

STUDIES ON THE ECOLOGY AND DISTRIBUTION
OF THE MARINE SHELLED MOLLUSCA OF BARBADOS

by

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FOREWORD

Barbados occupies a very important zoogeographic position in the Caribbean Province and as such some authors have considered it as a focal point for molluscan migration and distribution in the Lesser Antilles and part of the rest of the West Indies. It lies in the path of two major oceanic currents and although it has long occupied a prominent position among the British possessions in the western hemisphere, and is heavily populated, its marine fauna is not well understood.

During February and March 1961, the writer was privileged to conduct scientific investigations at the Bellairs Research Institute of McGill University at St. James, on the west coast of this island as a part of the field work programme of the Redpath Museum. Substantial collections of molluscs and detailed ecological observations were made and incorporated into this account which attempts the following: -

1. To determine the species composition and the molluscan fauna of Barbados;
2. To collect and evaluate the obscure and scattered malacological literature pertaining to the region;
3. To consider the effect of climate, physiography, hydrography and geological history on the faunal composition of the island; and,
4. To discuss the ecology and zoogeographical relationships of the shelled marine molluscs of the region.

A C K N O W L E D G E M E N T S

I am indebted to several colleagues and friends for their kind cooperation. Dr. Harald A. Rehder and Dr. Joseph P. Morrison of the U. S. National Museum provided many facilities and equipment, and gave me permission, during a short visit to their institution, to examine part of the material dredged by the "Blake" and the "Hassler" in their collections. Dr. William J. Clench and Dr. Ruth D. Turner of the Museum of Comparative Zoology at Harvard University made possible a survey of their entire collections for records from Barbados and Dr. Turner read part of the manuscript giving constructive advice. Their interest in my work was most encouraging. I am grateful to Mr. Dan Steger, of Tampa, Florida, for his help in comparing material with that in his collection from the Gulf of Mexico, and determining the generic position of some of the members in the family Turridae, a group which he has studied for several years. Dr. Arthur H. Clarke, Jr., and Dr. Edward Bousfield, of the National Museum of Canada, loaned their collection from Barbados as well as several important books. Dr. John B. Lewis, of the Bellairs Research Institute of McGill University read part of the first descriptive draft, making valuable comments. He also gave verbal permission to use his diagrams and maps. I wish to thank Mr. Allan Emery for the loan of his molluscan collection from Barbados for identification, as well as the valuable verbal information on the current patterns in the Barbados area. I had the pleasure to read his thesis recently. My thanks are also extended to Col. C. Voelker for

showing me his collection of shells from Barbados, and permitting me to take notes of the species represented in it. I wish to express my appreciation to those in charge of the Blacker Library, at McGill University, and the Library of the National Museum of Canada, for their help in locating many of the books and publications needed in this work. To Eng. Manuel Delgado I am grateful for re-drawing the maps and diagrams and Miss Dorothy Pocock for providing some photographs. Finally, I wish to extend my gratitude to Dr. Joan Marsden, of the Zoology Department at McGill University, under whose supervision this thesis has been written. The advice and encouragement given by her are deeply appreciated. To my wife Trudy, I am very grateful for typing this thesis.

The writer assumes full responsibility for errors and wrong statements made in this work.

HISTORICAL RESUME

A considerable number of littoral and shallow water marine molluscs from the West Indian region and other areas reached Europe during the second half of the eighteenth and first half of the nineteenth century. These were, in many cases, brought by travelers and navigators and later described by European naturalists. Outstanding among these were Jean B. Lamarck, Carl von Linnaeus, J. F. Gmelin and Alcide d'Orbigny. Although they reported many species from the Lesser Antilles, very few are recorded from Barbados.

In the meantime, active collecting in the same area by western investigators, including some Europeans, began close to the middle and continued through the second half of the nineteenth century. Well known collectors and specialists of this period are Prof. Charles B. Adams, A. H. Risse, Henry Krebs, Don Ramon de la Sagra, Commander M. Beau, Francisco de Arango y Molina and others. It appears, however, that Barbados, probably because of its geographic location, was seldom visited by these early investigators. Much, however, is owed to them and their European colleagues for our present knowledge of the molluscs of the West Indies in general.

In 1864 Henry Krebs, after residing for over seventeen years on the island of St. Thomas, and having investigated the molluscan fauna for almost that length of time, published a limited number of a catalogue titled "West Indian Shells". In this publication he included not only

the results of his collecting and observations on the ecology of the species he collected on this island and elsewhere, but also recorded several species sent to him by friends and colleagues, as well as those which had already appeared in the limited publications available at that time. His records from Barbados include 36 species, 33 of which he collected. The other three are credited, - one to C. B. Adams, one to Chemnitz and Lamarck, and one to Lamarck alone. The latter refers to Crepidula fornicata which is not an inhabitant of the Caribbean region. It is possible that the species concerned was Crepidula glauca Say.

Between 1867 and 1887, several U. S. Government vessels, the U. S. Coast Steamer "Corwin" in 1867, the "Bibb" in 1868 - 9, the "Hassler" in 1871 - 2, the "Beck" in 1872, the "Blake" in 1877 - 80, and the U. S. Fish Commission Steamer "Albatross" in 1884 - 87, carried out dredging operations in the Gulf of Mexico and the Caribbean. Of these, the "Hassler" in 1871 made the first dredging stations in Barbadian waters, off Sandy Bay on the west coast, in 17 - 100 fathoms. Later, in 1879, the "Blake" in the final stage of its cruise of the Caribbean region made several hauls in 7 - 713 fathoms, also on the west coast of this island. The results of these dredgings were published in the Bulletins of the Museum of Comparative Zoology at Harvard University for 1881 - 1889. The molluscs were studied and reported upon by William H. Dall, (Bulletins 4, 6, 9, 12, 18 and several other papers, 1879 - 1902), and the material was divided between the Museum of Comparative Zoology and the U. S. National Museum (Smithsonian Institution) in Washington, D. C.

During the exploration of the "Hassler" and the "Blake" (1871 - 1879), two British vessels, the H.M.S. "Challenger" and the yacht "Argo" carried out dredging operations in the Caribbean. In 1873 the H.M.S. "Challenger" worked at Sombrero and St. Thomas islands and then proceeded northwards to Bermuda. In 1876 the "Argo" left England for a short expedition to the West Indies and the coasts of South and Central America, but it did not reach Barbadian waters.

In 1878, prior to the appearance of the results of the "Hassler" and the "Blake", Francisco de Arango y Molina published his "Contribucion a la Fauna Malacologica Cubana" in which he included all the records known at that time for Cuban species occurring in the rest of the West Indies. Among these records there are only six from Barbados; one of these is credited to Lister and the other five to Gov. Rawson, then retired ex-Governor of the Bahamas (1864 - 1869) and the Windward Islands (1869 - 1875). Apart from his diplomatic career, Sir William Rawson was a very versatile scientist and a well known pioneer conchologist in the area under his governorship. Forty three of his unpublished records are in the Carpenter Collection of the Redpath Museum, McGill University. It is surprising that Arango's work did not include more of his records.

The publication of the results of the "Hassler" and the "Blake" certainly increased the number of records and new species known to occur in Barbados, although chiefly for deep water fauna. A total of 307 species were recorded (154 gastropods, 10 scaphopods and 143 pelecypods). The representatives of the latter two groups constitute the first records for such groups for the island.

In 1895 - 96 the "Chazalie" made two exploratory trips to the Lesser Antilles and northern coast of South America. On these occasions, Barbados was also excluded from the exploratory charts.

In 1916 John Thiele reported upon the molluscs of the West Indies using the results of the expedition to that region by Prof. W. Kukenthal and Dr. R. Hartmeyer. The work carried out in Barbados by these two scientists constituted the first survey of the shallow water molluscan fauna of this island. They collected a total of 75 species divided as follows: -

Gastropoda 44, Amphineura 7, and Pelecypoda 24. Although many of the species were already reported by Krebs and Arango, there were several others that were new records; these included some gastropods and almost all the shallow water pelecypods, including two new species, Bornia undulata and Americardia guppyi.

In the latter part of 1917 and in the early part of the following year, the State University of Iowa organized an expedition to Barbados. Operations were confined to the south and west sides of the island, between Bridgetown and Holetown. Shore collecting was carried out intensively, but with little results (Henderson 1919). Part of the work in shallow water was done by hired native divers and the dredging operations were carried out by the "Eolis Junior", a 27 ft. launch, property of J. B. Henderson, chief malacologist and director of the explorations. Hauls were made at various depths from shallow water down to 150 fathoms. Interesting facts about this expedition are given in

Henderson's notes on the mollusca in "Barbados - Antigua Expedition" by C. C. Nutting (1920). The scientific results have not been published yet except for occasional reference in the records of "Johnsonia", and those reported by Henderson in his notes. The material was all sent to the Smithsonian Institution several years ago (W. C. Thietje, personal communication).

In the course of time, since the explorations of the "Eolis Junior", other expeditions have been sent to the West Indies, but Barbados has not been included in their exploratory charts. At the same time the literature on West Indian molluscs has increased and a wide geographic range is known for many forms. However, the occurrence of many of these in Barbados remains to be confirmed. Since the beginning of the publication of "Johnsonia" by Harvard University, the need to investigate the molluscan fauna of this island has become more important than ever, in order to determine the correct geographic distribution of many species pending description or revision in this important publication. The first formal steps toward the investigation of the marine fauna of Barbados followed the establishment of the Bellairs Research Institute of McGill University at St. James, Barbados in 1954. The subsequent work of Lewis (1960 a and b) on the rocky shores and coral communities of Barbados reported, among other things, 32 species of molluscs ecologically divided as follows: -

supralittoral forms 6,	sublittoral (shallow water
littoral intertidal 12,	and surf zones) 14.

Ten of these species had not previously been reported from Barbados and

Lewis' studies include valuable ecological and biological information.

During March 1960 Arthur H. Clarke Jr. and E. L. Bousfield of the National Museum of Canada, visited Barbados and explored 11 littoral and 2 dredging stations. They obtained 117 littoral species (94 gastropods and 21 pelecypods), and 14 deep-water forms (9 gastropods and 5 pelecypods), including several new records.

In 1961 the writer visited Barbados and made extensive collections and ecological observations. The stations explored were: River Bay on the north and Bathsheba on the east side, Hastings on the south and St. Lawrence, Six Men's Bay and Speighstown on the west side. They are all shown on map 1. Dredging operations were carried out as well as work on the littoral region using the "Diadema", a 30 ft. cabin cruiser belonging to the Bellairs Research Institute. A total of 15 hauls, covering 11 stations, were made in the area between Sandy Lane and north of Speighstown, off the west side of the island, in depths ranging between 70 and 131 fathoms.

The equipment used in shallow water was conventional, i.e., glass-bottom bucket, glass jars, calico bags, plastic vials, a knife and other assorted implements; a garden rake was successfully used to turn over rocks on morey-eel infested reef-flats. The dredge consisted of a rectangular iron frame forming the opening of a box shaped galvanized net, having a $3/16$ " square mesh. This was an improvised device which resulted from modifications of another dredge belonging to Bellairs Institute. It worked out very nicely.

In the 1961 study in Barbados a total of 268 species were obtained. They are divided as follows:

- Gastropoda - 107 deep water species (70 - 131 fathoms)
76 shallow water species (shallow and hearshore shelf,
0 - 15 fms.)
11 species (5 supralittoral and 6 intertidal)
- Pelecypoda - 23 deep water species (same depths as above)
20 shallow water species (same as above)
- Scaphopoda - 6 species deep water (same depths)
- Amphineura - 8 species (4 intertidal, 4 sublittoral - shallow shelf)

Subsequent explorations with the "Diadema" were carried out by Lewis in the same year. He investigated a bathymetric range between 25 and 400 meters (13.67 - 218.73 fms.) covering 70 stations in line with the Bellairs Institute at St. James. Besides dredging he obtained bottom samples with the Petersen grab apparatus, and placed fish pots at Paynes Bay in the same area. The molluscan material obtained in these studies totalled 260 species divided as follows:

Gastropoda 166	Scaphopoda 15
Pelecypoda 78	Amphineura 1

This work is now published (Lewis, 1965). Sixty six of these were already represented in the collection made earlier with this vessel. Many new records have been found during the identification of these forms, some

of these significantly extending the southern range of the species involved. They represent a valuable addition to our West Indian collection and an important contribution to the bulk of the systematic account in this work.

During May and June of the same year Geoffery Power, of the Department of Biology at the University of Waterloo, Ontario, also collected marine shells at five littoral stations in Barbados. He obtained 32 lots containing 27 species divided as follows: -

20 gastropods, 3 amphineurans and 4 pelecypods.

None of these represents new records, but two new localities were added to the previous station list.

Finally in 1963, while conducting investigations on the hydrography of the island, Allan Emery acquired a few living species while diving in shallow water and a considerable number of beach specimens. Other sources of material which the writer had the privilege to investigate were the Carpenter Collection in the Redpath Museum, McGill University; the collections of the Museum of Comparative Zoology at Harvard University; the holotype specimens in the Smithsonian Institution and Col. Edward C. Voelker's private collection. The latter is a temporary resident of Barbados.

S T A T I O N L I S T

The locality data on the labels of many marine molluscs reported from Barbados are very incomplete and cases of this sort have not been included in this list. However, in order to give credit to those who reported them, and also because in many instances they represent the only records of such species from the island, they are included (under Records) in the Systematic Account.

In order to bring some organization to the presently available information, the writer has compiled in this list all the records of biological stations known to have been explored in Barbados except those of the Eolis Junior, which are still pending publication; the ones that have been referred to in the records of "Johnsonia", and in the important work on the Scaphopoda by Henderson, as well as other publications, are excluded from this list, but appear in the systematic part of this work; their corresponding number is placed in brackets. The stations made by the Hassler are listed with a number, since this was omitted originally. However, these numbers will be seldom used in the records, because the corresponding depth range is rarely given. The stations investigated in recent times are listed with a new number, in order to keep a sequence. It will be found that in some instances the same locality has been explored by more than one individual. However, since the ecological niches may not have been the same, they are given different numbers. The stations recorded by the Blake, are kept with their original number in order to avoid confusion.

S T A T I O N L I S T

LITTORAL STATIONS

EXPLORED BY:

J. B. LEWIS - 1959 (see "The Fauna of Rocky Shores")

Station No.	Original No.	Locality	Depth	No. of Hauls	Ecological Data
1	1	River Bay			Supralittoral & inter-tidal Region, (rocky).
2	2	Bathsheba			"
3	3	Conset Bay			"
4	4	Silver Sands			"
5	5	Oistins			"
6	6	Paynes Bay			"
7	7	Six Men's Bay			"

A. H. CLARKE JR. & E. L. BOUSEFIELD - MARCH 1960

8	B-2	St. James at Bellairs Institute			Reef flat (rocks & sand).
9	B-4	Shore at Sam Lord's Castle			Sandy beach, some rocks.
10	B-9	Holetown			Pond behind beach (muddy & brackish)
11	B-12	Six Men's Bay			Rock ledges at inter-tidal zone.
12	B-13	1 mile S. of Speighstown			Reef flat (<u>Thalassia</u> on sand & coral, rock.
13	B-16	Shore betw. Bellairs Inst. & 2 miles S.			Sandy beach.
14	B-20	Speighstown			Breakwater rocks.

CONT'D - (A. H. CLARKE JR. & E. L. BOUSFIELD)

Station No.	Original No.	Locality	Depth	No. of Hauls	Ecological Data
15	B-24	Bathsheba			Supralittoral & intertidal Region (rocky)
16	B-28	Coral Beach, St. James			Sandy shore.
17	B-32	River Bay			Supralittoral to subtidal Region (rocky & sandy).

V. CONDE - FEB. & MARCH 1961

			<u>ft.</u>	
18		River Bay		Supralittoral & intertidal Region (rocky).
19		River Bay East		"
20		Bathsheba		"
21		St. Lawrence	0-1	Sandy reef flat; some rocks & <u>Thalassia</u> ; also rocky shore.
22		Speighstown	3-4	Large rocks on sandy bottom partially covered by <u>Thalassia</u> .
23		St. James at Bellairs Institute	0-5	(coral rock & Reef flat (sand)).
24		Hastings		Sandy reef flat (partly exposed) some rocks.
25		Six Men's Bay	0-1	Rocky platform (intertidal and subtidal).

G. POWER - MARCH & JUNE 1961

26		St. Lawrence		Intertidal & subtidal Region.
27		Archer Bay		Rocky reef flat (shallow water).
28		Gibbs Bay		"
29		Gibbs Beach, St. Peters		"
30		Bathsheba		Rocky platform (intertidal) some boulders.

CONT'D - LITTORAL STATIONSA. EMERY - 1963

Station No.	Original No.	Locality	Depth	No. of Hauls	Ecological Data
31		River Bay			Supralittoral & inter-tidal Region (rocky).
32		Maycox Bay			
33		South Point			Shore (sand & rocks).
34		Six Men's Bay			Sandy & rocky shore.
35		St. James			Sandy beach.
36		Lakes Beach			" "

SHALLOW WATER STATIONSEXPLORED BY:A. H. CLARKE JR. & E. L. BOUSFIELD - MARCH 1960

			ft.	
37	B-6	At Bellairs Inst.	20	Coral reef (sandy pools).
38	B-14	$\frac{1}{2}$ mile S. of Speightstown	30	Sand and rocks.
39	B-22	Off Sam Lord's Castle	30-40	Sandy bottom.
40	B-27	Off N.-end of Barbados	50	" "

A. EMERY - 1963

			ft.	
41		Carlisle Bay	40	Muddy bottom.
42		St. James	30	Rocky and sandy.
43		Six Men's Bay	5-20	Sand and rocks.
44		Oistins	15-40	Sandy bottom.
45		St. Lawrence	3-8	" "
46		Dover	15-40	" "

DREDGING STATIONS

OCCUPIED BY THE "DIADEMA"

EXPLORATIONS BY:

J. B. LEWIS, A. H. CLARKE JR. & E.L. BOUSFIELD - MARCH 1960

Station No.	Original No.	Locality	Depth fms.	No. of Hauls	Ecological Data
47	B-25	1 mile W. of Bellairs Institute	50-75	3	Coarse, sand & shell.
48	B-26	" " "	75-100	1	" " "

J. B. LEWIS & V. CONDE - FEB. & MARCH 1961

Station No.	Original No.	Locality	Depth fms.	No. of Hauls	Ecological Data
49	D-10	Off coral beach, St. James	100	2	Sand and shell.
50	D-11	Off St. James & Holetown	100	1	" " "
51	D-12	" " " "	82	2	" " " & sponge.
52	D-13	Off Sandy Lane	82	1	" " " " "
53	D-14	Off St. James & Alleyne's Bay	80	1	Sandy bottom.
54	D-15	Off Alleyne's Bay & Speightstown	100-125	1	Gravel, sand & ooze.
55	D-16	Off St. James & Speightstown	125	1	Sand bottom.
56	D-17	Off Speightstown	100	1	" "
57	D-18	Off Speightstown & N.	131	1	Coarse gravel & shell.
58	D-19	Off Coral Beach, St. James	75-100	2	" " " "
59	D-20	Off Speightstown	70-80	3	Gravel, shell & ooze.

CONT'D - DREDGING STATIONS - "DIADEMA"

J. B. LEWIS - 1961

Station No.	Original No.	Locality	Depth fms.	No. of Hauls	Ecological Data
60	16-2	Off Bellairs Inst., St. James	27	1	Sponges, coralline algae & broken shells.
61	23-1	" " "	32-43	1	Shell fragments & <u>Lithothamnion</u> .
62	3-7	" " "	43	1	Sponge & shell fragments.
63	8-2	" " "	58	1	Fine sand & broken shells.
64	2-1	" " "	67	1	Small rocks & shell fragments.
65	21-1	" " "	71	1	Sand, broken shells, coralline rocks, sponges & worm tubes.
66	4-2	" " "	83	1	Sand & broken shells.
67	9-2	" " "	97	1	Coarse brown sand (Foraminifera sand)
68	1-2	" " "	120	1	Brown sand & siliceous sponge.
69	1-3	" " "	120-138	1	Brown sand, mud & shell fragments.
70	14-2	" " "	138-150	1	Small rocks & brown sand.
71	12-4	" " "	153-164	1	Rocks & dk. brown sand with worm tubes.
72	7-1	" " "	180	1	Dk. brown sand & shell fragments.
73	18-2	" " "	198-202	1	Rock & shell fragments covered w/worm tubes.
74	13-2	" " "	213	1	" " " "

STATIONS OCCUPIED BY
THE "DIADEMA"
EXPLORATIONS WITH THE PETERSEN GRAB

BY:

J. B. LEWIS - 1961

Station No.	Original No.	Locality	Depth fms.	No. of Samples	Ecological Data
75	11-2	Off Bellairs Inst., St. James	13-27	1 ea.	Data not obtained.
76	11-3	" " "	13-27	"	" " " "
77	3-6	" " "	13-27	"	" " " "
78	10-1	" " "	13-27	"	" " " "
79	11-1	" " "	27-54	"	" " " "
80	3-5	" " "	27-54	"	" " " "
81	3-3	" " "	27-54	"	" " " "
82	3-2	" " "	27-54	"	" " " "
83	15-1	" " "	27-54	"	" " " "
84	3-4	" " "	27-54	"	" " " "
85	10-2	" " "	27-54	"	" " " "
86	3-1	" " "	27-54	"	" " " "
87	10-1	" " "	27-54	"	" " " "
88	8-1	" " "	54-82	"	" " " "
89	10-3	" " "	54-82	"	" " " "
90	10-4	" " "	54-82	"	" " " "
91	10-3	" " "	54-82	"	" " " "
92	10-5	" " "	54-82	"	" " " "
93	20-2	" " "	54-82	"	" " " "
94	10-6	" " "	54-82	"	" " " "

CONT'D - J. B. LEWIS - 1961 -(PETERSEN GRAB)

Station No.	Original No.	Locality	Depth fms.	No. of Samples	Ecological Data
95	15-4	Off Bellairs Inst., St. James	54-82	1 ea.	Data not obtained
96	15-2	" " "	54-82	"	" " "
97	4-1	" " "	82-109	"	" " "
98	20-5	" " "	82-109	"	" " "
99	15-5	" " "	82-109	"	" " "
100	15-6	" " "	82-109	"	" " "
101	19-1	" " "	82-109	"	" " "
102	19-2	" " "	82-109	"	" " "
103	9-1	" " "	82-109	"	" " "
104	19-3	" " "	82-109	"	" " "
105	19-4	" " "	82-109	"	" " "
106	1-1	" " "	109-138	"	" " "
107	5-1	" " "	109-138	"	" " "
108	22-1	" " "	109-138	"	" " "
109	19-5	" " "	109-138	"	" " "
110	12-1	" " "	109-138	"	" " "
111	10-7	" " "	109-138	"	" " "
112	14-1	" " "	109-138	"	" " "
113	17-1	" " "	138-164	"	" " "
114	22-2	" " "	138-164	"	" " "
115	12-2	" " "	138-164	"	" " "
116	6-1	" " "	138-164	"	" " "
117	12-3	" " "	138-164	"	" " "

CONT'D - J. B. LEWIS - 1961 - (PETERSEN GRAB)

Station No.	Original No.	Locality	Depth fms.	No. of Samples	Ecological Data
118	17-2	Off Bellairs Inst., St. James	138-164	1 ea.	Data not obtained
119	22-3	" " "	164-191	"	" " "
120	17-3	" " "	164-191	"	" " "
121	24-1	" " "	164-191	"	" " "
122	17-4	" " "	164-191	"	" " "
123	17-5	" " "	191-218	"	" " "
124	17-6	" " "	191-218	"	" " "
125	17-7	" " "	191-218	"	" " "
126	17-8	" " "	191-218	"	" " "
127	17-9	" " "	191-218	"	" " "
128	17-10	" " "	191-218	"	" " "
129	13-1	" " "	191-218	"	" " "

EXPLORATIONS WITH "FISH POTS"

BY:

J. B. LEWIS - 1961

130	Off Paynes Bay, St. James	100	Sand & broken shell.

DREDGING STATIONS OCCUPIED BY

THE U. S. COAST SURVEY STEAMER

"HASSLER"

EXPLORATIONS BY:

L. AGASSIZ & L. F. POURTALES - 1871-72

131	Off Sandy Bay	75-100	Not given.
132	" " "	17-100	" "

DREDGING STATIONS OCCUPIED BY
THE U. S. COAST SURVEY STEAMER

"BLAKE"

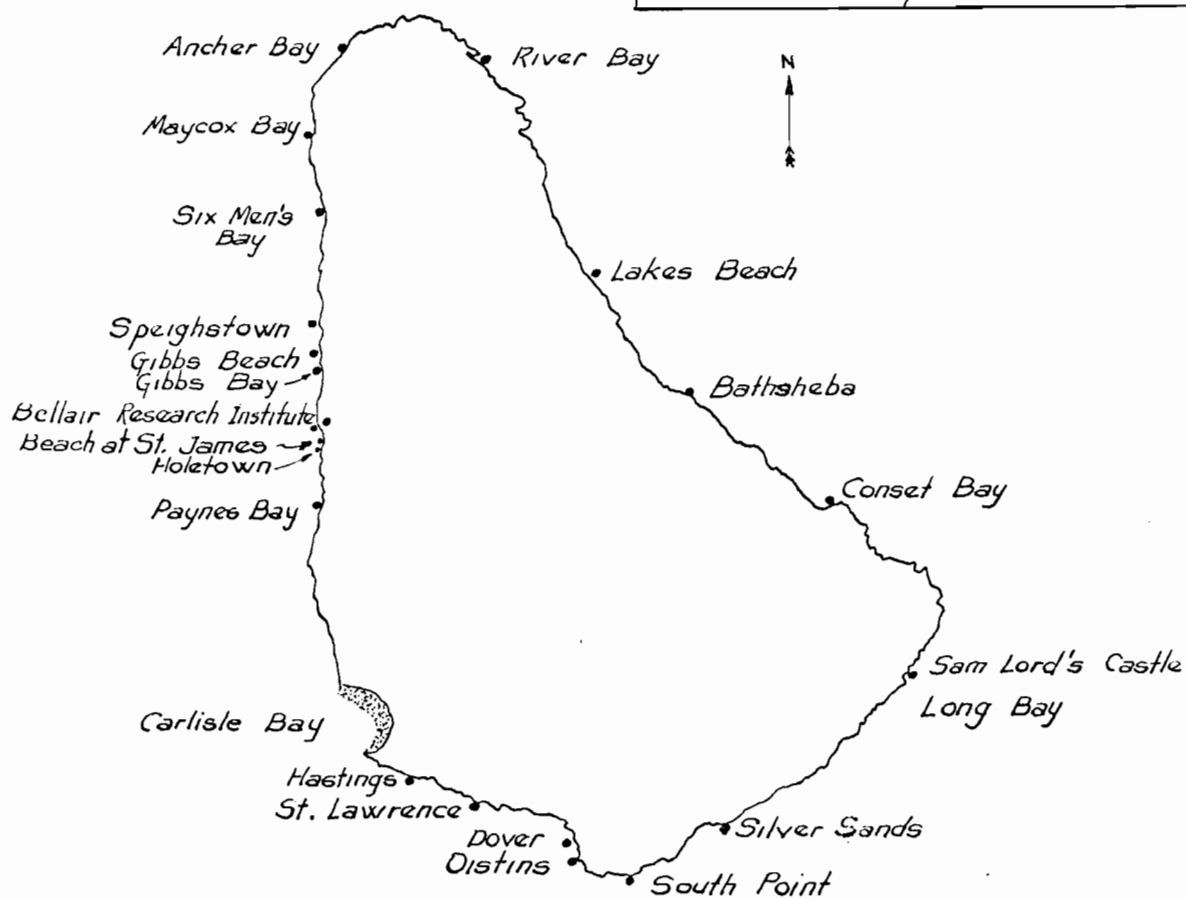
EXPLORATIONS BY:

A. AGASSIZ - 1878-79 (See Bull. MCZ. 6, 1881)

Station No. (original)	Locality	Depth fms.	Temperature Surface Bottom °F. °F.		Ecological Data
286	Off Barbados	7-45			Not given.
287	" "	7.5-50			Coral, sand & broken shells.
285	" "	13-40			Not given.
292	" "	56	80	74.5	Coral, sand & broken shells.
278	" "	69	78	68	Coral bottom.
290	" "	73	80	79.75	Coarse coral sand, broken shell.
272	" "	76	79	64.75	Coarse sand & shell, hard bottom.
293	" "	82	80	64.5	Coral sand & broken shells.
300	" "	82	80.5	60	Data not included.
296	" "	84	78	61.5	Hard bottom.
276	" "	94	79.5	61	Data not included.
273	" "	103	79.5	59.5	Coral & broken shells, yellow.
277	" "	106	80	58	Hard rocky bottom.
279	" "	118	79.75	58.5	Very rough, very rocky bottom.
298	" "	120	80.25	61	Broken shells & coral.
297	" "	125	80.25	56.5	Calc. stones.
294	" "	137	80.5	54.5	Hard bottom.
299	" "	140	80.5	56.5	Coral and corallines.

