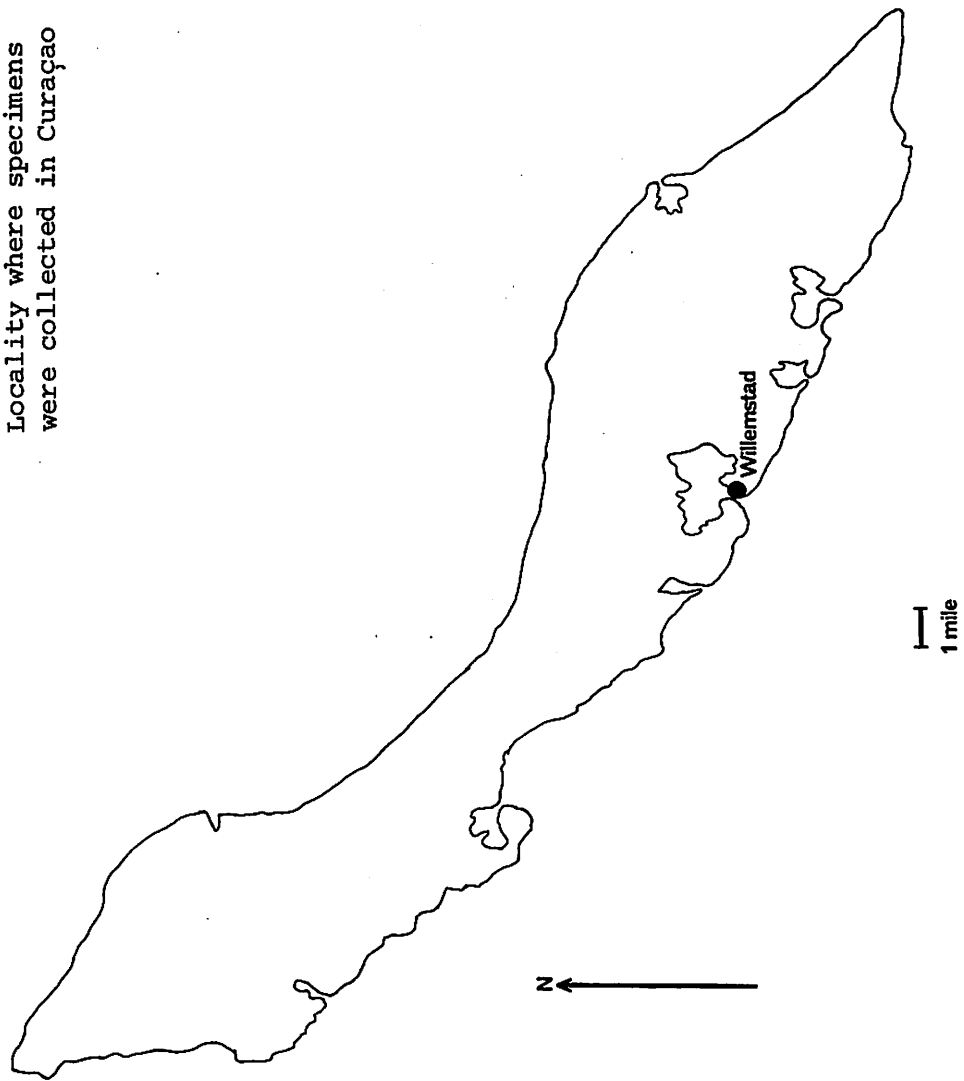


Map 1



Map 2

Locality where specimens
were collected in Curaçao



Map 3

Localities where
specimens were collected
in Bermuda