CONT'D - A. AGASSIZ - 1878-79 "BLAKE"

Station No. (original)	Locality	Depth fms.	Temperature		Ecological Data
			Surface °F.	Bottom °F.	
282	Off Barbados	154	81	56	Coral sand & broken shells.
295	" "	180	80	50.75	Hard Bottom.
291	" "	200	79.75	49.75	Flat calc. stones.
274	" "	209	79.5	53.5	Fine sand & ooze.
275	" "	218	80	52.5	Fine sand, brown specks.
280	" "	221	80	50.5	Globigerina sand.
283	" "	237	80	49	Hard bottom.
281	" "	288	80	46.5	Globigerina ooze & broken shells.
284	" "	347	80	44.5	Fine sand, globigerina ooze.
288	" "	399	80	44.5	Hard bottom.
289	" "	713	80.5	40	Data not given.



Map. 1. - Littoral and shallow water stations explored for molluscs around Barbados.

PHYSIOGRAPHY AND HYDROGRAPHY

Barbados is the southeasternmost island of the West Indian Archipelago. It lies 90 miles to the east of the Windward Islands and is a part of the Lesser Antilles. It is semi-triangular in shape, occupying an area of 166 sq. miles, and measuring 21 miles long by 11 miles wide at its broadest part. Its highest elevation is Mt. Hilaby, 1104 ft. There are no off shore islands, the so-called Pelican Island, frequently mentioned in the records of the "Eolis Junior" was a small key close to the shore of Bridgetown. Improvements in the harbour facilities in recent times have made use of this key which is now part of the mainland.

Four distinct geological strata are recognized in Barbados; a basal one composed of sandstone, characteristic of shallow water sedimentation, and possibly dating from Upper Eocene times. (See Davies, p. 117, 1934). This is topped by two other layers, one of volcanic dust and the other of organic deposition, both typical of deep water. The upper layer dates from Pleistocene times and is of coralline origin. There is no evidence of volcanic activity in Barbados. The emergence of this island from deep water probably took place in Middle Miocene time along with the formation of other islands in the Caribbean. Kummel (1961), discusses this subject in detail.

The rainfall is about 60 inches. There are no rivers in Barbados because the permeability of the upper terrestrial cap has limited the

surface flow of water to gullies. Estuarine regions, therefore, are small and unimportant as faunal habitats.

The coast of Barbados is relatively smooth in outline and the submarine shelf is quite steep. Therefore, lagoons, inlets, intertidal mud flats, salt marshes and protected shallow bays are rare or absent on the island. Sizeable stretches of the coast, particularly on the north and southeast sides are occupied by limestone cliffs in the form of terraces and scarps, some reaching over 100 feet in height. These lie directly in the water or on the beach which extends into a narrow, shallow platform that becomes partly exposed at low tide. Other sections of the coast are occupied by long sandy beaches the continuity of which is interrupted, in some places, by shallow rocky areas extending for varying distances or by cliffs or minor outcrops. Mangrove flats are absent from the island. (Lewis, verbal communication).

About half of the leeward side, the southern part, is fringed by active coral reefs growing between 10 to 70 meters from the shore and are broken up by sandy or rocky areas. Shallow platforms known as reef-flats, appear between the shore and the fringing reefs; they have been formed by the accumulation of dead shells, reef debris, rocks, etc., becoming consolidated by sand, gravel and other smaller particles as well as plants such as Thalassia testudinum Konig which has become sparsely established in many areas. In other areas coral rock and other eroded debris have been transported directly into the intertidal and subtidal region. Barbados is separated from its neighbouring territories by

depths of over 1,000 fathoms. It is in the path of the Atlantic Westerly Drift (North Equatorial Current) and the South Equatorial Current, both following a westerly course.

The tidal range (according to Lewis 1960), has a maximum of 3.6 ft. and a mean tide of 2.3 ft. He reports that the tides are of the mixed semi-diurnal type, two highs and two lows each day, without inequality between high tides.

The mean monthly air and sea surface temperature (off shore waters) range between 25° and 28° C. Slightly higher temperatures occur at the bottom in shallow waters. The only records of temperature and salinity below the surface waters are those that appeared in the records of the "Blake" (1889).

Detailed information of the physiography and hydrography of the island is given by Lewis (1960). Charts No. 1, and H. O. 1010 from a British Survey of Barbados, now reprinted by the U. S. Hydrographic Office in Washington, D. C., give some information on the topography, bathymetry and nature of the substrata from the shore to depths of about 120 fms. Information on the topography and nature of the substrata along the littoral region is found on map D. O. S. 418 (Series E. 749) published by the Directorate of Overseas Surveys, Tolworth, Surrey, England. The records of the "Blake" (see Station List), gives information of the substrata from 7 to 713 fathoms. The results of Lewis' (1965) investigations with the "Diadema" give information on the bottom topography and the composition of the substrata in the area explored.



Fig. 1. View of River Bay on the north coast.



Fig. 2. View of Bathsheba on the east coast.
Note boulders along this coast.

P R E L I M I N A R Y D I S C U S S I O N

I. Ecological Distribution.

The distributional patterns of marine organisms within a given region or zone are controlled by many complex factors such as food, nature of the substrate, temperature, pressure, salinity, inter and intra-specific competition for food and space, predation, mode of reproduction and dispersal, etc. The problems of distribution have been approached from various points of view by several investigators such as Stephenson and Stephenson (1949 and 1950), Thorson (1950, 1957), Petersen (1913), Mayr (1963) as well as several others. They are not discussed in detail in this work.

The geographic position of Barbados, its small size and the physiographic and hydrographic features of its coasts significantly affect the ecology of the intertidal and low-tide zones. These are characteristically rather homogeneous and exposed to the full effect of wave action and other erosive agents. Common West Indian species such as Littorina angulifera and Crassotrea rhizophorae, normally inhabitants of mangrove flats, or the mud-boring Cyrtopleura costata are absent from Barbados. It is possible that such specialized forms may not have reached Barbadian shores because of unfavourable ocean currents, but the lack of suitable habitats is a more likely cause.

The survival of an organism depends on its capacity to respond or adapt to the environmental variables encountered at all times. Pearse and Gunter (1957) and Gunter (1957) have shown the effect of salinity and

temperature upon the size and shape of the shell of various molluscs and the body of other organisms while Thorson (1957) discusses the harmful effects of these two factors on Arctic tidal communities. Mechanical factors of the environment, on the other hand, account for the wide range of shape found in the shells of the pelecypods Ostrea and Isognomon. Clanch and Turner (1964) have shown that difference in sex (genetic factors) also account for the size and morphological differences in the shell of the gastropod Voluta musica in which the male individuals are usually smaller, more slender and less sculptured than the females. This is probably the case with other forms.

The effect of food upon the colour of the shell has been shown by Moore (1936) in the gastropods Thais lapillus.

Since the adaptive capacity varies with the species and the individuals, the distribution of a given species may also vary with locality and local conditions. The intertidal and shallow water areas around Barbados, like those of other territories within tropical regions, offer great advantages for all year round reproduction, survival and dispersal of the associated fauna because the seasonal range in water temperature is small. Lewis (1960 a) found that the 32 mollusc species (mostly intertidal) which he investigated tend to have a long reproductive period and have reproductive methods that are highly adapted to achieve survival in their restricted and specialized habitats. Of 25 species for which fertilization is discussed, 18 (about 67%) are

copulators, 13 of these (about 46%) lay eggs in capsules, and 2 (8%) have a short pelagic stage. From the total number of species investigated, 8 (32%) have external fertilization and all in all, 8 (32%) have a short pelagic stage.

Copulation and ovoviviparity as well as a short pelagic stage constitute very efficient methods of achieving survival and settlement within the area of the parental stock. However, this situation creates certain significant drawbacks particularly among gregarious forms, as the problem of intra-specific competition for food and space becomes greater. A good example of this can be found in the little gastropod Planaxis lineatus which aggregates under rocks and pebbles in numbers of sometimes over 150 individuals or more to the square inch. The results of this overcrowding may possibly be harmful to the species and deserves investigation. The chances of dispersal are probably reduced by this habit. An example of an adaptation favouring dispersal is shown by Petalonchus irregularis. Lewis (1960 a) observed that this ovoviviparous species lays eggs in egg-cases which are released freely in the water, so that while the eggs are developing within the egg-cases, the latter are drifting with the currents for several days before hatching and settling, thus ensuring the dispersal of the species. It is possible that other species forming egg-cases may have other special means of dispersal.

While a free-swimming larval stage represents a very significant advantage for dispersal, particularly among sublittoral forms, this does not imply that dispersal is entirely dependent on such a stage, for the adult

and juvenile individuals of non-sedentary forms, particularly gastropods, can travel quite far from the spot where they originally settled.

Robertson (1959 a) explains that some large gastropods can travel on sand several hundred yards in one day. Small epibenthic forms, i.e. Rissoina and Alaba for example, may be mechanically transported on floating seaweeds. In the case of bivalves, some sessile forms such as Chama, Spondylus, Mytilus and the wood-boring Teredo, Bankia and others, may be mechanically transported long distances on the bottoms of ships.

Movements of this sort avoid the long planktonic larval journey which occurs, as Thorson (1950) pointed out, during the most critical stage in the life of the organisms. Little is known about the reproductive methods and larval behaviour of West Indian sublittoral forms. Some gastropods lay their eggs in egg-cases which may be loose or attached to solid substances, i.e. shells and rocks, on the substrate. The wide geographic range shown by many species may fully or partly depend on a long pelagic larval life.

Sufficiently suitable food and proper substrate are among the basic requirements of most benthic organisms. Examples of highly selective benthic organisms are the gastropods Neosimnia and Cyphoma, and the pelecypod Pteria which are always associated as epizoids, the latter in particular, with a definite type of gorgonian. According to Robertson (1959) the two former species probably feed on the forms on which they live. Similarly specialized are the wood-boring Teredo and Bankia which live exclusively in wood. The lack of this will account for the absence of such forms from an otherwise possibly suitable habitat. Certain forms seem to be less selective. Robertson discovered that some larvae of the sand-dwelling pelecypod Pinna carnea

settle on Thalassia at Bimini Island, Bahamas. These larvae, however, die soon afterwards. The same species, however, is able to settle in crevices and depressions on, or among corals at Barbados, and the shell grows conforming to the mechanical factors of the environment. One specimen exhibiting this condition was obtained by Lewis in 3 fathoms near station 23; others were observed by Emery together with some individuals which became established in sand, their typical habitat. Other species are still less selective and able to adapt to a variety of ecological conditions. The ubiquitous gastropods Columbella mercatoria, Tegula fasciata and Acmaea pustulata are examples of this sort. These forms have been found by the writer as epibenthic on Thalassia on areas of level bottom. Tegula fasciata, in particular, is a typical inhabitant of shallow hypersaline areas in the northern part of the Gulf of Mexico (Parker 1959). They also occur exposed on rocky bottoms as well as in protected areas, while at Barbados they are always found under rocks. It should be emphasized that variations in the genetic complex of some individuals within certain species may influence the ecological requirements of those individuals and thus their preference for a given set of conditions. (See Mayr, 1963 p. 376).

II. Feeding and Locomotion.

The feeding habits and food preference of West Indian marine molluscs, particularly gastropods, are known for a relatively small number of forms. The various feeding types recognized in this account are based on Robertson (1959) and Yonge (1928 a and b) and are shown in the

feeding tables in the following section of the narrative. Robertson (1959 a) pointed out that many shallow water forms remain sheltered during day-time and become active in search of food at night. Careful observations were not made on this particular aspect of behaviour in the Barbadian fauna. Some forms, however, such as Nodilittorina tuberculata, particularly those living on boulders, were found to become quite active during high-tide periods when the spray water started to reach them. At other times they tend to aggregate in the pits and crevices formed on the rock where shade and dampness remain. Those living on the cliffs enjoy greater freedom of movement and did not aggregate as much as the former. Lewis (1960 a) reported this form to be an active feeder at night. Cassis flammea was found occasionally on the leeward side of the island, moving about among large slabs on the reef flats, but it was not found in the act of feeding. The related forms Cypraescassis testiculus and Phalium cicatricosum were discovered by the writer buried in sand accumulated under rocks in 2 feet of water on a reef-flat. The presence of these two species under the sand may be correlated with that of the spatangoid Brissus unicolor with which they were found and on which they very likely feed. The egg masses of these forms were not found, but juvenile individuals in a fairly advanced developmental stage were present together with the adults. Other gastropods, such as Natica and Distorsio as well as the scaphopod Dentalium, when brought up alive from deep water (about 100 fms.) survived and were quite active for about 3 days in the lab tanks. Dentalium ceratum was very active, using its bulbous foot which expanded and

contracted at a relatively fast rate, (apparently to dig), stopping sporadically and then starting again. The captacula were not extended at all.

Among mobile gastropods, Pisania pusio is by far the fastest moving form observed by the writer. This species dwells under large slabs on the reef-flats and in crevices in corals in about 3 fathoms. They are usually found in numbers of 2 to 5 under a single slab, but not many slabs are found under which Pisania is present. When the slab is turned over, the individuals are able to disappear from sight very rapidly by moving under an adjacent slab or into another concealing place. The pelecypod Donax may be the only other form whose locomotive capacity can be compared with this species.

The little scallop Chlamys ornata lives on the underside of slabs on the reef-flats. It is temporarily attached by its thin, transparent nylon-like byssal filaments. Upon being disturbed it swims away like a jet by rapid and continuous clapping of the valves. The locomotive capacity of this form is very limited; when disturbed it may swim away for a distance of about 1 ft., before falling to the bottom. If disturbed more than twice in succession most individuals will not respond the third time.

COMPOSITION OF THE BARBADIAN FAUNA

A total of 761 species and subspecies of marine shelled molluscs were recorded. This figure includes all the records published to date and the majority of the unpublished ones. Due to lack of time, it was unfortunately impossible to study the collections in the Academy of Natural sciences in Philadelphia, the American Museum of Natural History in New York, as well as part of the collection in the U. S. National Museum, although it is doubtful that the intertidal and shallow water species that exist in any of the above institutions have not already been included in the present work. The writer regrets that due to the lack of material and sufficient information, the rudimentary shelled and the shell-less members of the class Cephalopoda, except Spirula spirula, and the subclass Opisthobranchia have to be excluded from this account.

Examination of the recorded species shows the following faunal composition:

Gastropoda	526	Pelecypoda	194
Amphineura	10	Cephalopoda	1
Scaphopoda	30		

The material obtained by the "Diadema" contains a number of forms that superficially seem to be new species. One of these Cymatium (Septa) bellairsi, is described. The others are discussed only briefly in the

systematic part since detailed study will be necessary to determine their specific status. When this is done, they will appear in a supplementary report to the present work.

The following species in the Carpenter Collection, McGill University, have been rejected. They were labelled erroneously, as coming from Barbados - but none of them are known to occur in the Western Atlantic. Those without specific name do not agree with any known form from the above area. Some were sent by Gov. Rawson to Philip Carpenter, but it seems likely that they were mixed with other West Indian material in the Governor's collection.

Euchelus punctigera A. Adams

Trivia oryza Lam.

Simnia patula Penn.

Obeliscus Turritus A. Adams

Stylifer subangulatus A. Adams

Turritella bicingulata

Epitonium lineolatum Sby. as Scalaria
tenuicostata Sby.

Nitidella formosa Gask. as N. tessellata

Euryta aciculata Lam.

Truncaria eurytoides Carp.

Nassaria pruinosa Gld.

Nassaria sp.

Pusia desmertina Lam.

Pusia sp.

Chelyconus mediterraneus

Mangelia sp. as M. angustae C.B.Ad.

Mangelia sp.

Drillia sp.

Mitromorpha dormitor Sby.

Chiton granosus

Chiton cumingi Frembl.

THE MOLLUSCAN ASSEMBLAGES
AND ENVIRONMENTS

I. Supralittoral and Littoral Intertidal Regions.

a) Sandy Beaches. No living molluscs were found on the intertidal zone of the beach. The pelecypod Donax characteristically found in this zone in other areas has not been reported from the island. However, while searching for records in the collections at Harvard University, the writer found two lots of Donax denticulatus labelled as from Barbados. They were sent by Mrs. F. G. Kellett. One of these lots consists of three loose valves and the other of 29 valves, ten of them corresponding to five complete specimens. The validity of these records is dubious. Although populations of Donax normally fluctuate a great deal from year to year and during a period of outburst can be extremely abundant, this species has never been reported from Barbados by professional collectors. Mrs. Kellett was an amateur collector. However, the fact that sand grain size on some Barbados beaches is suitable for the existence of this form together with the observation that the co-existing form, the crustacean Emerita is present in Barbados (Lewis, verbal communication) makes it difficult to entirely ignore the Donax record.

The tiny gastropod Truncatella pulchella bilabiata usually living under seaweed or stones at the upper intertidal levels of the beach was not found alive. Dead specimens, however, have been occasionally found on the beach.

b) Estuarine Areas. Estuarine areas, as previously explained (see Physiography) are small and unimportant in regard to molluscs. The two areas investigated, a stream flowing into River Bay and a pond behind the beach at Holetown, were without intertidal molluscs. However, such forms as the pulmonates Tralia ovula, Melampus monile and Pedipies mirabilis, all normally associated with salt marshes and brackish water areas, have been found dead on the open coast. Whether they live in Barbados or arrived there by mechanical transport is not known. Significant in this connection is the normally brackish Melampus coffeus which Lewis (1960 a) found living in crevices on a limestone wall.

c) Pebble or Boulder Beach. These habitats are populated by certain specialized forms such as Planaxis lineatus, Planaxis nucleus, Nitidella ocellata, Brachidontes citrinus, Batillaria minima, and others that usually live on or underneath rocks.

d) Rocky Shores. Rocky shores form the most important and successfully occupied habitat for supralittoral and intertidal organisms around Barbados. Lewis (1960 a) recognized among these two basic types of ecological stations, i.e. "Cliff Station" and "Beach-Rock Platform" (see fig. 4 and 5). Of the two, the former are physically the most conspicuous ones because of the undercut at the intertidal level of their vertical profile which has been modified by physical, chemical and organic agents so as to form arches and depressions of varying degrees. Where cutting has been too deep, the upper parts of the cliffs have collapsed onto the beach where they remain as boulders, constituting

isolated ecological niches exposed to further erosion. These are common on the windward side of the island, where wave action is much stronger.

While the physical role of waves is to transport sand grains which in turn cause mechanical scouring, organisms like patellids and polyplacophorans appear to be responsible for much of the undercut at the intertidal levels on the rocky stations. Robertson (1959 a) summarizing the results of his investigations and the previous views of others, explains that abrasion caused by the mechanical action of the foot and the underside of the girdle, in polyplacophorans, and by the edge of the shell, in patellids, is partly responsible for the formation of pits in the rock. He also found that changes in the pH of the mucus of the foot of the polyplacophorans, resulting in the sporadic presence of CO_2 , also account for some chemical action in the formation of pits. The radula, also rasps away the outer layer of the rock where the algae on which they feed is embedded. The presence of sand grains in the gut of these organisms confirm this. Significant also is the presence of haematite in the radular cusps of Patella, and magnetite in those of Chitons from the coast of California. The importance of these elements as an adaptation in the feeding habits of such forms is discussed in detail by T. H. Carefoot (1965). Four out of the five pit-forming species reported by Robertson for the Bimini Island, Bahamas, are found in Barbados. They are Fisurella barbadensis, Acmaea jamaicensis, Acanthopleura granulata, and Ceratozона rugosa.

A total of 30 supralittoral and littoral intertidal species were recorded, including 6 that were found dead only. They are divided as follows: - Gastropoda 25, Amphineura 3, and Pelecypoda 1. With the exception of 3 of these, representing only 10% of the population, the remaining 27 species (90%) are of epifaunistic habits, associated with hard substrata. They live on the cliff, boulders and rocky platforms. Their ecological zonation is shown in fig. 4 and 5. Purpura patula, is the only carnivorous form. All others feed on algae or algal detritus.

No quantitative records were made while collecting the species. The terms "rare", "uncommon", "common", and "abundant" are arbitrarily used to give an idea of the relative occurrence of the species. With a few exceptions, most of the species are common wherever they occur. Their local distribution is shown on maps 2 and 3.

The following list includes all the forms collected and recorded. Due to the fact that the locality on the labels of many of the latter read "Barbados", without specific location, each is considered as coming from one undetermined station. Also, unless a specimen is specifically reported as having been collected alive, it is considered to have been a dead or beach specimen as is so often the case.

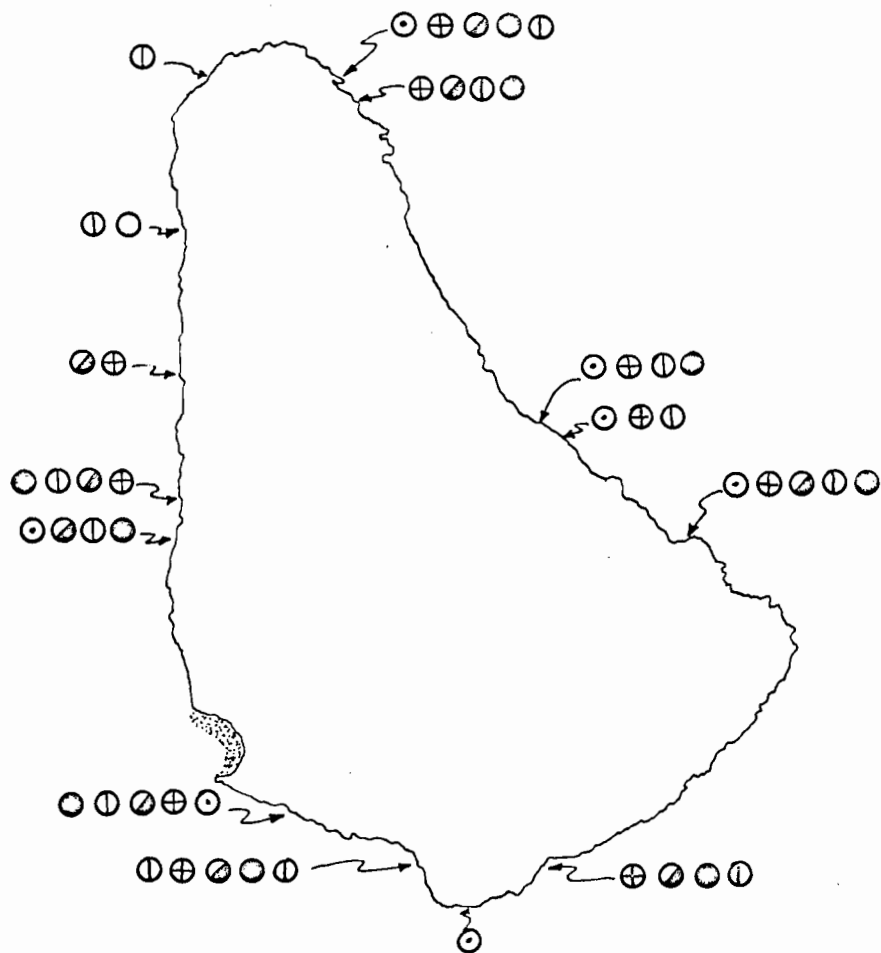
MOLLUSCAN ASSEMBLAGES
SUPRALITTORAL AND INTERTIDAL REGION

CLASS GASTROPODA

<u>Species</u>	<u>No. of Stations</u>	<u>Relative occurrence</u>	<u>Remarks</u>
<u>Fissurella rosea</u>	2	Moderately uncommon	Living, 1 station
<u>Fissurella nodosa</u>	4	Moderately uncommon	Living, 1 station
<u>Fissurella barbadensis</u>	17	Common	Living, 12 stations
<u>Fissurella cf. clenchi</u>	1	Rare	Beach specimen
<u>Acmaea leucopleura</u>	11	Common	Living, 9 stations
<u>Acmaea jamaicensis</u>	2	Uncommon	Living, 1 station
<u>Acmaea antillarum</u>	1	Uncommon	Living,
<u>Nerita peloronta</u>	14	Uncommon	Living, 12 stations
<u>Nerita versicolor</u>	20	Uncommon	Living, 15 stations
<u>Nerita tessellata</u>	20	Abundant	Living, 14 stations
<u>Puperita pupa</u>	7	Common	Living, 3 stations
<u>Littorina meleagris</u>	4	Uncommon	Living,
<u>Littorina ziczac</u>	18	Common	Living, 15 stations
<u>Tectarius muricatus</u>	12	Uncommon	Living, 10 stations
<u>Nodilittorina tuberculata</u>	15	Uncommon	Living, 14 stations
<u>Truncatella pulchella</u> <u>form bilabiata</u>	1	Rare ?	Beach specimen, dead
<u>Truncatella caribaeensis</u>	3	Uncommon ?	Beach specimen, dead
<u>Petalocochus cf. varians</u>	7	Common, 1 station	Living,
<u>Petalocochus irregularis</u>	7	Abundant	Living,
<u>Cerithium variable</u>	1	Common	Occupied by hermit crabs

CONT'D - CLASS GASTROPODA

<u>Species</u>	<u>No. of Stations</u>	<u>Relative occurrence</u>	<u>Remarks</u>
<u>Batillaria minima</u>	1	Rare	Beach specimen
<u>Purpura patula</u>	15	Common	Living, 12 stations
<u>Melampus coffeus</u>	1	Uncommon	Living,
<u>Melampus monile</u>	1	Rare	Beach specimen, dead
<u>Tralia ovula</u>	2	Rare	Beach specimen, dead
<u>Pedipes mirabilis</u>	1	?	Beach specimen, dead
<u>Chiton marmoreus</u>	11	Common, 1 station	Living,
<u>Acanthopleura granulata</u>	11	Common, 1 station	Living,
<u>Ceratozona rugosa</u>	1	Moderately uncommon	Living,
<u>Donax denticulatus</u>	1	Rare	Beach specimen



Map. 2 - Locality records for supralittoral mollusc species at Barbados

⊙ Tectarius muricatus

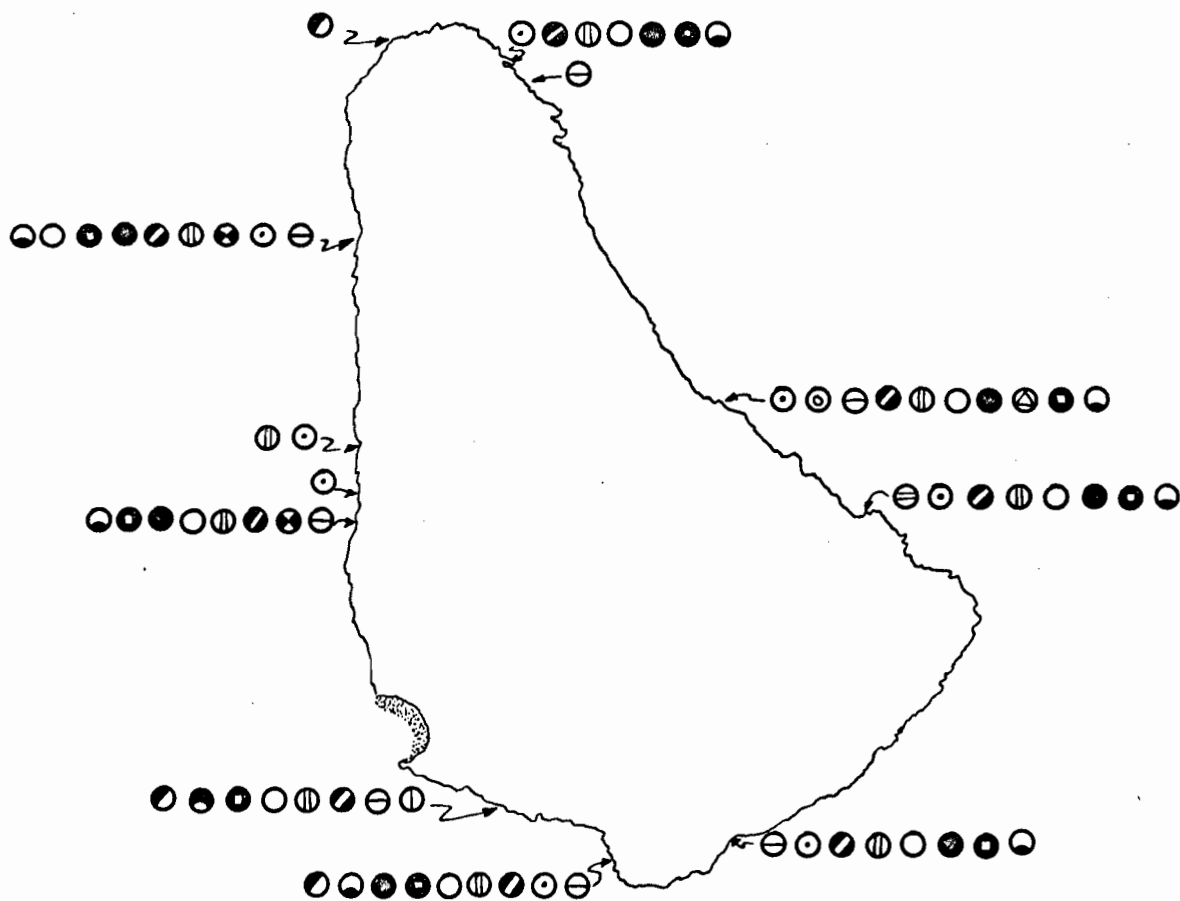
⊕ Nodilittorina tuberculata

⊗ Littorina ziczac

① Nerita versicolor

○ Nerita peloronta

○ Puperita pupa



Map. 3 - Locality records for fourteen intertidal mollusc species at Barbados

- Fissurella barbadensis
- ⊙ Fissurella rosea
- ① Fissurella nodosa
- ⊖ Acmaea leucopleura
- Nerita tessellata
- ⊗ Littorina melagrins
- ② Thais patula

- Petalioconchus irregularis
- Petalioconchus c.f. varians
- ⊗ Melampus coffeus
- ⊖ Thais rustica
- Acanthopleura granulata
- Chiton marmoreus
- Ceratozona squalida

ECOLOGICAL ZONATION OF
SUPRALITTORAL AND INTERTIDAL MOLLUSCS
AT BARBADOS

Based on algal dominance Lewis (1960 a) divided the ecological stations along the rocky shores of Barbados as follows: Cliff Station: "Weather Zone", "Yellow Zone", "Black Zone", "Green Zone", "Pink Zone", and "Surf Zone". Beach Rock Platform: "Neritina Zone", "Boulder Zone", "Fissurella Zone", and "Surf Zone". (See Fig. 3. below). Graphic representation of these stations with their divided zones are shown, with the verbal permission of the author, adapted to indicate the distribution of the associated molluscan assemblages. (See Figs. 4. and 5. on the following pages). According to Lewis these zones reach as high as 7 ft. He also indicated that tide and waves are important factors in determining this height.

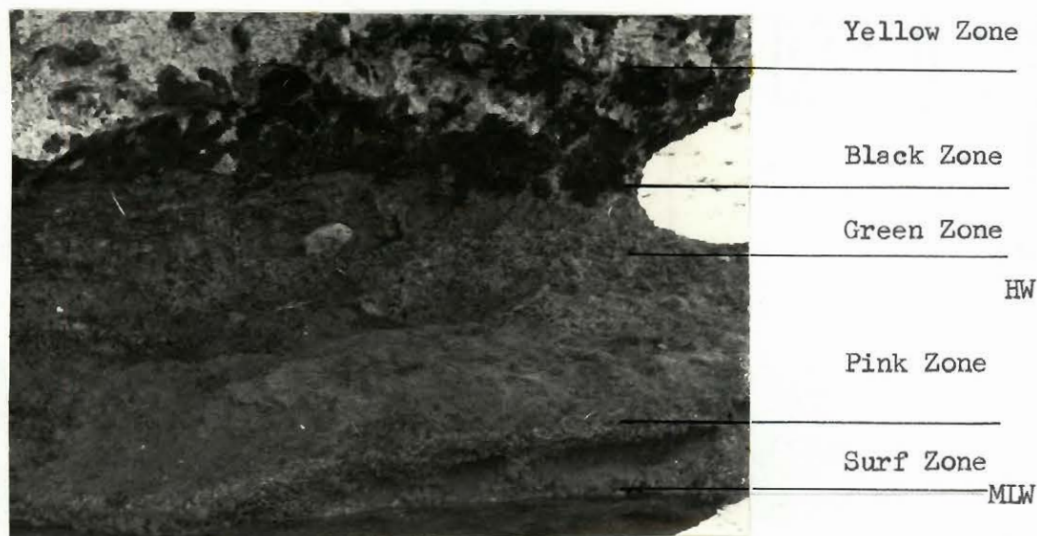


Fig. 3. Ecological zonation of supralittoral and intertidal regions on a boulder at Bathsheba. Not shown are Weather Zone and part of Yellow Zone. Photo by D. Pocock.

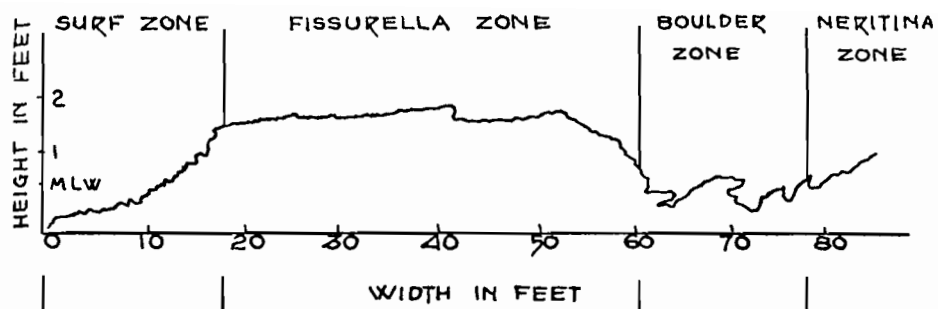
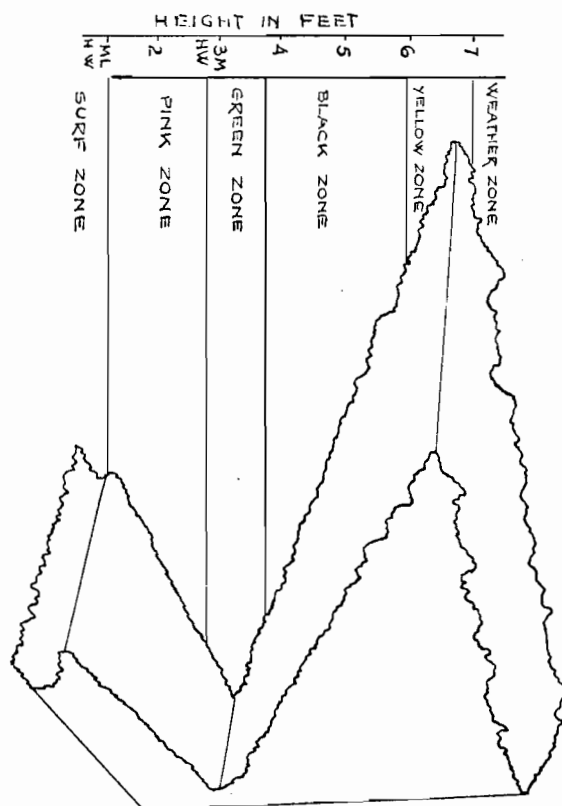


Fig. 4.- Diagrammatic representation of a Beach. Rock Platform Station at Barbados (from Lewis, 1960) adapted to show the vertical distribution of nine intertidal and seven sublittoral mollusc species. The dotted lines indicate sporadic occurrence.

Fig. 5- Diagrammatic representation of a typical Cliff Station at Barbados. (from Lewis, 1960) adapted to show the vertical distribution of thirteen supra-littoral and littoral intertidal molluscs. The dotted lines indicate sporadic occurrence.



Fissurella barbadensis
Acmaea leucopleura
Nerita peloronta
Nerita tessellata
Nerita versicolor
Nodilittorina tuberculata
Littorina ziczac
Tactarius muricatus
Petalconchus irregularis
Purpura patula
Acanthopleura granulata
Chiton marmoratus
Ceratozona squalida

II.

P E L A G I C F A U N A

Plankton collecting was not carried out. With the exception of the pelagic Janthina janthina and the mesopelagic Spirula spirula, occasionally found washed ashore, all other planktonic material was obtained in the off shore dredgings in depths from 70 - 131 fathoms. The empty shells of several forms, particularly Clio pyramidata, constitute a fair percentage of the bottom debris, suggesting that the species is quite common on the surface. The employment of the tow net and other adequate equipment will undoubtedly prove successful in securing live specimens of several species including some that have so far not been recorded. The following characteristically pelagic species were found: -

Janthina janthinaCavolina tridentataJanthina globosaCavolina gibbosaAtlanta peroniClio pyramidataCavolina trispinosaClio recurvaCavolina longirostrisSpirula spirulaCavolina uncinata

III. Sublittoral Region.

There is relatively little information on the bathymetric distribution of West Indian molluscs. Several genera, Cittarium, Thais, Nitidella, and Planaxis as well as representatives of others such as Astraea, Diodora and Fissurella, for example, are confined to a very narrow range at the upper bathymetric levels; they live within the surf and low-tide zones. Some of these, however, sporadically dwell above the surf zone in situations which never become dry at low tide. Fissurella is an example of a genus also including species limited to the intertidal zone. Other typical sublittoral genera such as Cymatium, Oliva, Strombus, Modulus, Tellina, Arcopagia, Papyridea, and Trachycardium which are confined to relatively shallow depths; with some exceptions they are found from the low-tide zone down to several fathoms. The genera Cerithiopsis and Diodora, on the other hand, are well represented by several species in a wide range of depths.

Although bottom sampling is at present the most effective method of determining the distribution of sublittoral species, it will be found that when considering animal assemblages as a whole, any pattern of zonation will show considerable overlap of species. In the light of our present knowledge and until further explorations can be carried out, particularly in the intermediate and deep water regions, the following zonation is recognized for the sublittoral molluscs of Barbados: -

a) Upper shelf. b) Nearshore shelf. c) Intermediate shelf to middle slope.

a) Upper Shelf (Surf and low-tide zones, 0 - 3 feet).

The upper sublittoral levels of Barbados, the so-called surf and low-tide zones are very limited in extent. They are confined to a narrow marginal band of sandy beaches, which are generally very steep, and the reef-flats extending out 10 to 70 meters from the shoreline. These zones correspond, in part, with what the Stephensons (1949) called the Lower Platform on the Florida Keys. At low-tide the surf breaks in this area which may be covered by as much as 3 feet of water at high tide. Some areas become exposed, but never dry, during Spring tides. Thalassia is present in some places where sandy patches occur. Likewise mats of an undetermined species of green alga covers some of the exposed parts of pebbles and slabs.

Sandy areas in this zone provide very unstable conditions. Abrupt overnight changes in the complexity of the beach have been observed by some of the residents and local collectors. The dominant molluscs living in these zones belong to the epifauna. The majority of these are gastropods, but some boring and sessile pelecypods are also present. Infauna examples of the more inconspicuous burrowing forms are the gastropods Phalium cicatricosum and Cypraea cassis testiculus which were discovered buried in sand accumulated under rocks in 2 ft. of water on a reef-flat. Other forms, Polinices hepaticus, Terebra cinerea, and Tellina radiata have been found occasionally by Emery (verbal communication) at St. Lawrence in 3 to 8 feet of water; the latter form lives buried 2 ft. deep in the sand.

The gastropods Smaragdia and Tricolia, normally associated with the plant Thalassia in quiet water are absent from the wave swept areas of Barbados. The latter genus is represented by several species in the fauna. The epizoite Cyphoma gibbosum was found sporadically on the seaward slope of the reefs in depths close to one fathom, but it is probably uncommon below this depth where Rhipidigorgia flavellum, the gorgonian on which it usually lives, is less exposed to wave action. All other forms live in protected niches, i.e. crevices and depressions as well as under, or on the underside of rocks. Neritina virginea was the only sublittoral form found living in the two estuarine areas already mentioned. Neritina cf. clenchi, a rather fluviatile form, has been found dead on the beach.

A total of 66 species and subspecies were recorded, 60 of these were obtained during the writer's explorations. They are divided as follows: - Gastropods 50, amphineurans 5 and pelecypods 11. Fifty nine species, over 89% of the total, belong to the epifauna and the remaining 7 (over 10%) are infauna. For habitual distribution and feeding types see the following table: -

TABLE I.

Habitual Distribution of Mollusca at Barbados - Shallow Shelf.

Class	Epifauna	Infauna	Total
Gastropoda	45	5	50
Amphineura	5		5
Pelecypoda	11		<u>11</u>
			66

TABLE II.

Molluscan Assemblages at Barbados - Surf Zone and Shallow Shelf.

Feeding Types

<u>Class</u>	<u>Algae & Algal Detritus, etc. Feeders</u>	<u>Suspension Predators & Scavengers</u>	<u>Ectoparasites</u>	<u>Total</u>
Gastropoda	19	30	1	50
Amphineura	5			5
Pelecypoda		11		<u>11</u> 66

Conus mus, Leucozonia ocellata, Thais rustica, and Chiton tuberculatus are the common forms around the island. Others such as Columbella mercatoria, Tegula fasciata, Cantharus auritulus, Drupa nodulosa and a few others are fairly common wherever they occur, but so far have not been found at every station. The following list includes all the forms so far collected and recorded. The local distribution of the common forms is shown on maps 4. and 5.

Class Gastropoda - Surf Zone and Shallow Shelf.

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Hemitoma octoradiata</u>	8	Common	Living, 4 stations
<u>Diodora listeri</u>	6	Uncommon	Living, 3 stations
<u>Lucapina philippina</u>	1	Rare	Living
<u>Lucapina suffusa</u>	3	Uncommon	Living
<u>Fissurella angusta</u>	4	Moderately rare	Living, 1 station
<u>Acmaea pustulata</u>	6	Uncommon	Living, 3 stations

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Cittarium pica</u>	12	Uncommon	Living,
<u>Tegula excavata</u>	3	Uncommon	Living,
<u>Tegula fasciata</u>	13	Common	Living, 12 stations
<u>Tegula maculostriata</u>	4	Uncommon	Living, 2 stations
<u>Arene tricarinata</u>	2	Moderately rare	Living,
<u>Astraea tuber</u>	5	Uncommon	Living, 3 stations
<u>Astraea caelata</u>	4	Uncommon	Living, 2 stations
<u>Neritina virginea</u>	2	Common	Living,
<u>Neritina cf. clenchi</u>	2	Rare	Dead on beach.
<u>Heliciscus cylindricus</u>	3	Uncommon	Living, 1 station
<u>Planaxis lineatus</u>	8	Abundant	Living, 5 stations
<u>Planaxis nucleus</u>	12	Common	Living, 10 stations
<u>Trivia pediculus</u>	5	Uncommon	Living, 1 station
<u>Cypraea cinerea</u>	4	Uncommon	Living, 1 station
<u>Phalium cicatricosum</u>	3	Uncommon	Living, 1 station
<u>Cassis flammea</u>	2	Uncommon	Living, 1 station
<u>Cypraea cassis testiculus</u>	4	Uncommon	Living, 1 station
<u>Bursa cubaniana</u>	3	Moderately rare	Living, 1 station
<u>Cymatium nicobaricum</u>	5	Uncommon	Living, 1 station
<u>Thais haemastoma floridana</u>	1	Rare	Dead, fresh
<u>Thais rustica</u>	13	Common	Living, 11 stations
<u>Thais deltoidea</u>	8	Common	Living, 6 stations
<u>Thais coronata</u>	1	Rare	Beach specimen

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Coralliophila caribaea</u>	4	Common	Living, 3 stations
<u>Columbella mercatoria</u>	11	Common	Living, 6 stations
<u>Drupa nodulosa</u>	7	Common	Living, 8 stations
<u>Ocenebra muricoides</u>	3	Moderately rare.	Living,
<u>Nitidella ocellata</u>	8	Uncommon	Living, 6 stations
<u>Nitidella dichroa</u>	1	Rare ?	In Carpenter Coll.
<u>Nitidella nitida</u>	5	Uncommon	Living, 1 station
<u>Nitidella laevigata</u>	7	Common	Living, 3 stations
<u>Engina turbinella</u>	7	Common	Living, 4 stations
<u>Pisania pusio</u>	4	Uncommon	Living, 2 stations
<u>Cantharus auritulus</u>	7	Common	Living, 4 stations
<u>Leucozonia ocellata</u>	13	Common	Living, 12 stations
<u>Leucozonia nassa</u>	3	Uncommon	Living, 2 stations
<u>Mitra barbadensis</u>	4	Uncommon	Living, 2 stations
<u>Mitra nodulosa</u>	5	Uncommon	Living, 2 stations
<u>Pusia hanleyi</u>	1	Rare	Living,
<u>Pusia puella</u>	4	Uncommon	Living,
<u>Conus regius</u>	2	Rare	Living, 1 station
<u>Conus mus</u>	15	Common	Living, 11 stations
<u>Monilispira albinodata</u>	4	Common	Living, 2 stations
<u>Micromelo undata</u>	1	?	Observed by Emery
<u>Class Amphineura</u>			
<u>Chiton tuberculatus</u>	9	Common	Observed by Emery
<u>Ischnochiton limaciformis</u>	2	Moderately uncommon	Observed by Emery

CONT'D - Class Amphineura

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Ischnochiton papillosus</u>	3	Moderately uncommon	Living,
<u>Ischnochiton pectinatus</u>	4	Moderately uncommon	Living, 2 stations
<u>Lepidochiton liozonis</u>	1	?	Reported by Thiele

Class Pelacypoda

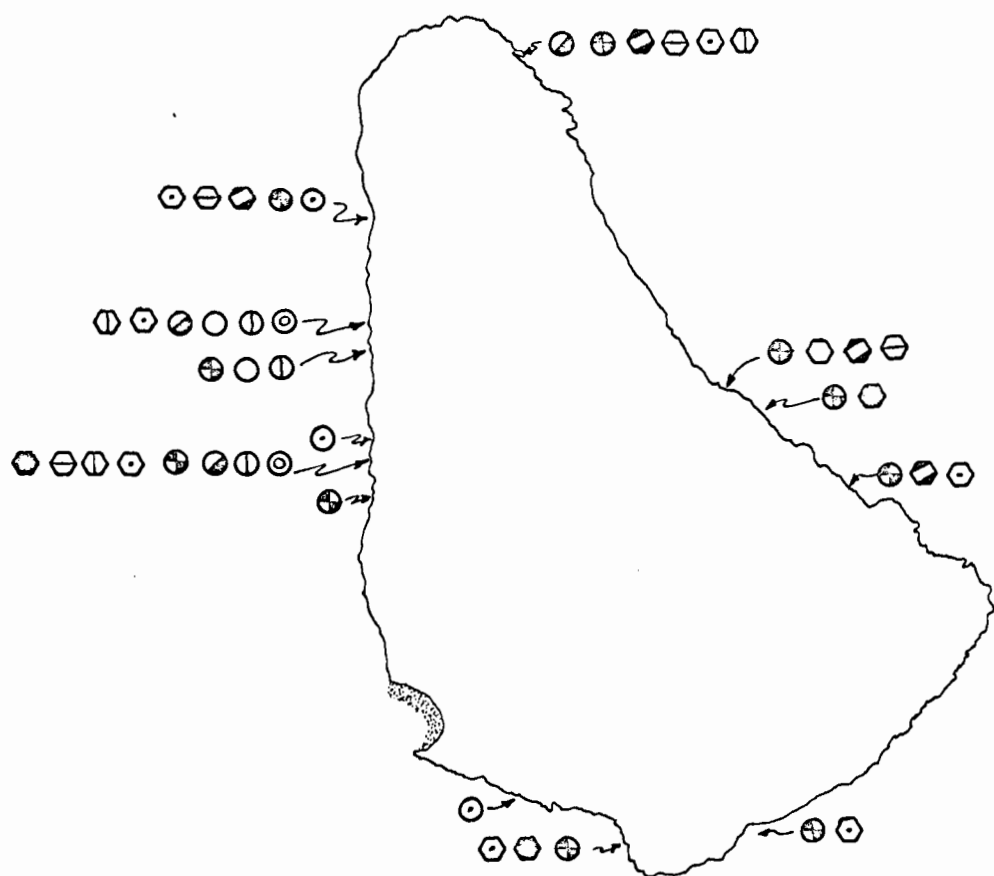
<u>Arca imbricata</u>	4	Uncommon	Living, 3 stations
<u>Barbatia concellaria</u>	6	Uncommon	Living, 4 stations
<u>Barbatia domingensis</u>	1	Moderately uncommon	Living,
<u>Arcopsis adamsi</u>	5	Uncommon	Living, 3 stations
<u>Brachidontes citrinus</u>	3	Rare	Living, 1 stations
<u>Brachidontes exustus</u>	1	?	Reported by Thiele
<u>Isognomon radiatus</u>	14	Common	Living, 11 stations
<u>Chlamys ornata</u>	4	Uncommon	Living, 2 stations
<u>Lima scabra</u>	3	Uncommon	Dead
<u>Lima scabra form tenera</u>	4	Uncommon	Living, 1 station
<u>Chama sarda</u>	4	Uncommon	Living, 2 stations



Fig. 6. Rock ledges on the Beach Platform at Six Men's Bay. Photo by D. Pocock.

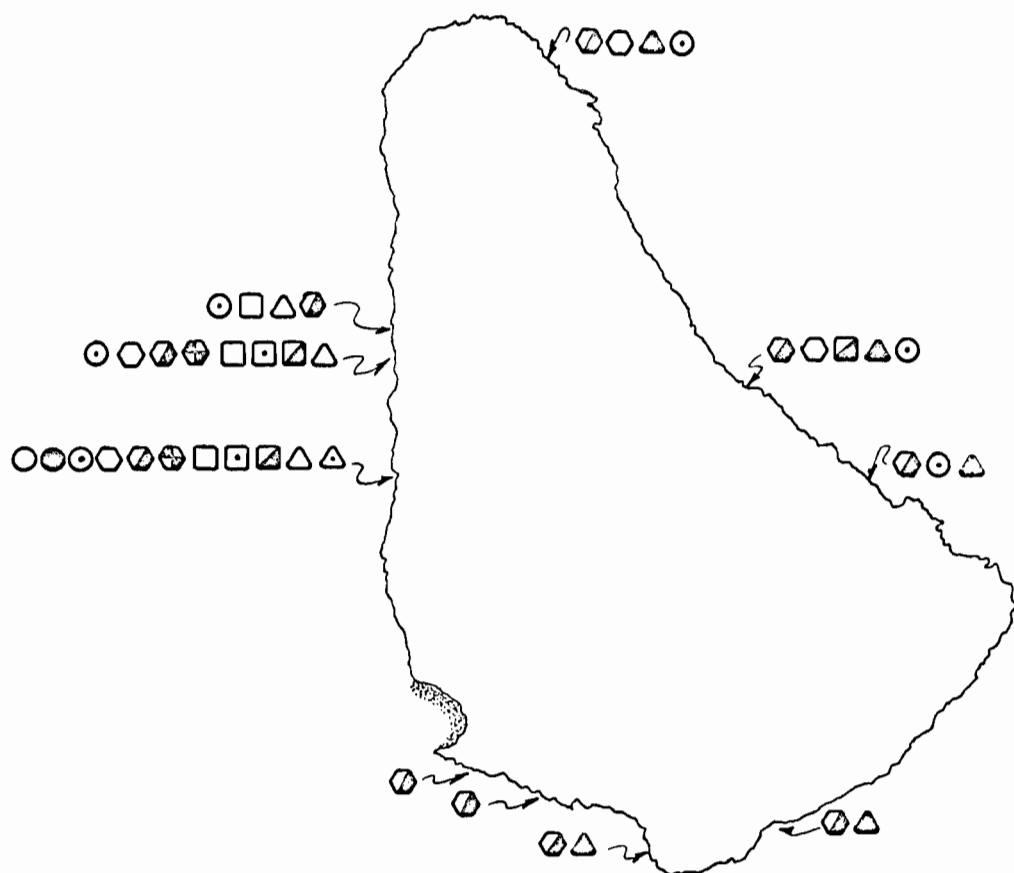


Fig. 7. Shore at Bellairs Research Institute, St. James. Here reef-flat becomes partly exposed at low-tide.



Map. 4. - Locality records for twelve mollusc species found on the surf zone and reef flats at Barbados

⊙ <u><i>Hamitoma octoradiata</i></u>	⊕ <u><i>Astraea tuber</i></u>
⊗ <u><i>Acmaea pustulata</i></u>	⊖ <u><i>Astraea caelata</i></u>
Ⓢ <u><i>Diodora listeri</i></u>	⦿ <u><i>Planaxis lineatus</i></u>
○ <u><i>Tegula maculostriata</i></u>	⊖ <u><i>Thais deltoidea</i></u>
⦿ <u><i>Tegula fasciata</i></u>	⊕ <u><i>Leocozoria ocellata</i></u>
⊕ <u><i>Cittarium pica</i></u>	Ⓢ <u><i>Columbella mercatoria</i></u>



Map. 5. - Locality records for twelve mollusc species found on the surf zone and reef flats at Barbados

○ <u><i>Phalium cicatricosum</i></u>	□ <u><i>Ischnochiton papillosus</i></u>
○ <u><i>Coralliophila caribaea</i></u>	◻ <u><i>Arca imbricata</i></u>
⊙ <u><i>Drupa nodulosa</i></u>	◻ <u><i>Barbatia cancellaria</i></u>
⊕ <u><i>Cantharus auritulus</i></u>	△ <u><i>Chlamys ornata</i></u>
⊗ <u><i>Conus mus</i></u>	△ <u><i>Isognomon radiatus</i></u>
⊕ <u><i>Ischnochiton limaciformis</i></u>	△ <u><i>Lima ecabria form tenera</i></u>

b) Nearshore Shelf (0.5 - 15 fathoms)

The nearshore shelf of Barbados may be limited to a narrow zone since beyond the edge of the reef-flats the bottom drops sharply into depths of 3 or more fathoms, while in areas where it slopes directly from the beach such depths are found quite close to the water line. Study of this zone with the dredge and other gear have been hampered by the rough nature of the substrate. The most successful explorations so far have been by diving, but these have been very sporadic and limited in number and scope. Among the forms obtained by this method are: - Pseudochama radians, Pinna carnea, Spondylus americanus, Ostrea frons, Cassis flammea, Strombus gigas, Tellina radiata, and Astraea phoebia. These have been obtained at depths varying from 1.5 to 7 fathoms on the leeward side of the island. Our present knowledge of the molluscan assemblages living within this shelf is, therefore, largely based on specimens, mostly dead, that have been transported up to the reef-flats or washed ashore by waves, tidal currents, storms, etc. Material of this type collected from the various sources investigated resulted in a total of 233 species and subspecies divided as follows: - Gastropods 153, amphineurans 1, scaphopods 3, and pelecypods 76.

All these species have been found alive within the general depth range indicated above in many other areas of the West Indies, associated with similar ecological conditions, i.e. reef, sand, reef-sand, muddy sand and as epibenthic forms. It is therefore, most probable that they dwell within the same depths in Barbados, although the range may vary with the species and local conditions. Some are also found in the low-tide

zone (on reef-flats) while others, infaunal forms in particular, are also found in the same zone in other areas of the West Indies where conditions are suitable for their settlement. A few were obtained by Lewis in the Petersen grab apparatus in 13 to 27 fathoms. It is very likely that the proximity of deep water to the shore may cause the overlapping or intermixing of species from adjacent zones. Analysis of the species recorded for this zone show that 76% belong to the epifauna and 24% to the infauna (see table below).

TABLE III.

Habitual Distribution of Mollusca at Barbados - Nearshore Shelf.

Class	Epifauna	Epibenthic	Epizoite	Infauna	Total
Gastropoda	76	22	3	52	152
Amphineura	1				1
Scaphopoda				3	3
Pelecypoda	19	6		51	76

TABLE IV.

Feeding Types.

Class	Algae & Algal Detritus, etc.	Filter & Suspension	Predators & Scavengers	Ecto- parasites	Un- specified	Total
Gastropoda	47	6	72	19	9	153
Amphineura	1					1
Scaphopoda	3					3
Pelecypoda		76				76

The following list includes all the species recorded. Since the majority of the specimens have been found washed ashore, it is impossible to show their local distribution. However, the records indicate that St. Lawrence, St. James and Bathsheba are the areas where they are more frequently found. The relative occurrence reported here for species washed ashore is based on the frequency with which they have been found and the number of specimens found on each occasion.

Class Gatropoda - Near Shore Shelf (hard bottom and epibenthic assemblages).

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Hemitoma emarginata</u>	2	Rare	Beach specimens
<u>Diodora dysoni</u>	2	Rare	Beach specimens
<u>Diodora cayenensis</u>	1	Rare	Beach specimens
<u>Diodora minuta</u>	1	Rare	Beach specimens
<u>Diodora arcuata</u>	1	Rare	Beach specimens
<u>Diodora viridula</u>	2	Moderately rare	Beach specimens
<u>Lucapina sowerbii</u>	1	Rare	Beach specimens
<u>Fissurella fascicularis</u>	1	Rare	Beach specimens
<u>Turbo castaneus</u>	1	Rare	Beach specimens
<u>Calliostoma sarcodum</u>	1	Rare	Beach specimens
<u>Arene cruentata</u>	1	Rare	Beach specimens
<u>Liotia miniata</u>	1	Rare	Living,
<u>Astraea tecta</u>	1	Rare	Beach specimens
<u>Tricolia tessellata</u>	2	?	Beach specimens
<u>Tricolia affinis</u>	2	?	Beach specimens

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Tricolia affinis beau</u>	1	?	Beach specimens
<u>Tricolia adamsi</u>	2	?	Beach specimens
<u>Tricolia bella</u>	1	?	Beach specimens
<u>Tricolia thalassicola</u>	2	?	Beach specimens
<u>Smaragdia viridis viridimaris</u>	3	?	Beach specimens
<u>Rissoina chesnelli</u>	1	Rare	In deep water, dead
<u>Rissoina bryerea</u>	3	Uncommon ?	Beach specimens
<u>Rissoina cancellata</u>	2	Uncommon ?	Beach specimens
<u>Rissoina multicosta</u>	2	Rare ?	Beach specimen & in deep water, dead
<u>Rissoina decussata</u>	1	Rare ?	Beach specimens
<u>Rissoina sheaferi</u>	1	Rare ?	Beach specimens
<u>Zebina browniana</u>	2	Rare ?	Beach specimens
<u>Alaba incerta</u>	1	Rare ?	Beach specimens
<u>Caecum pulchellum</u>	2	Rare ?	Beach specimens
<u>Modulus modulus</u>	4	Rare ?	Beach specimens
<u>Modulus carchedonius</u>	?	Rare ?	Dubious record. See Johnson's Vol. 1, No. 14
<u>Cerithium litteratum</u>	2	Uncommon ?	Dead on reef-flats
<u>Cerithium eburneum</u>	7	Uncommon	Dead on reef-flats
<u>Triphora ornata</u>	1	Rare ?	Dead in sand
<u>Triphora melanura</u>	2	Rare ?	Dead in sand
<u>Triphora turris-thomae</u>	1	Rare ?	Dead on rocks
<u>Cerithiopsis greeni</u>	1	Rare ?	Dead on rocks

CONT'D - Class Gastropoda

Species	No. of Stations	Relative Occurrence	Remarks
<u>Cerithiopsis subulata</u>	1	Rare ?	Dead on rocks
<u>Seila adamsi</u>	3	Uncommon ?	Dead on rocks
<u>Opalia crenata</u>	2	Rare ?	Dead on reef-flats
<u>Epitonium occidentale</u>	1	Rare ?	Beach specimens
<u>Epitonium albidum</u>	1	Rare ?	Beach specimens
<u>Epitonium foliaceicostum</u>	1	Rare ?	Beach specimens
<u>Epitonium unifasciatum</u>	1	Rare ?	Beach specimens
<u>Epitonium lamellosum</u>	4	Uncommon	Dead on reef-flats
<u>Epitonium novangliae</u>	1	Rare ?	Beach specimens and in deep water, dead.
<u>Epitonium cf. novangliae</u>	1	Rare ?	In deep water, dead.
<u>Epitonium venosum</u>	1	Rare ?	Beach specimens
<u>Epitonium candeanum</u>	2	Rare ?	Beach specimens
<u>Epitonium echinaticostum</u>	1	Rare ?	Beach specimens
<u>Depresiscala nitidella</u>	4	Uncommon ?	Beach specimens
<u>Cheilea equestris</u>	7	Uncommon	Dead on reef-flats and in deep water.
<u>Hipponix antiquatus</u>	8	Uncommon	Beach specimens
<u>Hipponix subrufus</u>	1	Rare ?	Beach specimens
<u>Capulus intortus</u>	3	Rare ?	Beach specimens
<u>Crucibulum auricula</u>	1	Rare	Beach specimens ?
<u>Crepidula convexa</u>	1	Rare	Beach specimens
<u>Crepidula sculeata</u>	1	Rare	Beach specimen
<u>Trivia pediculus</u>	6	Uncommon	Living also on reef-flats

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Trivia suffusa</u>	3	Uncommon	Beach specimens
<u>Trivia antillarum</u>	2	Rare	Beach specimens
<u>Trivia quadripunctata</u>	3	Uncommon ?	Beach specimens
<u>Trivia leucosphaera</u>	7	Uncommon ?	Dredged, dead
<u>Trivia nix</u>	1	Rare	Beach specimens, also dredged, dead
<u>Cypraea zebra</u>	3	Uncommon ?	Beach specimens
<u>Cypraea cinerea</u>	8	Uncommon	Living, 1 station also dredged
<u>Neosimnia acicularis</u>	3	Rare ?	Beach specimens
<u>Neosimnia uniplicata</u>	1	Rare	Beach specimens
<u>Cyphoma gibbosum</u>	7	Uncommon	Living, 1 station, gorgonian
<u>Charonia variegata</u>	5	Uncommon	Beach specimens
<u>Cymatium nicobaricum</u>	8	Uncommon	On reef-flats, dead
<u>Cymatium labiosum</u>	1	Rare	Beach specimens
<u>Bursa thomae</u>	1	Rare	Beach specimens
<u>Murex motacilla</u>	3	Rare	Dredged, dead
<u>Murex brevifrons</u>	1	Rare	Beach specimens
<u>Pterotyphis cancellatus</u>	1	Rare	Beach specimens
<u>Muricopsis oxytatus</u>	1	Rare	On reef-flats, dead
<u>Ocenebra intermedia</u>	3	Uncommon	On reef-flats, dead
<u>Coralliophila abbreviata</u>	2	Rare ?	Beach specimens
<u>Coralliophila caribaea</u>	2	Uncommon	Living also on reef-flats
<u>Letiaxis mansfieldi</u>	1	Rare	Beach specimens

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Anachis pulchella</u>	1	Rare	Beach specimens
<u>Mitrella nitens</u>	3	Uncommon	On reef-flats, dead
<u>Mitrella fenestrata</u>	1	Rare	On reef-flats, dead
<u>Latirus mcgintyi</u>	1	Rare	Beach specimens
<u>Colubraria swifti</u>	3	Rare	Dead on beach & dredge
<u>Colubraria obscura</u>	2	Rare ?	Beach specimens
<u>Colubraria lanceolata</u>	1	Rare ?	Beach specimens
<u>Pisania pusio</u>	6	Uncommon	Living, & reef-flats
<u>Mitra albicosta</u>	1	Rare	Beach specimens
<u>Pusia hanleyi</u>	1	Rare	Beach specimens
<u>Pusia pulchella</u>	3	Uncommon ?	Beach specimens
<u>Pusia histrio</u>	1	Rare	Beach specimens
<u>Pusia sp.</u>	1	Rare	Beach specimens
<u>Hyalina tenuilabra</u>	5	Uncommon	Beach specimens
<u>Hyalina avenacea</u>	3	Uncommon ?	Dead on beach & dredge
<u>Conus granulatus</u>	3	Uncommon ?	Beach specimens
<u>Conus daucus</u>	2	Rare	Beach specimens
<u>Conus flavescens</u>	1	Rare	Dead in dredge
<u>Conus ranunculus</u>	1	Rare ?	Beach specimens
<u>Crassispira ostrearum</u>	1	Rare	Dead in dredge
<u>Drillia sp. c.</u>	1	Rare	Dead
<u>Ithycythara lanceolata</u>	1	Rare	Beach specimens, also dredged, dead
<u>Mangelia sp.</u>	1	Rare	Beach specimens

Class Amphineura

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Tonicia schrammi</u>	1	Rare ?	Living

Class Pelecypoda

<u>Arca zebra</u>	1	Rare	Beach specimens
<u>Barbatia candida</u>	1	Rare	Beach specimens
<u>Gregariella coralliophaga</u>	1	Rare	Beach specimens
<u>Petricola lapicida</u>	1	Rare	Dead
<u>Botula fusca</u>	1	?	Beach specimens
<u>Lithophaga antillarum</u>	1	?	Dead in dredge
<u>Lithophaga nigra</u>	3	Uncommon ?	Dead on reef-flats
<u>Lithophaga bisulcata</u>	4	Uncommon ?	On reef-flats & dredge, dead
<u>Pinctada radiata</u>	4	Uncommon ?	Beach specimens
<u>Plicatula gibbosa</u>	3	Uncommon ?	Beach specimens
<u>Spondylus americanus</u>	5	Uncommon	Living, 1 station obtained by diving
<u>Lima lima</u>	8	Uncommon	Dead on beach & dredge
<u>Anomia ephippium</u>	1	Rare	Beach specimens
<u>Ostrea frons</u>	1	Uncommon ?	Living, obtained by diving
<u>Ostrea equestris</u>	2	Uncommon	Living, 1 station
<u>Chama florida</u>	2	Rare	Beach specimens
<u>Bornia undulata</u>	1	Rare	Beach specimens
<u>Pseudochama radians</u>	3	Uncommon	Some beach specimens, also by diving

CONT'D - Class Pelecypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Chione pygmaea</u>	2	Uncommon ?	Dead on reef-flats
<u>Teredothyra dominicensis</u>	1	?	Wood-borer
<u>Teredo bartschi</u>	1	?	Wood-borer
<u>Teredo somersi</u>	1	?	Wood-borer
<u>Teredo clappi</u>	1	?	Wood-borer
<u>Teredo bipinnata</u>	1	?	Wood-borer
<u>Psiloteredo megothara</u>	1	?	Wood-borer

Near Shore Shelf-(Infaunal assemblages).

Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Astraea phoebia</u>	1	Rare	Living, obtained by diving
<u>Turritella variegata</u>	1	Rare	Beach specimens
<u>Architectonica nobilis</u>	1	Rare	Beach specimens
<u>Vermicularia spirata</u>	1	Rare	Beach specimens
<u>Stylifer subulatus</u>	1	Rare	Ectoparasite ?
<u>Strombus gigas</u>	5	Uncommon	Living, 2 stations, obtained by diving
<u>Strombus raninus</u>	4	Uncommon	Beach specimens
<u>Strombus pugilis</u>	2	Rare	Beach specimens
<u>Strombus gallus</u>	2	Rare	Beach specimens

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Cypraea spurca acicularis</u>	1	Rare	Beach specimens
<u>Polinices lacteus</u>	4	Uncommon	Beach specimens, also in dredge, dead
<u>Polinices hepaticus</u>	3	Uncommon	Beach specimens
<u>Natica canrena</u>	6	Uncommon	Beach specimens
<u>Natica livida</u>	2	Uncommon	Beach specimens
<u>Stigmaulax sulcata</u>	1	Rare	Beach specimens
<u>Cassis tuberosa</u>	2	Uncommon	Living, 1 station
<u>Cassis flammea</u>	4	Uncommon	Living, also on reef- flats, obtained by diving
<u>Phalium cicatricosum</u>	5	Uncommon	Living, also on reef- flats
<u>Cypraeacassis testiculus</u>	7	Uncommon	Living, also on reef- flats
<u>Cymatium nicobaricum</u>	5	Uncommon	Living, 1 station
<u>Cymatium muricinum</u>	2	Rare	Beach specimens
<u>Cymatium femorale</u>	1	Rare	Beach specimens
<u>Cymatium parthenopeum</u>	1	Rare	Beach specimens
<u>Cymatium gemmatum</u>	1	Rare	Beach specimens
<u>Cymatium pileare</u>	6	Uncommon	Beach specimens
<u>Cymatium caribbaeum</u>	1	Rare	Beach specimens
<u>Tonna maculosa</u>	7	Uncommon	Beach specimens
<u>Murex pomum</u>	1	Rare	Beach specimens
<u>Nassarius albus</u>	3	Uncommon	Common in deep water
<u>Nassarius sp.</u>	1	Rare	Beach specimens

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Latirus cayohuesonicus</u>	1	Rare	Beach specimens
<u>Latirus infundibulum</u>	1	Rare	Beach specimens
<u>Fasciolaria tulipa</u>	1	Rare	Beach specimens
<u>Vasum capitellum</u>	1	Rare	Beach specimens
<u>Olivia reticularis</u>	4	Uncommon ?	Beach specimens
<u>Olivella nivea</u>	4	Uncommon	Beach specimens
<u>Olivella deslata</u>	2	Uncommon	Beach specimens
<u>Olivella minuta</u>	3	Uncommon	Beach specimens
<u>Olivella petiolita</u>	1	Rare	Beach specimens
<u>Olivella verresuxi</u>	1	Rare	Beach specimens
<u>Olivella floralia</u>	1	Rare	Beach specimens
<u>Olivella blanesi</u>	1	Rare	Beach specimens
<u>Jaspidella jaspidea</u>	5	Uncommon	Beach specimens
<u>Voluta musica</u>	9	Uncommon	Beach specimens
<u>Prunum apicinum</u>	1	Rare	Beach specimens
<u>Terebra hastata</u>	1	Rare	Beach specimens
<u>Terebra cinerea</u>	5	Uncommon	Beach specimens
<u>Bulla striata</u>	14	Uncommon	Beach specimens
<u>Retusa sp.</u>	1	Rare	Beach specimens
<u>Odostomia sp. e.</u>	1	Rare	Beach specimens
<u>Pyramidella dolabrata</u>	1	Rare	Beach specimens
<u>Pyramidella candida</u>	1	Rare	Dredged, dead

Class Scaphopoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Cadulus quadridentatus</u>	2	Uncommon ?	Dredged
<u>Dentalium antillarum</u>	1	Rare	Dredged
<u>Dentalium semistriolatum</u>	1	Rare	Beach specimens

Class Pelecypoda

<u>Arca auriculata</u>	1	Rare	Beach specimens
<u>Glycymeris decussata</u>	1	Rare	Beach specimens
<u>Glycymeris pectinata</u>	1	Uncommon ?	Beach specimens
<u>Modiolus americanus</u>	2	Rare	Beach specimens
<u>Pinna carnea</u>	3	Uncommon	Living, 1 station obtained by diving
<u>Pecten gibbus nucleus</u>	1	Rare	Beach specimens
<u>Pecten nodosus</u>	1	Rare	Beach specimens
<u>Pecten sp.</u>	1	Rare	Beach specimens
<u>Lima pellucida</u>	1	Rare	Beach specimens
<u>Crassinella guadalupensis</u>	1	Rare	Beach specimens
<u>Lucina pensylvanica</u>	6	Uncommon	Beach specimens
<u>Phacoides sp.</u>	1	Rare	Beach specimens
<u>Codakia orbicularis</u>	6	Uncommon	Beach specimens
<u>Codakia orbiculata</u>	1	Rare	Beach specimens
<u>Codakia costata</u>	1	Rare	Beach specimens
<u>Codakia sp. a.</u>	1	Rare	Beach specimens
<u>Codakia sp. b.</u>	1	?	Beach specimens
<u>Codakia sp. c.</u>	1	?	Beach specimens

CONT'D - Class Pelecypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Divaricella quadrisulcata</u>	1	Rare	Beach specimens
<u>Divaricella dentata</u>	1	Rare	Beach specimens
<u>Bornia undulata</u>	1	Rare	
<u>Trachycardium muricatum</u>	1	Rare	Beach specimens
<u>Trachycardium egmontianum</u>	1	Rare	Beach specimens
<u>Trachycardium magnum</u>	2	Rare	Beach specimens
<u>Papyridea soleniformis</u>	1	Rare	Beach specimens
<u>Papyridea semisulcata</u>	1	Rare	Beach specimens
<u>Americardia media</u>	6	Uncommon	On beach & dredge, dead
<u>Americardia guppyi</u>	2	Rare	Beach specimens
<u>Laevicardium laevigatum</u>	2	Rare	Beach specimens
<u>Antigona listeri</u>	1	Rare	Beach specimens
<u>Chione paphis</u>	2	Rare	Beach specimens
<u>Pitar dione</u>	1	Rare	Beach specimens
<u>Pitar circinata</u>	1	Rare	Beach specimens
<u>Macrocallista maculata</u>	1	Rare	Beach specimens
<u>Tellina radiata</u>	3	Uncommon ?	Beach specimens, also obtained by diving
<u>Tellina listeri</u>	1	Rare	Beach specimens
<u>Tellina similis</u>	2	Rare	Living, 1 station
<u>Tellina tenera</u>	1	Rare	Dredged
<u>Tellina punicea</u>	1	Rare	Beach specimens
<u>Tellina martinicensis</u>	1	Rare	Beach specimens

CONT'D - Class Pelecypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Relative Occurrence</u>	<u>Remarks</u>
<u>Tellina diantha</u>	1	Rare	Beach specimens
<u>Tellina paramera</u>	2	Rare ?	Dredged
<u>Tellina magna</u>	1	Rare	Beach specimens
<u>Arcopagia fausta</u>	5	Uncommon	Beach specimens
<u>Strigilla carnaria</u>	3	Uncommon	Beach specimens
<u>Semele proficua</u>	4	Uncommon	Beach specimens
<u>Mactra alata</u>	1	Rare	Beach specimens
<u>Ervilia nitens</u>	1	Rare	Dredged
<u>Mulinia portoricensis</u>	1	Rare	Beach specimens
<u>Tivela mactroides</u>	2	Uncommon ?	

c) Intermediate Shelf to Middle Slope (15 - 713 fathoms).

The offshore fauna of Barbados is only known from the leeward side of the island, from Bridgetown to north of Speightstown, where all the major explorations with the dredge and other gear have so far been carried out. The stations occupied by the "Blake" are referred to as off or near Barbados, but no definite locality or geographic limits are given. Obviously however, they were carried out at the lee side too, possibly beyond the limits given above. Agassiz (1888) pointed out the impossibility of dredging on the windward coasts and in the passages between these islands owing to strong winds.

The "Blake" explored a relatively wide bathymetric range (7 - 713 fathoms). It is evident, however, that the dredge caught very little molluscan material at the upper levels of this range because the records include very few forms that are known to live in the nearshore shelf. The "Blake" and "Diadema" samples include several species characteristic of shallow nearshore zones such as Polinices lacteus, Lima lima, Americardia media, Chione cancellata and a few others. Their empty shells were occasionally found and their presence in these hauls is obviously adventitious. It should be borne in mind that in areas like Barbados, located within the path of strong oceanic currents and where the submarine shelf is quite steep, the empty shells of many shallow water forms are bound to be drifted away from the shore and therefore, fall into deep water in depths where the species never live. Some may also reach great depths when regurgitated by fish.

No molluscs were recorded from below the 400 fathom line, that is, below the lower limits of the Archibenthal Zone. This may be related to the number of hauls (not given) and the extent of the area explored. However, the fauna from above this level includes 33 species that are considered as abyssal (Clarke, 1962).

A total of 411 species and subspecies were collected and recorded as follows: -

Gastropoda 287, amphineurans 1, scaphopods 27, and pelecypods 96.

They are discussed here as one assemblage because very few species can be used as indices for bathymetric patterns of distribution as only 71 of them were obtained alive, 21 of these with the Petersen grab. It is very likely that among the duplicates kept by Lewis there may be several others that were also taken alive. From analysis of the records, it is evident that a great number of these are euryopic forms.

Using all available records, the richest bathymetric range explored appears to be between 70 - 110 fathoms. Lewis (1965) reports the largest number of molluscs in dredgings from 55 - 82 fathoms. Similar results have been obtained in the Gulf of Mexico by Jim Moore (verbal communication). Probably related to this are the observations made by Agassiz (1888) regarding the accumulation of shore detritus and its influence on the rich and varied molluscan fauna at - or near the 100 fathom line of the continental slope of the eastern coast of the United States, the Yucatan Plateau, the windward side of the Lesser Antilles and some

other areas. Sediments from shallow water and possibly terrestrial origin are described by Lewis (1965). The fauna here is characterized by a large number of genera, including some families that are absent or poorly represented in the shallow depths such as the Turridae, Ficidae and Cocculinidae, among gastropods; the former being the dominant group. The scaphopods, typically deep-water forms, are as can be expected, more numerous than in shallow water. Although a large percentage of the species seems to be common, many, as the records indicate, are quite rare. Several others, even though they were present in almost every dredge haul, appear to be relatively uncommon. Only one or two individuals were obtained at each station. It is possible that this low quantitative level is related to predation by carnivorous members of the families Naticidae, Muricidae, Cymatiidae, Conidae and Turridae, which are well represented here. Drilled shells were common and it seems probable that predation on individuals in their early developmental stages may take a heavy toll.

The ecological position in deep-water of such groups as the Scaphopoda, and Amphineura, as well as several families within the Pelecypoda, i.e. Arcidae, Mytilidae, Cardiidae, and the Gastropoda, i.e. Fissurellidae, Cocculinidae, can be inferred on the basis of anatomical characters and the known habits of their representatives in shallow water. Other families, particularly the Cymatiidae, Columbidae, within the latter group, and the Pectinidae in the Pelecypoda for example, which are also well represented in shallow water, have been found in a variety of

substrates, depending on the species. It is, therefore, impossible at this point to determine the exact position of their relatives in deep water. However, from a superficial analysis of the various morphological types present in these moderate to deep-water assemblages. It is evident that 38% of the species belong to the epifauna, 6% are epibenthic, 27% infauna and 29% unspecified. Among feeding types 18% are algae or algal detritus feeders, 19% are filter and suspension feeders, 28% are predators, 9% ectoparasites and 24% unspecified, but possibly predators or scavengers. These results are shown in Table V. which combined with following Table VI. of feeding types may give an insight into the probably existing conditions in the wide bathymetric range discussed. The importance of these tables is only relative until further evidence on living material and the associated substrate is obtained in order to establish the proper habitual distribution and bathymetric zonation of each species.

TABLE V.

Habitual Distribution of Mollusca at Barbados - Intermediate Shelf to Middle Slope.

Class	Epifauna	Epibenthic	Infauna	Unspecified	Total
Gastropoda	135	23	37	92	287
Amphineura	1				1
Scaphopoda			27		27
Pelecypoda	22	5	51	18	96

TABLE VI.
Feeding Types

Class	Algae & Algal Detritus etc.	Filter & Suspension	Predators & Scavengers	Ecto- parasites	Un- specified	Total
Gastropoda	76	3	77	32	99	287
Amphineura	1					1
Scaphopoda			27			27
Pelecypoda		76	15	5		96

As far as the local distribution patterns are concerned, only limited information can be inferred from the available data. Variability of dredge hauls seems to indicate that some species such as Dentalium ceratum and Microcardium peramabile occur in irregularly distributed communities. Whether or not they are gregarious could not be determined with the gear used. Lewis did not report on this aspect of the fauna in connection with the grab samples. Cerithiopsis cristallinum and Nassarius albus were dredged alive more frequently and are probably more widely and evenly distributed.

The following list includes all the species collected and recorded. Those considered as abyssal are marked with asterisk.

Class Gastropoda - Intermediate Shelf - Lower Slope.

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimens per station</u>	<u>Remarks</u>
* <u>Scissurella crispata</u>	1	164-191	1	
<u>Scissurella alta</u>	2	100	1	
<u>Perotrochus quoyanus</u>	9	68-240	1	Living, 2 stations
<u>Perotrochus adansonianus</u>	2	94-100	1	
<u>Emarginula tuberculosa</u>	8	33-100	1	Living, 1 station
<u>Emarginula sicula</u>	2	100	1	
* <u>Emarginula phryxodes</u>	2	12-100	1	
<u>Rimula frenulata</u>	5	25-100		
<u>Rimula pycnomena</u>	1	33		
<u>Rimula aequisculpta</u>	5	75-100		
<u>Puncturella antillana</u>	2	153-213	1	Living, 1 station
<u>Puncturella billiae</u>	1	164-191	1	
* <u>Puncturella granulata</u>	3	80-100		
<u>Nesta atlantica</u>	1	80		
<u>Diodora sayi</u>	2	54-94	1	Eroded specimens
<u>Diodora fluviana</u>	6	27-218	1-2	Living, 1 station
<u>Diodora aguayoi</u>	4	100-138	1-2	Living, 1 station
<u>Diodora wetmorei</u>	2	100-131		
<u>Diodora tanneri</u>	2	100-399		
<u>Euchelus sp.</u>	2	13-82	1-2	
* <u>Lischkeia otto</u>	2	164-191	1	
<u>Solariella lacunella</u>	2	75-125	2	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimens per station</u>	<u>Remarks</u>
<u>Solariella lubrica</u>	1	34-43	1	Broken specimens
<u>Solariella lamellosa</u>	22	13-218	1-3	Living, 2 stations
<u>Solariella aeglis clavata</u>	3	13-191	1-2	
* <u>Solariella tiara</u>	3	54-138	1	
<u>Solariella asperrima</u>	7	13-164	1-2	
<u>Solariella dentifera</u>	3	103-140		
<u>Solariella sp. a.</u>	1	100	2	Living,
<u>Solariella sp. b.</u>	1	138-164	1	
<u>Basilissa costulata</u>	2	138-191	1	
<u>Basilissa sp.</u>	5	138-191	1-6	
* <u>Sequenzia monocingulata</u>	1	100		
<u>Sequenzia sp.</u>	1	191-218	2	Broken specimens
<u>Gaza superba</u>	3	209-218		
<u>Gaza watsoni</u>	4	84-154	1	Basal fragment, 2 sta.
<u>Microgaza rotella</u>	10	32-218	1-3	
<u>Leptothyra linnei</u>	2	100-191	1-2	
<u>Calliostoma roseolum</u>	10	67-138	1-5	
<u>Calliostoma marionae</u>	2	32-82	1	
<u>Calliostoma sapidum</u>	2	80-100		
<u>Calliostoma echinatum</u>	1	54-82	1	
<u>Calliostoma aurora</u>	1	140	1	
<u>Calliostoma javanicum</u>	1	82	1	Basal fragment (drifted) Shallow water species.

CONT'D - Class Gastropoda

Species	No. of Stations	Depth Range (fms.)	Specimens per station	Remarks
<u>Calliostoma bigelowi</u>	2	75-125	1	Basal fragments
<u>Brookula sp.</u>	5	131-218	1	
<u>Liotia bairdi</u>	2	27-67	1	
<u>Arene variabilis</u>	8	82-191	1-2	
<u>Arene variabilis var. microforia</u>	2	27-103	1	
<u>Arene bryareus</u>	1	76		
<u>Arene bryareus var. perforata</u>	1	100	1	Dead
<u>Cyclostrema amabile</u>	2	25-70		
<u>Turbo haraldi</u>	2	27-54	1	
<u>Cocculina rathbuni</u>	1	399	1	
* <u>Cocculina beauli</u>	1	399	1	
<u>Cocculina sp.</u>	1	131	4	Living
<u>Rissoa xanthias var. acuticostata</u>	1	100		
<u>Rissoa sp. a.</u>	1	164-191	5	
<u>Rissoa sp. b.</u>	4	191-218	1-2	
<u>Rissoina multicosta</u>	1	13-191	2	Dead (drifted) shallow water species
<u>Vitrinella sp.</u>	1	164-191	1	
<u>Teinostoma solida</u>	6	13-218	1-5	
<u>Teinostoma sp.</u>	2	54-82	1	
<u>Pseudomalaxis nobilis</u>	2	80-103	1	
<u>Heliacus clenchi</u>				
<u>Heliacus turneri</u>	1	164-191	1	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimens per station</u>	<u>Remarks</u>
<u>Architectonica peracuta</u>	4	73-138	1-2	
* <u>Vermetus exsertus</u>	1			
<u>Tenagodus modestus</u>	4	27-100		
<u>Tenagodus squamatus</u>	7	54-125		
<u>Petalonchus erectus</u>	3	54-90		
<u>Cerithium sp.</u>	1	13-27	1	
<u>Cerithiopsis matara</u>	1	100		
<u>Cerithiopsis scontium</u>	1	100		
<u>Cerithiopsis cristallinum</u>	11	32-138	1-15	Living, 3 stations
<u>Cerithiopsis abruptum</u>	1	100		
<u>Cerithiopsis emersoni</u>	1	27-54	1	Dead (drifted?)
<u>Cerithiopsis sp. a.</u>	1	27-54	1	
<u>Cerithiopsis sp. b.</u>	1	104-191	1	
<u>Mathilda barbadense</u>	1	100	1	
<u>Triphora triserialis</u>	1			
<u>Triphora melanura</u>	2	27-82	1	Dead (drifted)
<u>Triphora decorata</u>	1	27-54	1	Dead, broken (drifted ?)
<u>Triphora sp. a.</u>	1	54-82	1	Broken specimens
<u>Triphora sp. b.</u>	1	27-54	1	
<u>Stenorytis pernobilis</u>	3	73-100	1	
<u>Opalia pumilio var. merchiana</u>	3	80-100		
<u>Opalia eolis</u>	2	75-94		

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimens per station</u>	<u>Remarks</u>
<u>Amaea retifera</u>	2	30-90	1	
<u>Epitonium krebsii</u>	1	100	1	
<u>Epitonium novangliae</u>	1	109-138	1	Dead, broken (drifted)
<u>Epitonium pourtalesii</u>	1			Depth record lost
<u>Cylindriscala andrewsi</u>	1	191-218	1	Dead, imperfect (drifted?)
<u>Belcys intermedia</u>	1	109-191	1	
<u>Aclis supranitida var. lata</u>	1	100		
<u>Niso interrupta</u>	6	75-130	1-2	Living, 1 station
<u>Capulus galea</u>	1	218		
<u>Xenophora conchyliophora</u>	1	27-54	1	
<u>Xenophora caribaea</u>	7	82-164	1-2	Living, 1 station
<u>Xenophora longleyi</u>	2	82-209		
<u>Trivia leucosphaera</u>	4	54-138	1	Dead, shallow water form
<u>Trivia antillarum</u>	1	54-82	1	Dead, imperfect (drifted?)
<u>Cypraea cinerea</u>	2	54-82	1	Living, 1 station, also on reef-flats
<u>Cypraea surinamensis</u>	2	82-100	1	
<u>Pedicularia decussata</u>	1	100		
<u>Neosimnia intermedia</u>	1	82	2	Dead & fragment
<u>Cyphoma intermedium</u>	1	82	2	Eroded specimens
<u>Primovula carnea</u>	1	86	1	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Polinices lacteus</u>	2	28-82	1-2	Dead (drifted?)
<u>Neverita nubila</u>	5	75-218	1-2	
<u>Sinum minor</u>	1		2	
<u>Natica perlineata</u>	8	75-140	1-3	
<u>Morum dennisoni</u>	4	60-125	1-2	
<u>Cymatium poulsenii</u>	1	209		
<u>Cymatium krebssii</u>	2	25-81		
<u>Cymatium sp.</u>	2	82-125	1-2	Washed ashore elsewhere
<u>Distorsio mcgintyi</u>	8	82-164	1-5	Living, 1 station
<u>Distorsio clathrata</u>	2	82-170		
<u>Bursa finlayi</u>	1	100	9	In fish pot
■ <u>Eudolium crosseanum</u>	5	82-200	1-4	Juvenile, fragments
<u>Ficus atlanticus</u>	1	131	2	Fragments
<u>Murex cabritti</u>	1	76		
<u>Murex antillarum</u>	1	76		Living
<u>Murex beauii</u>	4	82-100	1	Living, 1 station
<u>Murex tryoni</u>	1	103		
<u>Murex caillieti</u>	5	76-125	1-2	Several, fish pots
<u>Murex pulcher</u>	4	75-125	1	
<u>Murex hystricinus</u>	2	75-164	1	Living, 1 station
<u>Murex pazi</u>	1	103		
<u>Murex hidalgoi</u>	2	76-125	1	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Murex carnicolor</u>	1	103	1	
<u>Eupleura stimpsoni</u>	3	75-164	1	Living, 1 station
<u>Boreotrophon actinophorus</u>	1	140-164	1	Living, 1 station
<u>Coralliophila deburghiae</u>	4	56-100	1-2	Living, 1 station
<u>Coralliophila deburghiae spinosa</u>	3	75-100	1-2	Living, 1 station
<u>Coralliophila juliae</u>	1			
<u>Coralliophila lintoni</u>				
<u>Anachis sp. a.</u>	1	125	1-3	
<u>Anachis sp. b.</u>	2	191-218	1	
<u>Mitrella ravenelli</u>	1	54-82	2	
<u>Mitrella sp.</u>	1	54-82	2	
<u>Psarostola sp. a.</u>	2	75-125	1	
<u>Psarostola sp. b.</u>	1	54-82	1	
<u>Nasserina bushii</u>	1	100		
<u>Nasserina grayi</u>	6	75-125	1-4	Living, 2 stations
<u>Antillophos beaufi</u>	11	73-125	1-10	Living, 2 stations
<u>Antillophos candei</u>	2	80-100		
<u>Bartschia sp.</u>	1	100	1	In fish pot
<u>Engina cf. floridana</u>	2	83-125	1	Living
<u>Nassarius scissuratus</u>	2	76-164	1	
<u>Nassarius scissuratus var. pernitidus</u>	2	100-140	1	
<u>Nassarius albus</u>	15	13-164	1-36	Living, 3 stations

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Latirus sp.</u>	1	54-82	1	
<u>Fusinus eucosmius</u>	1	73		
<u>Fusinus ceramidus</u>	8	73-125	1-2	
<u>Olivella rotunda</u>	10	82-164	1-2	
<u>Olivella watermani</u>	6	70-138	1-3	Living, 4 stations
<u>Olivella fuscocinata</u>	13	56-138	1-5	Living, 1 station
<u>Olivella thompsoni</u>	4	27-109	1-2	
<u>Olivella perplexa</u>	6	13-218	1-3	
<u>Mitra swansoni antillensis</u>	3	75-125	1-6	Living, 3 stations
<u>Mitra fulgurita</u>	4	75-154	1	Living, 1 station
<u>Mitra styria</u>	3	73-164	1	Living, 1 station
<u>Mitra floridana</u>	3	17-100	1-3	
<u>Mitra sp. a.</u>	1	100	1	Old, imperfect spec.
<u>Mitra sp. b.</u>	2	75-125	2	Living
<u>Mitra sp. c.</u>	1	100	1	Living
<u>Mitra cf. torticula</u>	1	82	1	Old, imperfect spec.
<u>Pusia hendersoni</u>	1	82-109	1	Dead, shallow water species
<u>Pusia cubana</u>	1	125	1	Shallow water spec.
<u>Pusia hanleyi</u>	1	82-109	1	Dead, shallow water species
<u>Marginella denticulata</u>	1	109-138	1	Living
<u>Marginella haematita</u>	1	94		
<u>Marginella sulcata</u>	2	104-218	1	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Speciman per station</u>	<u>Remarks</u>
<u>Marginella opalina</u>	1	100		
<u>Marginella seminula</u>	1	164-191	1	
<u>Bullata ovuliformis</u>	1	54-82	2	
<u>Persicula lavalleana</u>	2	100-191	1	Living
<u>Hyalina avenacea</u>	3	7-82	1	Shallow water form
<u>Hyalina sp.</u>	1	100	1	Old, eroded spec.
<u>Hyalina</u>	1	111	1	
<u>"Hyalina" rubella</u>	1	125	1	
<u>Conus dominicanus</u>	1	83	1	Living
<u>Conus mazel</u>	7	70-125	1	Living, 1 station
<u>Conus centurio</u>	1	60-100	1	
<u>Conus clerii</u>	6	82-131	1-2	Living, 2 stations
<u>Conus fosteri</u>	1	125	1	Juvenile specimen
<u>Conus villepini</u>	2	125-164	1	
<u>Conus bermudensis</u>	2	83	1-4	Living, 1 station
<u>Conus cf. juliae</u>	4	75-125	1-7	Living, 1 station
<u>Conus braziliensis</u>	4	100-131	1-2	Living, 1 station
<u>Conus sp. a.</u>	3	83	1-3	Living, 2 stations
<u>Conus sp. b.</u>	3	100-164	1	Living
<u>Conus sp. c.</u>	3	71-125	1-2	Living, 1 station
<u>Conus sp. d.</u>	1	131	1	
<u>Terebra taurina</u>	1		1	Depth record not given
<u>Terebra limatula</u> var. <u>acrior</u>	1	100	2	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Gemmula periscelida</u>	1	100	1	In fish pot
<u>Polystira telles</u>	6	100-138		
<u>Polystira vibex</u>				
<u>Polystira albida</u>	1	100		
<u>Aneistrosyrinx radiata</u>	7	73-164	102	Living, 2 stations
<u>Aneistrosyrinx elegans</u>	1		1	
<u>Crassispira ostrearum</u>	1	76		
<u>Crassispira alesidota</u>	1	75-100		
<u>Crassispira alesidota</u> var. <u>macilenta</u>	1	76		
<u>Compsodrillia tristicha</u>	2	153-164	1	
<u>Compsodrillia oleacina</u>	1	191-218	1	
<u>Drillia tryoni</u>	5	75-125	1-2	Living, 1 station
<u>Drillia coccinata</u>	2	76-125	1	Living
<u>"Drillia" sp. a.</u>	1	125	1	Living
<u>"Drillia" sp. b.</u>	1	125	1	
<u>"Drillia" sp. c.</u>	1	50-75	1	Living
<u>Drillia nucleata</u>	1	191-218	1	Living
<u>Cerodrillia thea</u> var. <u>carminura</u>	1	100		
<u>Syntomodrillia albicoma</u>	5	75-164	1-8	Living, 3 stations
<u>Syntomodrillia woodringi</u>	2	109-138	1	
<u>Syntomodrillia sp.</u>	1	97	1	Living
<u>Douglassia pagodula</u>	3	73-154		

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Douglassia sp. a.</u>	1	153-164	1	
<u>Douglassia sp. b.</u>	1	54-82	1	
<u>Douglassia sp. c.</u>	1	27-54	1	
<u>Douglassia sp. d.</u>	2	71-125	1	
<u>Inodrillia aepycnota</u>	2	75-125	2	
<u>"Mangelia" caribaea</u>	1	100		
<u>"Mangelia" lavalleana</u>	1	100		
<u>Mangelia sp.</u>	1			
<u>Glyphoturris quadrata</u>	1	54-82	1	
<u>Saccharoturris monocingulata</u>	1	100		
<u>Cryoturris havanensis</u>	1	164-191	1	
<u>Cryoturris filifera</u>	1	100-125	1	
* <u>Microdrillia comatotropis</u>	1	33-191	1	
<u>Tenaturris bartleti</u>	1	100		
<u>Kurtziela atrostyla</u>	1	100		
<u>Byrgocythara pharcida</u>	2	32-100		
<u>Ithycythara lanceolata</u>	1	109-138	1	Shallow water species (drifted?)
<u>Ithycythara cymella</u>	1	100		
<u>Platycythara sp.</u>	1	125	1	Living
<u>Genota viabrunnea</u>	1	180		
<u>Borsonia rouaulti</u>	2	76-103		

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Mitromorpha biplicata</u>	5	54-191	1	
<u>Daphnella morra</u>	1	54-82	1	
<u>Daphnella pompholyx</u>	1	103-164	1	
<u>Daphnella reticulosa</u>	1	76		
<u>Daphnella corbicula</u>	1	100		
<u>Daphnella sp. a.</u>	1	109-138	1	Imperfect specimen
<u>Daphnella sp. b.</u>	1	191-218	1	
<u>Pleurotomella catasarca</u>	1	200		
<u>Pleurotomella sp.</u>	1	153-164	1	
<u>Glyphostoma gabbi</u>	8	70-138	1-8	Living, 3 stations
<u>Glyphostoma sp.</u>	2	100-125	1-2	Living
<u>Lioglyphostoma sp.</u>	1	109-138	1	Living
<u>Acteon finlayi</u>	1	67	1	
<u>Acteon delicatus</u>	1	73		
<u>Acteon sp.</u>	1	54-82	1	
<u>Ringicula semistriata</u>	3	164-218	1-2	
<u>Atys sp.</u>	2		1	
<u>Retusa perplicata</u>	2	100-218	1	
<u>Retusa cf. parva</u>	1	109-138	1	
<u>Retusa sp. b.</u>	1	164-191	5	

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Rhizorus acutus</u>	2	100-138	1	
<u>Cylichna bidentata</u>	1	100		
<u>Scaphander watsoni</u>	8	54-138	1-7	
* <u>Scaphander punctostriatus</u>	1	288		
<u>Philine planata</u>	3	120-209		
<u>Philine sp.</u>	1	164-191	1	
<u>Pyramidella folini</u>	1	98		
<u>Pyramidella nitidula</u>	1	100		
<u>Melanella arcuata</u>	1	100		
<u>Eulima unifasciata</u>	1	100		
<u>Eulima elongata</u>	1	100		
<u>Eulima jamaicensis</u>	1	100		
<u>Strombiformis auricincta</u>	1	100		
<u>Leiostraca cf. fusus</u>	1			
<u>Odostomia sp. a.</u>	1	109-138	1	
<u>Odostomia sp. b.</u>	1	164-191	1	
<u>Odostomia sp. c.</u>	1	164-191	1	
<u>Odostomia sp. d.</u>	1	27-54	1	
<u>Turbonilla belothea</u>	1	100		
<u>Turbonilla interrupta var. flavocincta</u>	1	100		
<u>Turbonilla interrupta var. fulvocincta</u>	1	100		
<u>Turbonilla pusilla</u>	1	100		

CONT'D - Class Gastropoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Turbonilla sp. a.</u>	1	13-27	1	
<u>Turbonilla sp. b.</u>	1	164-191	1	
<u>Turbonilla sp. c.</u>	1			
<u>Class Amphineura</u>				
<u>Chiton sp.</u>	1	153-164	1	Living
<u>Class Scaphopoda</u>				
<u>Cadulus bushii</u>	10	27-100	1-5	
<u>Cadulus lunula</u>	1		1	
* <u>Cadulus parvus</u>	5	33-120	1-5	
<u>Cadulus mayori</u>	4	54-109	1-2	
<u>Cadulus iota</u>	1	80	1	
<u>Cadulus transitorius barbadensis</u>	2	80-100	1	
<u>Cadulus exiguus</u>	1	100	1	
<u>Cadulus obesus</u>	4	32-218	1-3	
<u>Cadulus mayori</u>	5	54-109	1-2	
<u>Cadulus bushii</u>	2	27-54	1-2	
<u>Cadulus cucurbitus</u>	1		1	Depth record lost
<u>Cadulus tersus</u>	2	33-75	1	
<u>Dentalium laqueatum</u>	5	73-164	1-20	Living, 1 station
<u>Dentalium obscurum</u>	8	54-140	1-7	Living, 1 station
<u>Dentalium cardium</u>	1	82-109	1	Fragment
<u>Dentalium gouldii</u>	2	54-164	1	

CONT'D - Class Scaphopoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Dentalium taphrium</u>	3	54-138	1-2	
* <u>Dentalium ceratum</u>	9	27-138	1-16	Living, 2 stations
* <u>Dentalium meridionale</u>	2	100-125	1	
<u>Dentalium floridense</u>	2	100-125	1	
<u>Dentalium eboreum</u>	3	54-82	1	
<u>Dentalium calamus</u>				
* <u>Dentalium callipeplum</u>	1	138-164	1	
<u>Dentalium liodon</u>	2	80	1	Dead specimen
* <u>Dentalium sowerbyi</u>	6	33-109	1-80	
<u>Dentalium ensiculus</u>	1	399	1	
<u>Dentalium didymum</u>	2	12-100	1-3	
<u>Dentalium ophiodon</u>	5	110-164	1-4	Living, 1 station
<u>Dentalium stenoschizum</u>	2	100	1-2	
<u>Class Pelecypoda</u>				
<u>Nucula crenulata</u>	9	32-218	1-2	Living, 2 stations
<u>Nuculana carpenteri</u>	2	100-164	1	Living, 1 station
<u>Nuculana vitrea cerata</u>	8		1-4	Living, 1 station
<u>Nuculana sp. a.</u>	2	104-218	2-4	
<u>Nuculana sp. b.</u>	4	109-218	1	
<u>Nuculana sp. c.</u>	4	32-191	1-2	Valves
* <u>Spinula messanensis</u>	1	100		
<u>Arca palycima</u>	1	100		

CONT'D - Class Pelecypoda

Species	No. of Stations	Depth Range (fms.)	Specimen per station	Remarks
<u>Barbatia ectocomata</u>	2	82-164	1	Living, 1 station
<u>Barbatia sp. a.</u>	7	27-31	1-2	Valves
<u>Barbatia sp. b.</u>	1	131	3	1 living & valves
* <u>Bentharca asperula</u>	8	100-218	1-3	Living, 1 station
<u>Bathyarca pectunculoides</u>	8	27-218	1-5	Valves
<u>Anadara sp. a.</u>	4	54-218	1-2	Valves
<u>Anadara sp. b.</u>	3	27-83	1-2	Valve
<u>Cucullaria sagrinata</u>	6	13-82	1-2	Living, 1 station
<u>Limopsis antillensis</u>	7	27-218	1-2	Valves
* <u>Limopsis minuta</u>	8	32-191	1-7	Living, 1 station
* <u>Limopsis cristata</u>	5	109-218	1-8	Valves
<u>Glycymeris pectinata</u>	9	54-218	1-2	Valves & complete, dead
<u>Crenella divaricata</u>	2	54-82	1	
* <u>Crenella decussata</u>	1	100		
* <u>Amigdalum sagittatum</u>	7	13-131	1-2	Living, 1 station
<u>Pteria sp.</u>	1	67	1	Living
<u>Dimys argentea</u>	10	73-218	1-3	Living, 1 station
<u>Pecten (Euvola) chazellii</u>	1	32-43	1	
<u>Chlamys multisquamatus</u>	1	27-52	1	Old valve
<u>Chlamys sp. a.</u>	1	54-82	1	Old valve
<u>Chlamys sp. b.</u>	1	27-54	1	Old valve
<u>Aequipecten linki</u>	1	34-43	1	Old valve

CONT'D - Class Pelacypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Aequipecten phrygium</u>	4	75-138	1	Old Valves
<u>Aequipecten sp.</u>	2	27-54	1	Old valves
<u>Propeamussium pourtalesianus</u>	16		1-4	Living, 2 stations
<u>Propeamussium holmesii</u>	3	100-218	1	Old valve
<u>Propeamussium reticulus</u>	10		1-2	Valves
<u>Propeamussium sayanum</u>	1	164-191	1	Valve
<u>Pseudamussium thalassinus</u>	2	54-109	1	Broken valves
* <u>Amussium dalli</u>	1	218		
<u>Spondylus sp.</u>	1	153-164	1	Valve
<u>Spondylus americanus</u>	1	54-82	1	Juvenile, valve
<u>Lima albicoma</u>	1	100		
<u>Lima scabra form tenera</u>	1	100	1	Old, eroded valve (drifted?)
<u>Lima planulata</u>	1	100		
<u>Lima lima</u>	3	54-100	1-4	Dead, old valves (drifted?)
<u>Lima sp. a.</u>	5	13-27	1-6	Living, 1 station
<u>Lima sp. b.</u>	2	50-131	1	
<u>Lima sp. c.</u>	2	27-54	1-2	Valves
<u>Limatula setifera</u>	2	54-76	1	
<u>Limatula regularis</u>	1	164-191	1	Valves
<u>Limatula nodosa</u>	1	54-82	1	Fragment
<u>Limea bronniana</u>	12	27-218	1-3	Valves
* <u>Astarte smithi</u>	8	27-218	2-23	Living, 2 stations

CONT'D - Class Pelecypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Crassinella sp.</u>	1	191-218	1	Valve
<u>Diplodonta punctata</u>	2	27-54	1-3	Valve
<u>Myrtea pristiphora</u>	4	13-164	1-2	Living, 1 station
<u>Chama lactuca</u>	7	27-131	1-3	Living, 1 station
<u>Cyamium sp.</u>	1	109-138	1	Broken valve
<u>Bornia undulata</u>	1	100	1	
<u>Bornia barbadensis</u>	1	100	1	Eroded valve
<u>Mysella barbadensis</u>	1	100	1	Left valve
<u>Laevicardium sybariticum</u>	5	27-100	1-3	
<u>Microcardium peramabile</u>	19			
<u>Microcardium tinctum</u>	2	75-76		
<u>Trigoniocardia media</u>	3	27-54	1-3	Valves (drifted?)
<u>Pitar sp.</u>	4	54-82	1-3	Valves
<u>Pitar vesica</u>	3	100-125	2	
<u>Cytherea hebraea</u>	1	100		
<u>Antigona callimorpha</u>	4	27-131	1	Valves
<u>Callista sp.</u>	1	27-54	3	Valves
<u>Gouldia cerina</u>	4	27-100	1-2	
<u>Chione cancellata</u>	1	27-54	1	Old valve (drifted)
<u>Tellina sp.</u>	1	27-54	1	Living
<u>Tellina americana Dall</u>	1	109-138	1	Valve
<u>Ervilia nitens</u>	1	7-50		
<u>Abra sp.</u>	1	27-54	1	Valve

CONT'D - Class Pelecypoda

<u>Species</u>	<u>No. of Stations</u>	<u>Depth Range (fms.)</u>	<u>Specimen per station</u>	<u>Remarks</u>
<u>Notocorbula operculata</u>	3	27-82	1	Valve
<u>Corbula dietziama</u>	3	27-100	1	Valve
<u>Corbula disparilis</u>	2	75-100		
<u>Thracia (Cyathodonta) cruziana</u>	2	27-125	1	Broken valves
<u>Bushia elegans</u>	2	54-82	1	
<u>Verticordia ornata</u>	2	54-100	1	
* <u>Verticordia woodi</u>	1	100		
* <u>Verticordia acuticostata</u>	1	100		
<u>Verticordia fischeriana</u>	4	54-138	1	
* <u>Poromya granulata</u>	4	54-100		
<u>Poromya elongata</u>	1	100		
<u>Cuspidaria microrrhina</u>	1	153-164	1	Broken valve
* <u>Cuspidaria obesa</u>	3	82-109	1	
<u>Cuspidaria lamellifera</u>	4	54-138	1-2	Valves & fragments
* <u>Neaera rostrata</u>	2	100-125	1	Valves
* <u>Neaera jeffreysi</u>	1	100	1	
<u>Leiomya granulata</u>	4	75-131	1-2	Valves
<u>Cardiomya multicosta</u>	1	153-164	1	Broken valve
* <u>Cardiomya costellata</u>	1	27-54	2	Broken valves
<u>Cardiomya perrostrata</u>	1	27-54	1	Valve



Fig. 8. The "Diadema" anchored off St. James.



Fig. 9. The writer and a guest examining the results of a dredge haul taken in 100 fathoms.

C O N C L U S I O N S

The geographic location, shape and small size of Barbados are probably of basic importance with regard to the intertidal and shallow water benthic fauna.

The east coast of Barbados receives the full force of the North Equatorial Current driven by Trade Winds across the Atlantic. This current must be basic to the pattern of currents around the island. The details of these are, however, largely unknown and therefore, the role of this current in maintaining or restricting the Barbados fauna cannot be estimated. Coming from the open ocean, however, it is very likely that it may carry towards Barbados a fauna consisting chiefly of permanent zooplankton. Both oceanic and coastal zooplankton were found in the coastal waters around Barbados by Emery (1964), and the abundance of empty shells of oceanic Pteropods in the dredge hauls taken by the Diadema, help to confirm this view.

A more effective water mass is probably the South Equatorial Current which, merging with the North Equatorial Current, flows parallel to the northern coast of South America before entering the Caribbean region. Although the centre of this current may bypass Barbados by a considerable distance due to its separation from the continental shores to the south, (300 miles). There does appear to be some northward drift of its waters (Emery, verbal communication) making possible the transportation of organisms from the South American coast to Barbados. However, only a percentage of the Barbadian fauna occurs on the latter coast and little is known about the larval behaviour of sublittoral forms in particular.

Therefore, it is impossible to assess the role of these currents in the replenishment of the molluscan populations of Barbados.

A theoretical approach to this problem was made by Emery (1964), using as a source of reference the littoral organisms discussed by Lewis (1960 a). He correlates the velocity of the current with the reproductive methods of each species, particularly those with a free-swimming larval stage and the duration of such stage, to determine a success score for each species at each station. It should be remarked here that rate of mortality and predation are among the most relevant factors controlling the relative occurrence of any species in a given station. These factors which are very difficult to measure are not discussed by Emery. However, considering the importance of the coastal fauna in the survival of the Barbadians, (Emery 1964) it can be expected that human predation on molluscs such as Cittarium pica, Strombus gigas and large Neritas, may reach a high proportion. This may explain, in part, their scarcity on the easily accessible areas.

The importance of the South Equatorial Current in the terrestrial colonization of Barbados by plants and animals is briefly discussed by Hoyos (1960). Examples of this among molluscs are the land gastropods Strophocheilus oblongus, Orthalicus subpulchellus, Pleurodonte isabella and Helicina substriata, all of South American origin. These forms probably reached the island by mechanical transport such as drift wood and floating plants, driven by currents. The possibilities that some may have been introduced by man in recent times cannot be excluded. Some littorinids and the brackish water pulmonate Melampus probably reach the island from time to time by similar means.

Basically following a westerly course, the North and South Equatorial Currents combined must tend to prevent migration to Barbados of the larvae of intertidal and shallow water organisms living on the islands to the west, the closest being St. Vincent (90 miles away). Additionally, the abyssal depths separating Barbados from these islands may act as an effective barrier for migration of the adult individuals of the organisms discussed. Excluded from these, of course, are such forms as the pelecypods Chama and Mytilus, and the wood-boring Teredo and Bankia which can reach Barbados by mechanical transport from any direction when settled on the bottom of ships that go to the island. These may release their reproductive elements in Barbadian waters.

Conclusively, the effect of the South Equatorial Current upon the intertidal and shallow water fauna of Barbados may be ecological rather than biological. The former effect is discussed in detail by Emery (1964). Therefore, the quantitative aspect of the species at each station is probably to a great extent related to the success of each species at the local level.

Notwithstanding the unfavourable zoogeographic position of Barbados, its small size and absence of certain biotopes from the intertidal and shallow shelf regions, the fauna is quite rich.

Characteristics of the Fauna

The mollusc fauna of Barbados is typically Caribbean - West Indian, and as shown by the habitual distribution tables, is composed mainly of epifaunistic types. This to a great extent must be related to the

predominance of rocky substrates at the upper bathymetric levels.

In spite of the oceanic nature of the island, there are no endemic forms in the intertidal and shallow water assemblages. A few deep-water species have so far been reported only from Barbados, but it is very likely, that they will be found elsewhere in the West Indies.

Examples of this kind are the gastropods Cypraea surinamensis, previously known from the Lower Caribbean and recently obtained by J. Moore in the Gulf of Mexico. Likewise Calliostoma bigelowi previously known from Cuban waters only was obtained by the "Diadema" during its dredging operations.

Origin of the Fauna

The origin of the Barbadian mollusc fauna is closely connected with that of the West Indies of which it has been a part for a long time. Therefore, to understand it, the history of the latter is here briefly analyzed.

The Caribbean mollusc fauna seems to have originated from an heterogeneous stock which included, among other forms, cryptogenetic genera known from Palaeozoic and Mesozoic to Recent, such as Pleurotomaria = Perotrochus, Mytilus, Bulla, Tellina, Barbatia, Ringicula, Acteon, and Conus. For geochronological records of these genera see Shimer and Shrock (1944). They probably reached the Caribbean region in Jurassic times via the central region of the "Tethys" sea, coming from the tropical (Mediterranean) region of Europe and Africa. According to Kummel (1961), the oldest dated rocks within the Caribbean are found in the Upper Jurassic of Cuba. Fossil Ammonites from these very same strata were reported by

Carlos de la Torre in 1902.

The Ammonites which were the dominant molluscs in the Jurassic period, became extinct by the end of the Cretaceous. Kummel (1961) and Davies (1934) discuss in detail the distribution of the Tethyan fauna.

In the Tertiary the Tethyan fauna was well established in the Caribbean. According to Woodring (1924) the Mollusca already had its own particular characteristic. The palaeontological records indicate that it was rich and widespread. The distribution seems to have been quite similar to that of the modern West Indian fauna as many forms intermixed with, then contemporary Caloosahatchee fauna of Florida which, although distinct, included representatives found as far south as the Lesser Antilles. For discussion of these faunas see Ihering (1907), Maury (1917) and (1924-25), Woodring (1924 and 1925-28), Dall (1895 and 1890-98), Gardner (1924-28), Davies (1934 and 1935), and several others.

During the Miocene and the Pliocene these faunas underwent rapid evolution. The appearance of many new families and genera, particularly among gastropods is discussed by Davies (1934). It seems that the instability created by seismic disturbances, volcanisms in particular, and other physical phenomena which, as pointed out by Kummel (1961) resulted in the formation of the present topography of the West Indies, must have brought about significant environmental changes. On the one hand, the emergence of the islands above the sea level created new ecological niches, particularly for supralittoral and intertidal organisms. On the other hand, the probable simultaneous formation of the submarine deeps within

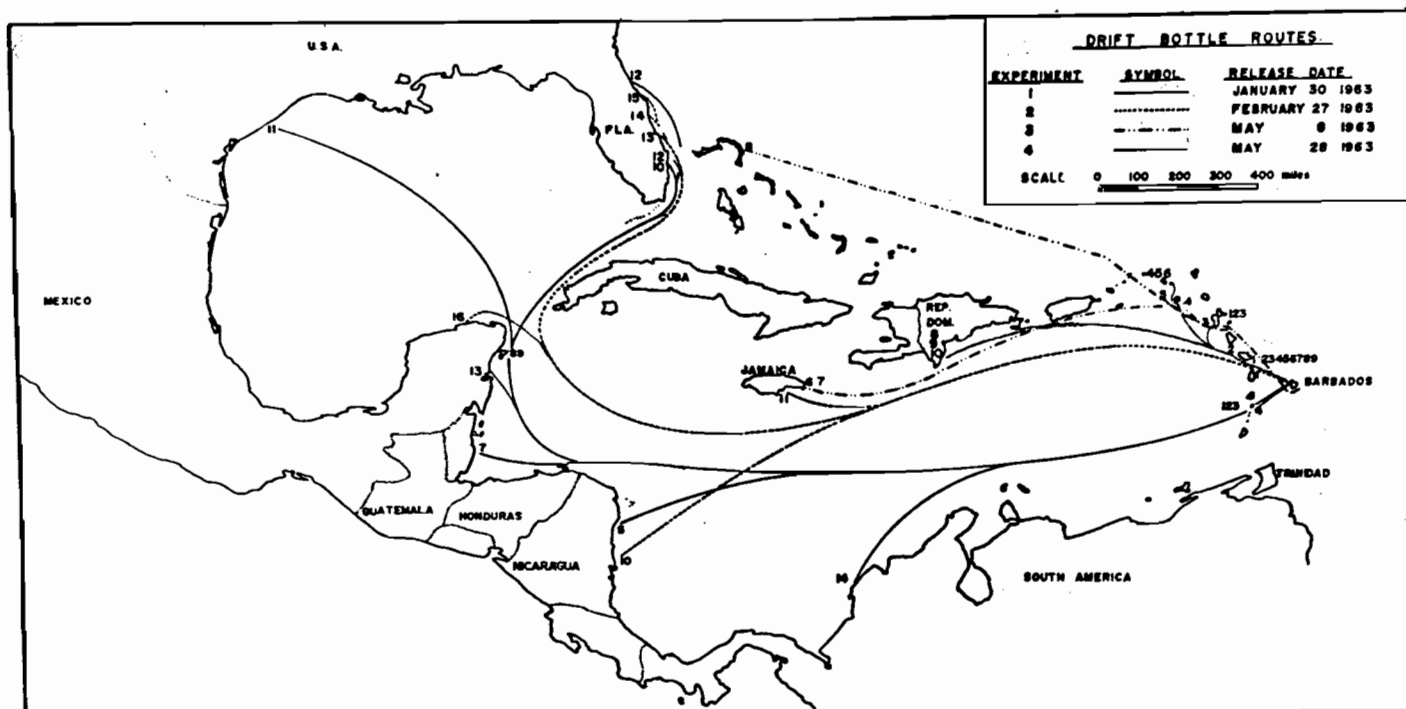
the area (Kummel 1961), probably created a deep-water refugium for shallow water forms which could not meet the changed conditions and new competition in the old environment. Relevant to this subject is the discussion on the origin of the abyssal fauna by Clarke (1962 a and b). At the same time, the gradual recession of the Cretaceous Seas from North America led to a widespread extinction, for example, in the Cretaceous of Delaware, Miocene of Maryland and Pliocene of Florida. It is significant that these fossil faunas, according to the previously mentioned workers, have their closest equivalents in the faunas of the same geologic period on the other side of the Atlantic.

The West Indian and Floridian faunas today are composed basically of descendants from the stock which evolved in the Miocene - Pliocene period, including a number of representative genera from the early Tethyan stock. Davies (1934) has indicated that the only species surviving from Mesozoic times is the gastropod Xenophora conchyliophora (Cretaceous to Recent) accepted by Dall as such, and that there are no species surviving from the Eocene while the number of Oligocene species is very small. A survey of the fossil records from Florida shows that among the species surviving from the Pliocene stock, 26 gastropods, 18 pelecypods and 3 scaphopods are presently living in Barbados, other parts of the West Indies, the Gulf of Mexico and around Florida itself. The few fossil molluscs known to me from Barbados are: Colubraria obscura, Pyrene ovulata and Tellina radiata, all of Pleistocene origin and still living in Barbados and the West Indies.

According to the geological history of Barbados, it is obvious that the terrestrial and intertidal faunal assemblages arrived on the island in post-Pleistocene times, while the sublittoral fauna may have gradually reached the island long before, being subjected to the effects of subsidence and emergence of the island. The evidence indicates that in Pleistocene times reef-conditions already existed in Barbados much the same as today. Fragments of the stony coral Acropora sp. are common on the Pleistocene cap (Lewis, 1960 b). The fossil species listed above from the island are all reef and reef-sand dwellers.

The role of the South Equatorial Current and the Gulf Stream in the distribution of intertidal and shallow water organisms along the Caribbean coasts of South and Central America, and the Gulf Stream along the eastern coast of the United States as far as Cape Hatteras, North Carolina, as well as its influence on the climate and fauna of Bermuda is well known. (Agassiz 1888, p. 117- short discussion of this subject). Graphic representation of the distribution of several shallow water forms, based on records, is shown by Abbott (1960). The discontinuous distribution of many species along the above coast is related to the lack of suitable substrate and not temperature. See Rehder (1954).

The results of the explorations by the U. S. Fish Commission steamers "Fish Hawk" and "Albatross" (1880-1883), in the off shore waters of the same coast, described by Verrill (1882 and 1885), and Verill and Bush (1898), revealed parallel distribution for several deep-water forms. Examples of this are found among members of the genera Poromya, Verticordia and Nuculana, among pelecypods and Pedicularia, Solariella, Pseudomalaxis



Map 6. - Showing courses followed by drift bottles used by A. Emery in his studies on water currents at different times of the year. (Used with the verbal permission of the author).

and Epitonium, among gastropods, as well as several dentalia and caduli among scaphopods. At least some of these probably had the same distribution in shallow water during Tertiary times, but like other shallow water forms were forced to move to deeper water. Significant in this regard is a rare Engina sp. which was dredged by the "Diadema" in 83 and 125 fathoms. This form seems very likely to be Engina floridana Olsson and Harbison, known only from one fossil specimen collected in the Pliocene beds of St. Petersburg, Florida. Similarly another fossil, Douglassia pagodula from the Caloosahatchee River area (Pliocene) of southern Florida, is also found living in depths of 50 - 175 fathoms in the West Indies and off the Florida coast.

One of the striking features of the Caribbean fauna today is its similarity to that of the West Indo-Pacific. In some cases the same species occurs in both areas. In other cases the two faunas contain very similar species, separated by minor morphological differences. This is particularly obvious in the family Cymatiidae. This similarity may be partly explained by the fact that in the early Tertiary (Upper Eocene) both areas were a part of the Tethys Sea, becoming separated when the Tethys realm broke up some time later in the same period. The fauna then, began to evolve independently. Kummel (1961) discusses this subject in detail.

A similarity also exists between the faunas of the Pacific and Atlantic sides of tropical America. The generally accepted explanation here is that prior to sometime in the Miocene the two faunas were connected through Panama and Central America. The faunal migration seems to have been

greater from the Caribbean to the Pacific side where the fauna was partly endemic. These faunas are discussed by Brown and Pilsbry (1904-13), Davies (1934), Keen (1958), Kummel (1961), Parker (1963) and others. Some forms such as Littorina ziczac seem to have crossed the Panama Canal in recent times, becoming established on the Pacific side. See Johnsonia vol. 1, no. 7, p. 17, 1943.

Presently there are several West Indian forms in which the southern range extends as far south as Argentina. It is possible that their ancestors reached that area during Tertiary times. Several other forms, particularly members of the family Volutidae, representing the subfamilies Volutinae, Zidonidae and Odonthocymbiolinae are limited to the eastern and southeastern coasts of South America, from Brazil to the Strait of Magellan, where they probably evolved. Apparently they have been prevented from entering the Caribbean region by the Brazilian Current which (evolving and diverging) from the South Equatorial Current close to Cape San Roque, Brazil (Emery, 1964) follows a southward course, parallel to the latter coasts. Two members of the Volutinae, viz. Voluta musica (Hispaniola to British Guiana) and Voluta virescens (Nicaragua south to Colombia; rare off the Florida Keys, Abbott, 1954) seem, however, to have become established on the West Indian area, having evolved from a different stock, Voluta musica in particular is, according to Davies (1934) an immigrant from Africa. In fact, he points out that over 50 species are common to West Africa and the Caribbean Province; their presence in the Caribbean being attributed to the South Equatorial Current.

There are several forms which, for unknown reasons, have remained in the Lower Caribbean and never did spread to the northern part of the West Indies. It is interesting to note that, according to Emery (1964), quoting Lewis (1962) the surface water masses near Barbados during the summer months are mainly of South Atlantic origin. It should be remarked here that a single valve of only one species Cyamium sp. possibly Cyamium atlanticum, is the only form dredged in Barbados that appears to be related to these waters.

The position of Barbados as a stock-keeping and distributional center for molluscs arriving on the island and then moving into the Lesser Antilles and other West Indian areas is discussed by Henderson (1919). The work of Emery (1964) on currents and eddies is of particular interest. He suggests that waters of the Guiana Current form strong eddies that tend to keep planktonic forms within the coastal waters of Barbados.

Much remains to be done not only at Barbados, but also in the area off the northern coast of South and Central America and the Lesser Antilles. Studies in these areas represent a small fraction of what has been done in the Gulf of Mexico, off the Florida Keys and Cuba. It is clear also that much remains to be learned about the zoogeography of the West Indian Mollusca. In this connection the ability to collect a higher proportion of living deep-water animals is very important. A more detailed knowledge of ocean currents between and in the shallow waters around the island is needed badly.

S Y S T E M A T I C S

The 761 species and subspecies surveyed are discussed in detail in the following pages. The system followed is that of Johannes Thiele, Handbuch der Systematischen Weichtierkunde (1934 - 35) with modifications.

The synonymy is not given except in some cases. It may be found, however, in the literature cited. Taxonomic notes are included when necessary for some species, while ecological data are given when known or according to the records. Those species that have been found living are specified. All others have been found dead.

The distribution, both geographic and bathymetric, is based on C. Johnson (1934), M. Smith (1941), W. J. Clench and R. D. Turner and others (in "Johnsonia" and other publications), R. T. Abbott (1954 and 1958), R. T. Abbott and G. L. Warmke (1960) and others, including the writer. The species reported from shallow water are considered as living within the low water levels (shallow shelf) and the nearshore shelf (.5 to 15 fathoms).

The abbreviations used are as follows:

(C. & B.) = Clarke and Bousfield

(L.) = Lewis

(P.) = Powell

(MCZ) = Museum of Comparative Zoology

(USNM) = United States National Museum

(ANSP) = Academy of Natural Sciences, Philadelphia

(AMNH) = American Museum of Natural History

(C.) = Conde

(E.) = Emery

The species collected by Clarke and Bousfield, and Powell are, as already explained, in the National Museum of Canada while those collected by the writer and dredged by the "Diadema" except the duplicates kept by Lewis, are in the Redpath Museum, McGill University. For that reason the names of these repositories are excluded from the records. When reference is made to records in the Carpenter Collection, they are specified.

The records of the "Eolis Junior" are the same as those of the State University of Iowa Expedition (SUIExp.), organizer of the expedition with this vessel. See Nutting (1920). The writer, however, prefers to use the name of the vessel instead of the institution, as customary in "Johnsonia" and other publications.

SYSTEMATIC ACCOUNT

CLASS GASTROPODA

SUBCLASS PROSOBRANCHIA ORDER ARCHAEOGASTROPODA

Superfamily PLEUROTOMARIACEA

Family SCISSURELLIDAE

Genus Scissurella d'Orbigny, 1823

Subgenus Schizotrochus Monterosato, 1884

Scissurella crispata Fleming, 1832

Distribution: Off Massachusetts to the Gulf of Mexico and the West Indies, in 60 to 500 fathoms.

Ecological Data: Found in sand and ooze. Rare in Barbados; uncommon in other areas.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms., dead (grab).

Scissurella alta Watson, 1886

Distribution: Florida Strait and the West Indies, in 100 to 390 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given) in 100 fms. (USNM).

Family PLEUROTOMARIIDAE

Genus Perotrochus P. Fischer, 1885

Perotrochus quoyanus (Fischer and Bernardi, 1885)

Distribution: Gulf of Mexico south to the Lesser Antilles, in 73 to 130 fathoms.

Ecological data: Found living on a bottom of sand, and gravel, sand and ooze. Rare.

Records. - Barbados: Hassler (station number not given). Off Sandy Bay, in 75 - 100 fms.; Blake, station 290, in 72 fms. (Both MCZ); 296, in 84 fms.; and off Spring Gardens, in 100 fms. (both USNM); Diadema, stations 54, in 100 fms.; and 56, in 125 fms., living (dredge).

Subgenus Entemnotrochus P. Fischer, 1885

Perotrochus adansonianus (Crosse and Fischer, 1861)

Distribution: Cuba and the Lesser Antilles, in 69 to 200 fathoms.

Ecological data: Found on stony and coral bottom. Rare.

Records. - Barbados: Blake, station 276, in 94 fms., dead (MCZ); station 291, in 200 fms., dead (USNM).

Family FISSURELLIDAE

Subfamily EMARGINULINAE

Genus Emarginula Lamarck, 1801

Emarginula tuberculosa Libassi, 1859

Distribution: Georgia south through the West Indies to Brazil, in 33 to 450 fathoms.

Ecological data: Found on sand, and on coral sand and broken shells.

Moderately uncommon. Emarginula compressa Cantraine, 1835, and

Emarginula guerney Dautzenberg and Fischer, 1896 are synonyms.

Records. - Barbados: Blake, stations 296, in 84 fms.; and 282, in 154 fms.; Diadema, stations 55, in 100 fms.; 71, in 153 - 164 fms., living (dredge); 115, in 100 fms.; 116, in 138 - 164 fms.; and 122, in 164 - 191 fms., dead (dredge).

Emarginula sicula Gray, 1825

Distribution: Western Atlantic: Florida to the Lesser Antilles, in 8 to 250 fathoms; Eastern Atlantic: Mediterranean Sea, and the west coast from the Cantabric Sea to Morocco, in 100 to 150 fathoms.

Ecological data: Not given. A rare form.

Records. - Barbados: Blake (station number not given) in 100 fms.; Eolis Junior, (station 400) off Pelican Island, in 100 fms. (USNM).

Emarginula phryxodes Dall, 1927

Distribution: Off North Carolina to the Lesser Antilles. Colon, Panama, in 12 to 1,075 fathoms.

Ecological data: Not given.

Records. - Barbados: Eolis Junior, off Carlisle Bay (station 466) in

12 fms.; and off Pelican Island (station 453) in 100 fms. (USNM).

Genus Hemitoma Swainson, 1840

Subgenus Hemitoma Swainson, 1840

Hemitoma octoradiata (Gmelin, 1791)

Distribution: Southeast Florida through the West Indies to Brazil, (Bermuda, Peile, 1926), from the surf zone to shallow depths.

Ecological data: Lives under rocks. A common reef species.

Records. - Barbados: Stations 7 (L.); 11, 16 and 37 (C. & B.); 20 and 23 (C.); 26 (P.); and 35 (E.).

Remarks: Lewis (1960) found this species breeding in August and September. It has a short pelagic life.

Subgenus Montfortia Recluz, 1843

Hemitoma emarginata de Blainville, 1825

Distribution: Lantana, Florida south to the Keys and the West Indies, in shallow water.

Ecological data: Found associated with reef-sand. Probably lives on or under rocks. Moderately rare throughout its range except at La Chorrera, Habana, Cuba, in 3 to 15 fathoms.

Records. - Barbados: Barbados (MCZ); station 38, in 5 fms., dead (C. & B.).

Genus Rimula DeFrance, 1827

Rimula frenulata Dall, 1889

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 5 to 150 fathoms.

Ecological data: Not obtained. Uncommon.

Records. - Barbados: Eolis Junior (station 490) Off Carlisle Bay, in 50 fms.; (stations 509 and 503) off Lazaretto, in 80 - 90 fms.; (station 483) 90 - 100 fms.; (station 506) off Pelican Island, in 25 - 72 fms. (all USNM).

Remarks: Duplicates from off Lazaretto are in the MCZ.

Rimula pycnomena Pilsbry, 1943

Distribution: South Florida and the West Indies, in 25 to 230 fathoms.

Ecological data: Not given.

Records. - Barbados: Eolis Junior (station 413) off Pelican Island, in 33 fms. (USNM).

Rimula aequisculpta Dall, 1927

Distribution: South Florida and the West Indies, in 80 to 100 fathoms.

Ecological data: Not given.

Records. - Barbados: Eolis Junior (stations 438 and 495) off Pelican Island, in 90 - 100 and 80 fms.; (stations 483 and 500) off Lazaretto, in 80 - 90 fms. and 75 - 80 fms. (all USNM).

Remarks: Duplicates from off Lazaretto are in the MCZ.

Genus Puncturella R. T. Lowe, 1827

Subgenus Cranopsis A. Adams, 1860

Puncturella antillana P. Farfante, 1947

Distribution: Yucatan Strait and south to Martinique, in 138 to 400 fathoms.

Ecological data: Found on stony and sandy bottom. Moderately uncommon.

Records. - Barbados: Diadema, station 71 in 153 - 164 fms., dead (dredge); in 138 - 218 fms. (L.).

Puncturella billsae P. Farfante, 1947

Distribution: Off Sand Key to Key West, Florida and south Cuba to Barbados, in 60 - 225 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms., dead (grab).

Puncturella granulata Seguenza, 1863

Distribution: Gulf of Mexico, Cuba and the Lesser Antilles, in 100 to 200 fathoms.

Ecological data: Not given. Moderately uncommon. Puncturella tuberculata Watson, 1883, and Puncturella watsoni Dall, 1889 are synonyms of this species.

Records. - Barbados: Blake (station number not given) in 100 fms.;

Eolis Junior (stations 496 and 983) off Lazaretto, in 120 and 90 - 100 fms.; off Pelican Island, in 80 - 100 fms. (all USNM).

Genus Nesta H. Adams, 1870

Nesta atlantica P. Farfante, 1947

Distribution: Palm Beach south to the Florida Keys and the West Indies, in 80 fathoms.

Ecological data: Not given.

Records. - Barbados: Eolis Junior (station 456), off Pelican Island, in 80 fms.

Remarks: This is the only representative of this genus in the Western Atlantic. The depth range in Florida is not given in Johnsonia. See vol. 2, no. 24, p. 98.

Subfamily DIODORINAE

Genus Diodora Gray, 1821

Diodora listeri (d'Orbigny, 1853)

Distribution: Bermuda and southeast Florida through the West Indies to British Guiana, in shallow water.

Ecological data: Lives under rocks. Uncommon.

Records. - Barbados: Barbados (Thiele); Barbados (MCZ); stations 11, dead (C. & B.); 29, living (P.); 22 and 23, living (C.); and 35, dead (E.).

Diodora minuta (Lamarck, 1822)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. An uncommon form frequently washed

ashore on beaches; rare in Barbados.

Records. - Barbados: One dead specimen of this species was found by the writer at station 22.

Diodora dysoni Reeve, 1850

Distribution: Florida and the West Indies, in shallow to moderate depths.

Ecological data: Lives under rocks on rocky bottoms and on hard surfaces on sandy and grassy bottoms. Frequently washed ashore in many areas; rare in Barbados.

Records. - Barbados: Barbados (T. McGinty; MCZ).

Diodora viridula (Lamarck, 1822)

Distribution: Southeast Florida and the West Indies to Brazil, in shallow water.

Ecological data: Lives on rocks. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (Carpenter Coll.); station 31, dead (E.).

Diodora sayi Dall, 1889

Distribution: Southeast Florida south to Brazil, in 12 to 95 fathoms.

Ecological data: Found on a bottom of sand and shell. Rare in Barbados; uncommon elsewhere. Reported by Dall as Fissurella alternata Say.

Records. - Barbados: Blake, station 276, in 94 fms. (still containing soft parts); (USNM); Diadema, station 90, in 54 - 82 fms., dead.

Diodora aguayoi Pérez Farfante, 1943

Distribution: Bermuda and the West Indies, in 80 to 450 fathoms.

Ecological data: Found on sand, coarse gravel and shell. Moderately uncommon.

Records. - Barbados: Hassler (station number not given) in 100 fms. (USNM); Diadema, stations 54, in 100 - 125 fms.; 57, in 131 fms.; and 69, in 120-138 fms. (all dead); in 191 - 218 fms. (L.).

Diodora fluviana Dall, 1889

Distribution: Gulf of Mexico, Cuba and the Lesser Antilles, in 27 to 805 fathoms.

Ecological data: Lives on hard bottoms. Moderately rare.

Records. - Barbados: Blake, station 272, in 76 fms., living; Diadema, stations 81, 85 and 87, in 27 - 54 fms.; 88, in 54 - 82 fms.; dead, (dredge); and 129, in 191 - 218 fms., dead (grab).

Remarks: The record of the Blake was not included in "Johnsonia".

See Vol. 1, No. 2, p. 18, 1943.

Diodora tanneri Verrill, 1883

Distribution: Delaware Bay south to Florida and the West Indies, in 100 to 399 fathoms.

Ecological data: Found on hard bottom. Rare.

Records. - Barbados: Hassler (station number not given) in 100 fms.; Blake, station 288, in 399 fms. (both MCZ).

Diodora wetmorei P. Farfante, 1944

Distribution: Southeast Florida and the West Indies, in 50 - 131 fathoms.

Ecological data: Found on coarse gravel and shell. A rare form.

Records. - Barbados: Hassler (station number not given) in 100 fms. (MCZ); Diadema, station 57, in 131 fms., dead (dredge).

Genus Lucapina Sowerby, 1835

Lucapina sowerbii Sowerby, 1835

Distribution: Lower Florida Keys south through the West Indies to Brazil, in shallow water.

Ecological data: Probably lives on or under rocks. Rare in Barbados; occasionally washed ashore elsewhere. Thiele listed this species as Lucapina adspersa Philippi, 1845.

Lucapina suffusa Reeve, 1850

Distribution: Southeast Florida, the West Indies and the Eastern coast of Central America, in shallow water.

Ecological data: Lives under rocks particularly on coral reefs. Its presence can be detected by the orange color of the mantle covering almost the entire shell. Moderately uncommon throughout its range.

Lucapina cancellata Sowerby, 1839, is a synonym.

Records. - Barbados: Stations 22 and 23, living (C.).

Lucapina philippiana Finlay, 1930

Distribution: Bahamas and south to the Lesser Antilles, in 3 feet to 60 fathoms.

Ecological data: Lives on the underside of rocks. A rare species; occasionally washed ashore.

Records. - Barbados: One specimen of this species was obtained alive in 3 ft. of water at station 22.

Subfamily FISSURELLINAE

Genus Fissurella Bruguiere, 1789

Subgenus Cremides H. and A. Adams, 1854

Fissurella nodosa Born, 1780

Distribution: Florida Keys and the West Indies.

Ecological data: Lives on rocky shores just above the high tide mark.

Moderately uncommon in Barbados; uncommon in other areas.

Records. - Barbados: Barbados (Thiele); Barbados (Carpenter Collection). Barbados (Voelker); station 26, living (P.).

Fissurella barbadensis Gmelin, 1791

Distribution: Bermuda, southeast Florida and the West Indies.

Ecological data: Lives on rocky surfaces at intertidal levels just above the surf zone, common.

Records. - Barbados: Barbados (Thiele); Barbados 12 lots (Carpenter Collection); Barbados (H. C. Kugler; MCZ); stations 1 - 7, living (L.); 18 - 21, living (C. & B.); 20 and 23, living (C.); and 34, living (E.);

Fissurella angusta Gmelin, 1791

Distribution: Lower Florida Keys and Bahamas south to the British Guiana,

from intertidal levels (Abbott 1960) to the low tide zone.

Ecological data: Lives on rocky bottoms, frequently washed ashore elsewhere. Moderately rare in Barbados.

Records. - Barbados: Station 27, dead (P.); stations 23 and 24, living (C.).

Remarks: This species should not be confused with F. barbadensis from which it differs by its smaller size, less sculptured surface and generally more depressed shell.

Fissurella rosea Gmelin, 1791

Distribution: Southeast Florida to Brazil.

Ecological data: Lives on heavily sprayed intertidal areas on rocky shores, and on rocks, on shallow rocky or sandy bottoms. Moderately uncommon in Barbados; common elsewhere.

Records. - Barbados: Barbados (MCZ); station 20, living (C.).

Fissurella cf. clenchi P. Farfante, 1944

Distribution: Barbados and along the northeast and east coasts of South America.

Ecological data: Not given. Probably occupies the same habitat as the former.

Records. - Barbados: Two beach specimen of this species were obtained by Emery at station 35.

Subgenus Clypidella Swainson, 1840

Fissurella fascicularis Lamarck, 1822

Distribution: Southeast Florida and the West Indies; in shallow water.

Ecological Data: Lives on rocky bottoms. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (AMNH).

Superfamily PATELLACEA

Family ACMAEIDAE

Genus Acmaea Eschscholtz, 1830

Subgenus Collisella Dall, 1871

Acmaea pustulata Helbling, 1779

Distribution: Bermuda southeast Florida and the West Indies.

Ecological data: Lives on or under rocks, in the surf and low-tide zones. Common.

Records. - Barbados: Barbados (Krebs); Barbados (Thiele); stations 22 and 23, living (C.); 28, dead (P.); and 35, dead (E.).

Remarks: The smaller and slender form pulcherrima, associated with Thalassia, has not been found in Barbados.

Acmaea leucopleura Gmelin, 1791

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives at intertidal levels on rocky shores. Common.

Records. - Barbados: Bathsheba (Thiele); stations 2 - 7, living (L.); 11, dead, (C. & B.); 18, 20 and 21, living (C.); and 35, dead (E.).

Acmaea antillarum Sowerby, 1831

Distribution: South Florida and the West Indies, in shallow water.

Ecological data: Lives on rocks. Moderately uncommon in Barbados; common elsewhere.

Records. - Barbados: Station 11, living (C. & B.).

Acmaea jamaicensis Gmelin, 1791

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives on rocks at intertidal levels. Moderately rare in Barbados; uncommon elsewhere.

Records. - Barbados: Stations 11, living, and 37, dead (C. & B.); station 23, dead, (C.).

Superfamily TROCHACEA

Family TROCHIDAE

Genus Euchelus Philippi, 1847

Euchelus sp.

Remarks: This is a small species measuring less than 2 mm. in length and about 1.5 mm. wide, differing in many respects from E. guttarosae.

It may prove to be a new species. Records were obtained by the Diadema at stations 76, in 13 - 27 fms.; and 89, in 54 - 82 fms.; in

138 - 164 fms. (L.).

Genus Lischkeia P. Fischer, 1879

Subgenus Calliotropis Seguenza, 1903

Lischkeia otto Philippi, 1844

Distribution: Nova Scotia to the Florida Keys and the West Indies, in 50 to 810 fathoms.

Ecological Data: Found on sand and shell. A common form.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms.; dead, (grab).

Genus Solariella Wood, 1842

(Machaeroplax Friele, 1877)

Solariella lacunella Dall, 1881

Distribution: Virginia to Key West, Fla., and Barbados, in 10 - 125 fathoms.

Ecological Data: Found on sand, and on coarse gravel and shell. A common form; rare in Barbados.

Records. - Barbados: Diadema, stations 55, in 125 fms.; and 58, in 75 - 100 fms., dead, (dredge).

Solariella lubrica Dall, 1881

Distribution: Cedar Keys, Florida and the West Indies, in 34 - 805 fathoms.

Ecological data: Found on a bottom of broken shell and Lithothamnion.

Rare.

Records. - Barbados: Diadema, station 61, in 34 - 43 fms., dead (dredge); in 50 - 100 m. = 27 - 54 fms. (L.).

Solariella clavata Watson, 1879

Distribution: Florida Strait and West Indies, in 13 - 805 fathoms.

Ecological data: Not obtained. Moderately uncommon.

Records. - Barbados: Diadema, stations 76, in 13 - 27 fms.; 92, in 54 - 82 fms.; and 122, in 164 - 191 fms., dead (grab); in 138 - 218 fms. (L.).

Solariella lamellosa Verrill and Smith, 1880

Distribution: Off Massachusetts to Key West and the West Indies, in 13 - 683 fms.

Ecological data: Found on sand, shell, ooze and gravel, etc. Common.

Records. - Barbados: Blake (station number not given) in 100 fms.; Diadema, stations 76, 84, 89, 90, 91, 92, 103, 104, 107, 116, 122, 123, 125 and 128, in 13 - 218 fms. (all dead except at station 125, in 191 - 218 fms.). All grab.

Solariella cf. lamellosa

Remarks: Several specimens of what seems to be morphological variations of the above species were obtained by the Diadema at the following stations: 76, 108, 109, 116, 118 and 129, in 13 - 218 fms. (all dead

except at station 125, in 191 - 218 fms.). All grab.

Solariella tiara Watson, 1879

Distribution: Bermuda, off Fernandina, Florida and Barbados, in 54 - 294 fms.

Ecological data: Found on sand and shell. Moderately uncommon.

Records. - Barbados: Diadema, stations 88, and 89, in 54 - 82 fms.; and 107, in 109 - 138 fms., dead (grab).

Subgenus Dentistyla Dall, 1889

Solariella asperrima Dall, 1881

Distribution: Off Cape Hatteras, North Carolina to the West Indies, in 13 - 177 fathoms.

Ecological data: Found on sandy, shelly and gravelly bottoms. Moderately uncommon.

Records. - Barbados: Blake (station number not given), in 100 fms.; stations 273 and 299, in 103 and 140 fms. and in 170 fms. (all MCZ); Diadema, stations 76, in 13 - 27 fms.; and 116, in 138 - 164 fms., dead, (grab); stations 50, in 82 fms.; and 71, in 153 - 164 fms.; dead, (dredge).

Solariella dentifera Dall, 1889

Distribution: Barbados, in 103 to 140 fathoms.

Ecological data: Found on coral and broken shells, and sand bottom. Rare.

Records. - Barbados: Blake, stations 273, in 103 fms.; and 299, in 140 fms. (USNM); Diadema, station 55, in 125 fms., dead (dredge).

Genus Microgaza Dall, 1881

Microgaza rotella Dall, 1881

Distribution: Off Cape Hatteras, North Carolina to Florida, the Gulf of Mexico and south to the Lesser Antilles, in 32 - 805 fathoms.

Ecological data: Found on coral, gravel and sand, and shell bottom.

Moderately uncommon in Barbados; common in the Gulf of Mexico.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); station 290, in 73 fms. (USNM); Diadema, stations 61, in 30 - 43 fms.; and 58, in 75 fms., dead (dredge); 106, 108, and 112, in 109 - 138 fms.; 116, in 138 - 164 fms.; 122, in 164 - 191 fms.; and 128, in 191 - 218 fms., dead (grab).

Genus Basilissa Watson, 1879

Basilissa costulata Watson, 1879

Distribution: Sand Key, Florida, Gulf of Mexico and the West Indies, in 15 - 640 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Diadema, stations 117, in 138 - 164 fms.; and 122, in 164 - 191 fms., dead (grab).

Basilissa sp.

Remarks: This is an interesting species resembling B. alta Watson, from which it differs in several details of the sculpture. Old, broken specimens were obtained by the Diadema at stations 71, 118, 120, 122,

123 and 128, in 13 to 218 fms.

Genus Seguenzia Jeffreys, 1876

Seguenzia monocingulata Seguenza, 1876

Distribution: Gulf of Maine to the Gulf of Mexico and Barbados, in 100 - 2,033 fathoms.

Ecological data: Not obtained. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake (station number not given); in 100 fms. (USNM).

Seguenzia sp.

Remarks: Two broken specimens of this tiny, undetermined form were obtained by the Diadema at station 128, in 191 - 218 fathoms.

Genus Cittarium Philippi, 1847

(Livona Gray, 1847)

Cittarium pica Linne, 1758

Distribution: Bermuda (fossil), Southeast Florida (dead), the Bahamas and south to Trinidad. It has been reported from the northern coast of South America.

Ecological data: Lives in crevices and depressions from above the surf zone to the low-tide zone. A common form.

Records. - Barbados: Barbados (Carpenter Coll.); Barbados (MCZ); stations 1 - 7, living (L.); 15, dead (C. & B.); 28, dead (P.); 18, 20 and 23, living (C.).

Remarks: Adult individuals of this species are hard to find in Barbados;

apparently the species is overfished for food and bait by natives of the island. The lot in the Carpenter collection (cat.no. 2347) consists of 16 specimens from the following localities: St. Thomas, St. Vincent, Barbados, Jamaica and Bermuda. If these data are correct, this is the first record of recent specimens found in the latter locality.

Genus Gaza Watson, 1879

Gaza superba Dall, 1889

Distribution: Gulf of Mexico and south through the West Indies to South America, in 155 - 324 fathoms.

Ecological data: Found in mud, sand and ooze, and in sandy ooze.

Moderately uncommon.

Records. - Barbados: Blake, station 274, in 209 fms. (MCZ); station 275, in 218 fms.; station 281, in 288 fms. (both USNM).

Subgenus Callogaza Dall, 1881

Gaza watsoni Dall, 1881

Distribution: Yucatan Strait and northern Cuba south to Brazil, in 84 - 640 fathoms.

Ecological data: Found on coral, sand and broken shell, and hard bottoms.

Moderately uncommon.

Records. - Barbados: Blake, stations 273, in 103 fms. (MCZ); 282, in 154 fms.; and 296, in 84 fms. (USNM); Diadema, station 55, in 125 fms., dead (dredge).

Genus Tegula Lesson, 1832

Tegula excavata (Lamarck, 1822)

Distribution: Cuba and south to the Lesser Antilles, 1 ft. to about 1 fm.

Ecological data: Lives under rocks on rocky bottoms; gregarious. Uncommon.

Records. - Barbados: Bathsheba (Thiele) Barbados (MCZ); stations 1 - 7, living (L.); station 15, dead (C. & B.); station 27, living (P.).

Tegula fasciata Born, 1878

Distribution: Florida Keys and the West Indies, in 1 ft. to possibly 15 fms.

Ecological data: Lives in a variety of habitats such as under rocks (on rocky bottoms), on silt covered rocks or on *Thalassia* (on sandy bottoms), and in shallow grassy hypersaline areas. A common form living under rocks in Barbados. Listed by Krebs as Trochus fasciatus and by Thiele as Chlorostoma fasciata, both are synonyms.

Records. - Barbados: Barbados (Krebs); Barbados (Thiele); Barbados (MCZ); station 29, dead (P.); stations 18, 22 and 23 (C.).

Tegula maculostriata (C. B. Adams, 1845)

Distribution: The West Indies, from the intertidal to the low-tide zone.

Ecological data: Lives exclusively under rocks; gregarious. Uncommon.

Records. - Barbados: Bathsheba (MCZ); stations 11, dead (C. & B.); 18 and 22, living (C.); 29, living (P.); and 31, dead (E.).

Genus Calliostoma Swainson, 1840

Calliostoma roseolum Dall, 1881

Distribution: Off North Carolina to the Gulf of Mexico and south to the Lesser Antilles, in 10 - 175 fathoms.

Ecological data: Found on sand and shell, and in gravel, sand and ooze. Uncommon. Calliostoma apicinum Dall, 1881 is a synonym.

Records. - Barbados: Blake (station number not given) in 100 fms.; station 290, in 73 fms.; Diadema, stations 49, in 100 fms.; 54, in 100 - 125 fms.; 55, in 125 fms.; 58, in 75 - 100 fms.; 59 in 70 - 80 fms.; 64, in 67 fms.; 65, in 71 fms.; and 69, in 120 - 138 fms.; all dead (dredge).

Subgenus Elmerlinia Clench and Turner, 1960

Calliostoma javanicum (Lamarck, 1822)

Distribution: Southern Florida, the Bahamas and south through the West Indies to Panama, in shallow water.

Ecological data: Found on sand, and on reef sand. Occasionally washed ashore in some areas; uncommon at La Chorrera, Habana, Cuba; rare in Barbados.

Records. - Barbados: Barbados (MCZ); Barbados (Col. Voelker); Diadema, stations 51, in 82 fms. (fragment).

Subgenus Kombologion Clench and Turner, 1960

Calliostoma marionae Dall, 1906

Distribution: Off St. Augustine, Florida to the Gulf of Mexico and Barbados, in 15 - 90 fathoms.

Ecological data: Found on sand and broken shell.

Records. - Barbados: Diadema, stations 61, in 32 - 43 fms., dead (dredge); and 96, in 54 - 82 fms. (dead, grab).

Remarks: The following species, together with several others in the Western Atlantic, have not been placed under subgeneric position because of lack of information on their anatomical and radular characters.

Calliostoma sapidum Dall, 1881

Distribution: Gulf of Mexico south to the Lesser Antilles, in 66 to 805 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Eolis Junior, off Barbados, in 80 fms.; and off Pelican Island, in 100 fms. (both USNM).

Calliostoma echinatum Dall, 1881

Distribution: Habana, Cuba and Barbados, in 54 to 82 fathoms.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Diadema, station 88, in 54 - 82 fms., dead (grab).

Calliostoma sarcodum Dall, 1927

Distribution: The Bahamas and south through the West Indies to the Lesser Antilles, in shallow water.

Ecological data: Found on sand and reef sand. Moderately uncommon at Habana, Cuba; rare in Barbados. Calliostoma jaumei Clench and Aguayo, 1946 in a synonym.

Records. - Barbados: Off Sam Lord's Castle, in 4 - 6 fms. (USNM).

Calliostoma aurora Dall, 1889

Distribution: Near the coasts of Grenada and Barbados, Lesser Antilles, in 140 - 575 fathoms.

Ecological data: Found on a bottom of coral and corallines. An extremely rare form.

Records. - Barbados: Blake, station 299, in 140 fms. (USNM).

Calliostoma bigelowi Clench and Aguayo, 1938

Distribution: North and south of Cuba and Barbados, in 75 - 230 fathoms.

Ecological data: Found on gravel, sand and ooze, and coarse gravel and shell; a rare form.

Records. - Barbados: Diadema, stations 54, in 100 - 125 fms.; and 58, in 75 - 100 fms., both basal fragments (dredge).

Remarks: Our records extend considerably the southern range of this species.

Family TURBINIDAE

Subfamily LIOTIINAE

Genus Liotia Gray, 1847

Liotia bairdi Dall, 1889

Distribution: Off North Carolina to Key West and south to the Lesser Antilles, in 15 - 805 fathoms.

Ecological data: Found on coarse sand and gravel, and sand and broken shell. Moderately rare in Barbados; uncommon elsewhere.

Records. - Barbados: Diadema, stations 64, in 67 fms.; (dredge); and 85,

in 27 - 54 fms.; both dead (grab).

Liotia miniata Dall, 1889

Distribution: Florida Strait and the West Indies, in shallow water.

Ecological data: Not given.

Records. - Barbados: Eolis Junior, (station number not given) in 15 fms. (MCZ).

Genus Arene H. and A. Adams, 1854

Arene variabilis Dall, 1889

Distribution: Off North Carolina to the Gulf of Mexico and the West Indies, in 20 - 270 fathoms.

Ecological data: Lives on rocky and gravelly bottoms. Moderately uncommon in Barbados; common elsewhere.

Records. - Barbados: Blake, (station number not given) in 100 fms.; stations 296 and 300, in 82 and 84 fms. (all MCZ); Diadema, stations 71, in 153 - 164 fms.; living; 109, and 112, in 109 - 136 fms., living; 116, in 138 - 164 fms., dead; and 122, in 164 - 191 fms., dead (all grab).

Arene variabilis var. microforia Dall, 1889

Distribution: Florida Strait, Cuba and Barbados, in 27 - 170 fms.

Ecological data: Found on sand, and in grey ooze. Rare.

Records. - Barbados: Blake, station 273, in 103 fms. (MCZ); Diadema, station 81, in 27 - 54 fms.; dead (grab).

Arene tricarinata Stearns, 1872

Distribution: North Carolina to the Gulf of Mexico and the West Indies;
in 3 - 22 fathoms.

Ecological data: Lives under rocks. Moderately rare in Barbados;
uncommon elsewhere.

Remarks: This species is found as fossil in the Pliocene of St. Petersburg,
Florida.

Arene bryareus Dall, 1881

Distribution: Florida Strait, Cuba and Barbados, in 27 - 480 fathoms.

Ecological data: Found on sand bottom (living) and coarse sand and
shell, and hard bottoms. Rare.

Records. - Barbados: Blake, station 272, in 76 fms. (USNM).

Arene bryareus var. perforata Dall, 1889

Distribution: Florida Strait and Barbados, in 80 to 480 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Arene cruentata (Muhlfeld, 1829)

Distribution: Florida Keys and the West Indies in shallow water.

Ecological data: Lives on the underside of rocks; a reef dweller.

Rare in Barbados; uncommon elsewhere. Liottia radiata Kien, is a synonym.

Records. - Barbados: Barbados (MCZ).

Genus Cyclostrema Marryat, 1818

Cyclostrema amabile Dall, 1889

Distribution: The West Indies, in 25 to 120 fathoms.

Ecological data: Dwells on rocky bottoms. Rare.

Records. - Barbados: Eolis Junior (station number not given). Off Needham Point, in 25 - 40 fms.; and off Telegraph Station, in 30 - 70 fms. (USNM).

Subfamily TURBININAE

Genus Turbo Linné, 1758

Subgenus Marmorostoma Swainson, 1829

Turbo castanea Gmelin, 1791

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms as epibenthic on Thalassia and other seaweeds. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (MCZ).

Subgenus Halopsephus Rehder, 1943

Turbo haraldi Robertson, 1957

Distribution: Bahamas and Barbados, in shallow water to 50 fathoms.

Ecological data: Found on sandy and stony bottom. Rare.

Records. - Barbados: Eolis Junior, off Lazaretto, in shallow water; off Paynes Bay, in 50 fms.; (USNM); Diadema, stations 83 and 85, in 27 - 54 fathoms.

Genus Astraea Roding, 1798

Subgenus Calcar Montfort, 1810

Astraea tecta Solander, 1786

Distribution: The West Indies, in shallow water.

Ecological data: Lives on rocky bottoms. Rare in Barbados; uncommon elsewhere. Astraea imbricata Gmelin, 1791 is a synonym.

Records. - Barbados: Barbados (MCZ).

Subgenus Lithopoma Gray, 1850

Astraea caelata Gmelin, 1791

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives in crevices and depressions on rocky shores in the surf and low-tide zone. A common form; uncommon in Barbados.

Records. - Barbados: Station 2, living (L.); Barbados (Voelker); stations 15, dead (C. & B.); and 20, living (C.); St. James, Barbados (MCZ).

Astraea tuber (Linné, 1758)

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives in the same habitat as the former species. Common.

Listed by Thiele as Astridium tuber L. a synonym.

Records. - Barbados: Barbados (Thiele); stations 11, living; and 29, dead (C. & B.); 20, 23 and 24, living (C.); Barbados (MCZ).

Remarks: Large individuals of this species are rare in Barbados; it is possible that they are used for food or bait by the natives of the island.

Subgenus Astralium Link, 1807

Astraea phoebia Roding, 1798

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sand, reef-sand, and on muddy bottoms.

Moderately uncommon.

Records. - Barbados: Barbados (Rawson, in Arango); Barbados (Col. Voelker); station 41, in 40 ft., living, mud (E.).

Remarks: This form is found as fossil in the Pliocene of Florida.

Genus Homalopoma Carpenter, 1864

(Leptothyra Pease, 1869)

Leptothyra linnei Dall, 1889

Distribution: Florida Strait and the West Indies, in 100 - 805 fathoms.

Ecological data: Found on rocky bottom. A rare form.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, station 122 in 164 - 191 fms., dead (dredge).

Family PHASIANELLIDAE

Subfamily TRICOLIINAE

Genus Tricolia Risso, 1826

Subgenus Tricolia Risso, 1826

Tricolia tessellata (Potiez and Michaud, 1838)

Distribution: Greater Antilles south to Trinidad and west along the Caribbean coast of South America to Panama, in shallow water.

Ecological data: Lives on Thalassia and other seaweeds. Uncommon.

Records. - Barbados: Bathsheba (MCZ, USNM); Barbados (ANSP, AMNH, LSJU, CNHM).

Tricolia bella (M. Smith, 1937)

Distribution: Lake Worth, Florida south through the Keys and the West Indies to Brazil, in shallow water.

Ecological data: Occupies the same habitat as the former. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (MCZ).

Tricolia adamsi (Philippi, 1853)

Distribution: The West Indies from the Bahamas south through the Lesser Antilles and the Caribbean coast of Honduras and Panama, in shallow water.

Ecological data: Same as the former. A common species.

Records. - Barbados: Bathsheba (MCZ); Barbados (USNM, ANSP); Carlisle Bay. (USNM).

Tricolia affinis beaui Robertson, 1958

Distribution: The Lesser Antilles from Antigua to Tobago, in shallow water.

Ecological data: Same as the former.

Records. - Barbados: Bathsheba (Mrs. F. G. Kellett) (MCZ).

Tricolia thalassicola Robertson, 1958

Distribution: North Carolina to the Gulf of Mexico and the West Indies south to Brazil, in shallow water.

Ecological data: Same as the former species. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Station 11, dead (C. & B.).

Superfamily NERITACEA

Family NERITIDAE

Subfamily NERITINAE

Genus Nerita Linné, 1758

Nerita peloronta Linné, 1758

Distribution: Bermuda and southeast Florida to the Lesser Antilles.

Ecological data: Lives on rocky shores in splash pools at the lower levels of the supralittoral zone. Moderately gregarious; common.

Records. - Barbados: Barbados (H. Krebs); stations 1 - 7 (L.); 10, (C. & B.); 18, 21 and 24 (C.). All living; station 33, dead (E.); Barbados (S. of Light House); and Barbados (both MCZ).

Remarks: Large individuals of this species are rare in Barbados, except below the high cliffs to the west of River Bay where human access is quite difficult. On easily accessible areas the natives collect them for bait and obviously take away the larger ones.

Nerita versicolor Gmelin, 1791

Distribution: Bermuda and southeast Florida to the Lesser Antilles.

Ecological data: Co-exists with the former species. It is probably also used for food or bait by natives.

Records. - Barbados: Barbados (J. Thiele); stations 1 - 7 (L.); 10, living and 14, dead (C. & B.); 18, 21 and 24 (C.); station 27 (P.).

Nerita tessellata Gmelin, 1791

Distribution: Bermuda, Florida to Texas and the West Indies.

Ecological data: Lives just above the surf zone on rocky surfaces.

Extremely gregarious. Juvenile individuals are found under rocks where water is trapped at low tide. When adult, however, they move to the outer surface of the rocks; apparently at this stage they become less dependent on water. A very common form.

Records. - Barbados: Barbados (Thiele); stations 1 - 7 (L.); 10, 15 and 17 (C. & B.); 18, 19 and 24 (C.); 26 and 27 (P.). All living; Barbados (S. of Light House); and Barbados (both MCZ).

Genus Puperita Gray, 1857

Subgenus Puperita Gray, 1857

Puperita pupa Linné, 1767

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives in water filled pot holes on rocky shores just above the surf zone. An extremely gregarious form. Uncommon.

Records. - Barbados: Stations 7 (L.); 10 and 11, living; and 13 and 17, dead (C. & B.); Barbados (MCZ).

Genus Neritina Lamarck, 1816

Subgenus Vitta Morch, 1852

Neritina virginea Linné, 1758

Distribution: Bermuda, Florida to Texas and the West Indies.

Ecological data: Lives on sandy and muddy bottoms in estuarine regions, and in shallow subtidal levels in the sea. Common.

Records. - Barbados: Stations 11 (C. & B.); and 18 (C). Both living.

Neritina cf. clenchi Russell, 1940

Distribution: Florida, Central America and the Antilles.

Ecological data: Lives on sandy to muddy bottoms from brackish to fresh water. A common form. Rare in Barbados.

Records. - Barbados: A dead, eroded beach specimen of what seems to be this species was obtained by A. Emery at station 45.

Subfamily SMARAGDIINAE

Genus Smaragdia Issel, 1869

Smaragdia viridis viridimaris Maury, 1917

Distribution: Bermuda, southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on Thalassia and other seaweed. The green color of this form may well be protective as it blends with that of the plant on which it lives. A common form; occasionally washed ashore in Barbados.

Records. - Barbados: Barbados (Carpenter Coll.); Bathsheba, and Barbados (both MCZ).

Remarks: Henderson (1919) reported this form as abundant on the shore between Eastern and Needland Points.

Family COCULINIDAE

Genus Cocculina Dall, 1881

Cocculina rathbuni Dall, 1881

Distribution: Off Martha's Vineyard, North Carolina and the Lesser Antilles, in 100 - 616 fathoms.

Ecological data: Found in sand and ooze, and on hard bottoms. Lives attached to solid objects. Rare.

Records. - Barbados: Blake, station 288, in 399 fms. (MCZ).

Cocculina beanii Dall, 1881

Distribution: Off Rhode Island to the West Indies, in 100 - 583 fathoms.

Ecological data: Found in sand and ooze, and on hard bottoms. Lives attached to solid surfaces. A rare species.

Records. - Barbados: Blake, station 288, in 399 fathoms.

Cocculina sp.

Records. - Barbados: Three living specimens of this undetermined species were obtained by the Diadema at station 57, in 131 fathoms (dredge).

They were attached to a fragment of bamboo peel on a bottom of coarse ground, sand and ooze.

Order MESOGASTROPODA

Superfamily LITTORINACEA

Family LITTORINIDAE

Genus Littorina Ferussac, 1822

Subgenus Melaranghe Menke, 1828

Littorina ziczac Gmelin, 1791

Distribution: Bermuda, Florida to Texas, the West Indies to Trinidad and Caribbean coast of Central America south to Uruguay. Pacific coast, near Panama city.

Ecological data: Lives on rocky shores at intertidal and supralittoral levels (pink and weather zones on Barbados). A common species.

Records. - Barbados: Barbados (Chemnitz and Lamarck; in Krebs); Bathsheba (Thiele); Barbados, 2 lots (MCZ); stations 1 - 7 (L.); 10 and 14 (C. & B.); 18, 20, 21 and 23 (C.) 11 living.

Remarks: This form reproduces during November and December. The eggs are laid in capsules and the larvae takes about three weeks to hatch. (Lewis, 1960).

The species L. nebulosa and L. angulifera have so far not been found in Barbados. They are associated with mangrove flats and salty to brackish water conditions in shallow, protected areas. The range of both these species extends as far south as the north and eastern coast of South America. In the original description of L. angulifera two localities were involved, Jamaica and Barbados. It is more likely that all the specimens were from the former locality. See Johnsonia, Vol. 1, No. 7, p. 24.

Subgenus Neritrema Recluz, 1869

Littorina meleagris Potiez and Michaud, 1838

Distribution: Southern Florida and the West Indies.

Ecological data: Lives on rocks at intertidal levels. (Inner edge of beach rock platform in Barbados). Common.

Records. - Barbados: Station 6 and 7, Lewis; and 11, (C. & B.).

Remarks: This species reproduces in November and December (Lewis 1960 a).

Genus Nodilittorina von Martens, 1897

Subgenus Echinolittorina Habe, 1950

Nodilittorina tuberculata (Menke, 1828)

Distribution: Bermuda, southern Florida, Bahamas, the West Indies and the Caribbean Coast of Central America.

Ecological data: Lives on rocky shores at low and high supralittoral levels. (Green and Weather Zones on Barbados). Common. Listed by Thiele as Tectarius trochiformis, a synonym.

Records. - Barbados: Bathsheba (J. Thiele); Barbados (3 lots; MCZ); stations 1 - 7 (L.); 10, 14 and 17 (C. & B.); 18, 20 and 21 (C.). All living. Station 3, dead (E.).

Remarks: This species reproduces throughout the year. The eggs are released in capsules and the larvae hatch within 3 days. (Lewis, 1960).

Genus Tectarius Valenciennes, 1833

Subgenus Cenchritis Martens, 1900

Tectarius muricatus Linné, 1758

Distribution: Bermuda, southern Florida, the West Indies and the Caribbean coast of Central America.

Ecological data: Lives on rocky shores at high supralittoral levels (Weather Zone on Barbados). Common.

Records. - Barbados: Barbados, 3 lots (MCZ); stations 1 - 7 (L.); 18 and 21 (C.). All living; stations 33, dead (E.).

Remarks: This species reproduces from mid-June till August. Individual eggs are laid in capsules and develop to a swimming larva within 24 hours. (Lewis, 1960).

Superfamily RISSOACEA

Family HYDROBIIDAE

Genus Truncatella Risso, 1826

Truncatella pulchella Pfeiffer, 1839

Distribution: Northeast Florida to Tampa, the Florida Keys and the West Indies to Trinidad.

Ecological data: Lives under rocks and beach drift above tide line.

A common form; rare in Barbados.

Records. - Barbados: Barbados (MCZ).

Truncatella pulchella form bilabiata (Pfeiffer, 1840

Distribution: Sarasota, Florida south through the West Indies to Trinidad.

Ecological data: Occupies the same habitat as the former species. A common form; rare in Barbados.

Records. - Barbados: Stations 17, dead (C. & B.).

Truncatella caribbaeensis Reeve, 1842

Distribution: Caribbean.

Ecological data: Occupies the same type of habitat as the former species.

Records. - Barbados: Bathsheba (Thiele).

Remarks: This form is considered a synonym of T. pulchella by Clanch

and Turner (1948), however, Abbott (1960 lists both as separate species and T. bilabiata as a form of T. pulchella. The writer has followed here Abbott's classification.

Family RISSOIDAE

Subfamily RISSOINAE

Genus Rissoina d'Orbigny, 1840

Subgenus Rissoina d'Orbigny, 1840

Rissoina multicosta C. B. Adams, 1850

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms, probably as epibenthic on Thalassia and other plants.

Records. - Barbados: Diadema, stations 76, in 13 - 27 fms.; and 122, in 164 - 191 fms., both dead (dredge).

Rissoina bryerea Montagu, 1803

Distribution: South Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms, probably as epibenthic on Thalassia and other algae. A common form; uncommon in Barbados.

Records. - Barbados: Dead specimens of this species were obtained at stations 11 and 17 (C. & B.); and 23 (C.).

Subgenus Schwartziella Nevill, 1884

Rissoina chesnelli Michaud, 1830

Distribution: North Carolina to Florida and the West Indies, in shallow water. A common form; rare in Barbados.

Ecological data: Lives like the former species.

Records. - Barbados: Blake, (station number not given) in 100 fms., dead.

Subgenus Zebinella Morch, 1876

Rissoina decussata (Montagu, 1803)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Lives like the former species. A common form rare in Barbados. Listed by Dall as R. albida C. B. Adams, which is a synonym.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Subgenus Phosinella Morch, 1876

Rissoina cancellata Philippi, 1847

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Occupies the same habitat as the former species. A common form; probably uncommon in Barbados.

Records. - Barbados: Stations 11 (C. & B.); and 23 (C.) both dead.

Genus Zebina H. and A. Adams, 1854

Zebina browniana (d'Orbigny, 1842)

Geographical range: Southeast U.S. and the West Indies, in shallow water.

Ecological data: Found in reef sand and on sandy and grassy bottoms. Rare in Barbados; common in beach drifts elsewhere. Listed by Dall as R. laevigata C. B. Adams, which is a synonym. Records. - Barbados: Blake, (station number not given) in 100 fms., dead.

Genus Rissoa Freminville, 1814

Rissoa xanthias var. acuticostata Dall, 1889

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico, Cuba and Barbados, in 32 to 683 fathoms.

Ecological data: Not given for Barbados; found in sand, and in mud elsewhere. Uncommon.

Records. - Barbados: Blake, (station number not given) in 100 fms. (USNM).

Rissoa sp. a.

Five dead specimens of this undetermined form were obtained by the Diadema at station 122, in 164 - 191 fathoms (grab).

Rissoa sp. b.

This form may be a variant of the former species. Five dead specimens were obtained by the Diadema at stations 123, 125, 128 and 129, in 191 to 218 fathoms (grab).

Family VITRINELLIDAE

Genus Vitrinella C. B. Adams, 1850

Vitrinella sp.

One dead specimen of this species was obtained by the Diadema at station 122, in 164 - 191 fathoms (grab).

Genus Teinostoma H. and A. Adams, 1854

Teinostoma solida (Dall, 1889)

Distribution: Off Georgia south to the Florida Keys and the West Indies, 27 to 440 fathoms.

Ecological data: Found on sand, sand and shell, and in mud. Uncommon.

Records. - Barbados: Diadema, stations 79, in 27 - 54 fms.; and 116, in 138 - 164 fms. both dead.

Teinostoma sp.

Dead specimens of this undetermined species were obtained by the Diadema at stations 71, 118, 122, 123 and 128, in 138 - 218 fathoms. All dead.

Genus Pseudomalaxis P. Fischer, 1885

Pseudomalaxis nobilis (Verrill, 1885)

Distribution: Off Chesapeake Bay south to the Lesser Antilles, in 27 - 292 fathoms.

Ecological data: Found on sandy bottom. Rare.

Records. - Barbados: Blake, station 273, in 103 fms.; *Diadema*, station 80, in 27 - 54 fms. (grab).

Superfamily CERITHIACEA

Family TURRITELLIDAE

Genus Turritella Lamarck, 1799

Turritella variegata (Linné, 1758)

Distribution: West Indies, in shallow water.

Ecological data: Found on sandy bottoms. A common species; rare in Barbados.

Records. - Barbados: Barbados (F. G. Kellett; MCZ).

Genus Vermicularia Lamarck, 1799

Vermicularia spirata (Philippi, 1836)

Distribution: Florida to the Lesser Antilles, in shallow water.

Ecological data: Lives embedded in sponges. Rare in Barbados; common elsewhere.

Records. - Barbados: Station 37, in 20 ft.; dead (C. & B.).

Family ARCHITECTONICIDAE

Genus Heliacus d'Orbigny, 1842

Heliacus cylindricus (Gmelin, 1791)

Distribution: Lower Florida Keys to the Gulf of Mexico and the West Indies,

in shallow water.

Ecological data: Lives under rocks. Uncommon.

Records. - Barbados: Barbados (E. M. Howland; F. G. Kellett; MCZ); station 11, dead (C. & B.); station 20, dead; and 23, living (C.).

Remarks: Living individuals of this species are rare on the reef flats at Barbados, but shells occupied by hermit crabs are commonly found together with those of Nitidella laevigata and other small forms.

Heliacus clenchi Merrill (unpublished)

Distribution: West Indies.

Ecological data: Found on rock, and sand bottom.

Records. - Barbados: Eolis Junior (station 3) off Pelican Island, in 75 - 80 fms.; off Telegraph Station (station 79), in 30 - 70 fms. (USNM).

Heliacus turneri Merrill (unpublished)

Distribution: Not recorded. Probably the West Indies.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms.; dead (grab); in 27 - 54 fms. (L.).

Genus Architectonica Roding, 1798

Architectonica nobilis Roding, 1798

Distribution: North Carolina to the Lesser Antilles, in shallow water.

Ecological data: Lives on sandy bottoms. Moderately uncommon.

A. granulata Lamarck, 1816 is a synonym.

Records. - Barbados: Barbados (F. G. Kellett, MCZ); Barbados (Voelker).

Architectonica peracuta (Dall, 1889)

Distribution: Southeast Florida to the Lesser Antilles, in 43 to 138 fathoms.

Ecological data: Obtained in coarse coral sand and broken shells, and in grey ooze. Moderately uncommon.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ); station 290, in 73 fms. (USNM); Diadema, stations 49, in 100 fms.; and 69, in 120 - 138 fms.; dead (dredge).

Family VERMETIDAE

Genus Vermetus 'Adanson' Daudin, 1800

Vermetus ? exsertus (Dall, 1881)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 31 - 1002 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Genus Petalochonchus H. C. Lea, 1843

Subgenus Macrophragma Carpenter, 1856

Petalochonchus irregularis (d'Orbigny, 1842)

Distribution: Southern Florida to the Lesser Antilles.

Ecological data: Lives attached to rocks at intertidal levels. A common form; abundant in Barbados. (Pink Zone).

Remarks: Lewis (1960 a) pointed out that this species is a highly adapted intertidal form. It breeds throughout the year and is partly ovoviviparous.

Petalococonchus cf. varians d'Orbigny, 1843

Distribution: Southern Florida to Brazil.

Ecological data: Lives on rocky shores at low intertidal levels. Common.

Records. - Barbados: Stations 1 - 7 (L.).

Remarks: This is an ovoviviparous form in which the larval stage is exclusively pelagic. (Lewis, 1960).

Petalococonchus erectus Dall, 1888

Distribution: Southeast Florida and the West Indies, in 37 - 805 fathoms.

Ecological data: Found on sand, shell and sponge bottom. A sessile form on solid substances.

Records. - Barbados: Blake, station 300, in 82 fms. (USNM); station 290, in 73 fms.; and in 100 fms. all dead, (MCZ); Diadema, stations 52 and 90, in 54 - 82 fms., dead.

Family SILIQUARIIDAE

Genus Siliquaria Bruguiere, 1789

Siliquaria squamata Blainville, 1827

Distribution: Southeast Florida to the Gulf of Mexico and the West Indies, in 54 to 163 fathoms.

Ecological data: Lives embedded in horny sponges, occupying almost all the space available for the poriferan. It is probably a parasite on the latter. Common.

Records. - Barbados: Blake, (station number not given) in 100 fms. (USNM); station 292, in 56 fms.; station 272, in 76 fms.; Hassler (station number not given) in 100 fms., all dead (MCZ); Diadema, stations 55, in 125 fms., living; and 58, in 75 - 100 fms., dead (dredge); 88, 89 and 90, in 54 - 82 fms., dead (grab).

Siliquaria modesta Dall, 1881

Distribution: Gulf of Mexico, Florida Strait and the West Indies, in 27 - 169 fathoms.

Ecological data: This species occupies the same habitat as the former. Uncommon.

Records. - Barbados: Blake, (station number not given) in 100 fms.; station 276, in 94 fms. (MCZ); Diadema, stations 81 and 84, in 27 - 54 fms., dead (grab).

Family CAECIDAE

Genus Caecum Fleming, 1813

Subgenus Micranellum Bartsch, 1813

Caecum pulchellum Stimpson, 1851

Distribution: New Hampshire to the Lesser Antilles in 1 - 52 fathoms.

Ecological data: Lives on seaweed. Commonly found dead in sand.

Records. - Barbados: Stations 22 and 23, dead (C.).

Remarks: The New Hampshire record is dubious. (See Johnson, 1934).

Family PLANAXIDAE

Genus Planaxis Lamarck, 1822

Planaxis lineatus (Da Costa, 1778)

Distribution: Lower Florida Keys and the West Indies.

Ecological data: Lives at low intertidal levels on rocky shores, in water filled pockets and depressions under rocks. It is extremely gregarious and is very abundant wherever it occurs.

Records. - Barbados: Bathsheba (Thiele); Barbados (F. G. Kellet; MCZ); stations 2, 3 and 7 living (L); 11, living, and 17, dead (C. & B.); 18, living (C.); and 28, dead (P.).

Planaxis nucleus (Bruguère, 1789)

Distribution: Southeast Florida and the West Indies.

Ecological data: Co-exists with the former species and is also found below the low-water line where it moves about on sandy bottom. Common.

Records. - Barbados: Barbados (Gov. Rawson; in Arango); Barbados (E. G. Kellett, MCZ); stations 1 - 7 (L.); 12 and 14 (C. & B.); 18 (C.); 27 and 28 (.). All living except at station 28.

Remarks: Though co-existing, this species is not so abundant as the former. Both are ovoviviparous. The former breeds from May to the end of June, and the latter from April to the end of June. See Lewis (1960 a).

Family MODULIDAE

Genus Modulus Gray, 1842

Modulus modulus (Linné, 1758)

Distribution: Florida to Texas and the West Indies, in shallow water.

Ecological data: Lives on Thalassia and other seaweed particularly in shallow, protected areas, also on silt-covered rocks. A common species; rare in Barbados.

Records. - Barbados: Station 11, (C. & B.); Barbados (MCZ); station 35 (E.). All beach specimens.

Modulus carchedonius Lamarck, 1892

Distribution: Greater Antilles south to the northern coast of South America, in shallow to moderate depths.

Ecological data: Probably occupies the same habitats as the former species.

Records. - Barbados: The only record of this species for Barbados is given by Lamarck (1822) in reference to Chemnitz (1788). Based on these data, Abbott (1944) selected Barbados as the type locality for this species. The above record may be dubious. (See Johnsonia Vol. 1, No. 14, p. 5).

Family POTAMIDIDAE

Subfamily BATILLARIINAE

Genus Batillaria Benson, 1842

Batillaria minima Gmelin, 1791

Distribution: Southern Florida, Gulf of Mexico, the West Indies and Caribbean coast of Central and South America.

Ecological data: Lives on rocks at low intertidal levels, particularly in shallow sandy and muddy bays and inlets. Extremely gregarious.

Records. - Barbados: Barbados, beach specimens (F. G. Kellett, MCZ).

Remarks: J. C. Bequaert (1942) did not include the above record in "Johnsonia". He mentions, however, that records of this species for the island have been published. These may possibly refer to Cerithium variable with which it has been confused frequently. The latter form is found in similar habitats and is common at River Bay, but all the individuals are occupied by hermit crabs. Both species can reach the island by mechanical transport, on floating objects, but may not find suitable conditions to survive.

Other representatives of this family, members of the genus Cerithidea have not been reported from Barbados.

Family CERITHIIDAE

Genus Cerithium Bruguière, 1789

Cerithium variable C. B. Adams, 1845

Distribution: Southern Florida to Texas and the West Indies.

Ecological data: Lives on low rocky shores at intertidal levels, particularly in shallow sandy and muddy bays. A gregarious form. Common.

Records. - Barbados: Stations 17, (C. & B.); 18 (C.); and 35 (E.). All occupied by hermit crabs. See remarks for the former species.

Cerithium litteratum (Born, 1778)

Distribution: Bermuda, Southern Florida and the West Indies, from the intertidal zone to shallow depths.

Ecological data: Lives on rocky and sandy bottoms. A common form, occasionally washed ashore in Barbados.

Records. - Barbados: Barbados (Thiele); station 23 (C.).

Cerithium eburneum Bruguière, 1792

Distribution: Southeast Florida, Gulf of Mexico and the West Indies, from the intertidal zone to shallow depths.

Ecological data: Lives on rocky and on sandy bottoms, sometimes epibenthic on Thalassia. Common in shallow, protected areas. Occasionally washed ashore on Barbados.

Records. - Barbados: Barbados (Krebs); Barbados (Thiele); stations 11 and 37 (C. & B.); 22 and 23 (C.); 34 (E.). All dead.

Remarks: It seems that there are two ecological forms within this species.

(1) The light, thin form found in shallow, sandy and grassy bottoms, and epibenthic on Thalassia; and (2) the heavier form with prominent varices found associated with rocky bottoms and frequently referred to as

C. Algicola C. B. Adams, which is an entirely different species. Thiele's record of the latter form was probably in error for the former.

Cerithium sp.

Remarks: An old eroded specimen of this undetermined species, measuring 5.5 mm was obtained by the Diadema at station 78, in 13 - 27 fms. (grab).

Subfamily CERITHIOPSINAE

Genus Alaba H. and A. Adams, 1853

Alaba incerta (d'Orbigny, 1842)

Distribution: Bermuda, southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on grassy bottoms; epibenthic on Thalassia and other seaweeds. A common form; rare in Barbados. Alaba tervaricosa C. B. Adams, is this species.

Records. - Barbados: Station 12, dead (C. & B.).

Genus Cerithiopsis Forbes and Hanley, 1851

Cerithiopsis emersoni (C. B. Adams, 1838)

Distribution: Massachusetts south to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: This species possibly lives in the same ecological conditions as the former. Cerithiopsis subulatum Montagu is this species. A rare form in Barbados, uncommon elsewhere.

Records. - Barbados: Diadema, station 81, in 27 - 54 fms., dead (grab), station 37, in 20 ft., dead (C. & B.).

Cerithiopsis greeni C. B. Adams, 1839

Distribution: Cape Cod south to Florida and the West Indies, in shallow water.

Ecological data: Found in shallow grassy areas probably living as

epibenthic on Thalassia and other plants; also on rubble bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Station 23, dead (C.).

Cerithiopsis matara Dall, 1889

Distribution: Known only from Barbados.

Ecological data: Not given. Rare.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Remarks: Dall found two specimens mixed with the common form

Cerithiopsis crystallinum.

Cerithiopsis scontium Dall, 1889

Distribution: Known only from Barbados.

Ecological data: Not given. Rare.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Cerithiopsis crystallinum Dall, 1881

Distribution: Florida Keys, Gulf of Mexico, and the West Indies, in 50 - 805 fathoms.

Ecological data: Lives on sand, coral, shell and gravelly bottoms. Common.

Records. - Barbados: Blake, station 290, in 73 fms.; Barbados (station number not given) in 100 - 103 fms. (MCZ); Diadema, stations 49 and 50, in 100 fms.; 52, in 82 fms.; 54, in 100 - 125 fms.; 58, in 75 - 100 fms.; 59, in 70 - 80 fms.; 61, in 32 - 43 fms. (dredge); stations 103, in 82 - 109 fms.; 106, in 109 - 138 fms. (grab).

Cerithiopsis abruptum Watson, 1880

Distribution: Off North Carolina and the West Indies; Europe, in
15 - 100 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Blake, (station number not given) in 100 fms. (USNM).

Cerithiopsis sp. a.

Remarks: One dead specimen of this undetermined minute species was
obtained by the Diadema at station 83, in 27 - 54 fms., (grab).

Cerithiopsis sp. b.

Remarks: One dead specimen of a minute species was obtained by the
Diadema at station 122, in 164 - 191 fms., (grab).

Genus Seila, A. Adams, 1861

Seila adamsi (H. C. Lea, 1845)

Distribution: Massachusetts to Florida, Texas and the West Indies, in
shallow water.

Ecological data: Found in shallow, sandy and grassy bottoms, and on
shell and rubble banks. Possibly lives as epibenthic on Thalassia and
other marine plants. An uncommon form; rare in Barbados.

Records. - Barbados: Station 11, dead (C. & B.); station 23, dead (C.);
station 37, dead (E.).

Family MATHILDIDAE

Genus Mathilda Semper, 1865

Subgenus Fimbriatella Sacco, 1895

Mathilda barbadensis Dall, 1889

Distribution: Barbados, Grand Cayman and Puerto Rico, in shallow water to 100 fms.

Ecological data: Not given. Found in beach drift (Abbott, 1958). A rare species.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Family TRIPHORIDAE

Genus Triphora Blainville, 1828

Triphora melanura C. B. Adams, 1850

Distribution: Greater and Lesser Antilles, in 1 - 82 fathoms.

Ecological data: Found on sandy and gravelly bottom. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Diadema, stations 83, in 27 - 54 fms.; and 89, in 54 - 82 fms., both dead (grab).

Triphora decorata C. B. Adams, 1850

Distribution: Bermuda, southeast Florida and the West Indies, in 1 - 54 fms.

Ecological data: Found on sand, rubble, and on grassy bottoms. It possibly lives as epibenthic on seaweeds. Rare in Barbados; uncommon

elsewhere.

Records. - Barbados: Diadema, station 79, in 27 - 54 fms., dead (grab).

Triphora ornata Deshayes, 1832

Distribution: Florida, and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms. Rare in Barbados.

Uncommon in beach drift on other islands.

Records. - Barbados: Station 37, in 20 ft., living (C. & B.).

Triphora turris-thomae (Holten, 1802)

Distribution: The West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms; uncommon.

Records. - Barbados: Station 37, in 20 ft., living (C. & B.).

Triphora intermedia C. B. Adams, 1850

Distribution: The West Indies, in shallow water.

Ecological data: Occupies the same habitat as the former species. A common form; rare in Barbados. Reported by Dall (1889) as Triforis triserialis var. intermedia.

Records. - Barbados: Blake, (station number not given) in 100 fms.

Triphora nigrocincta C. B. Adams, 1839

Distribution: Massachusetts to Florida, Texas and the West Indies, in shallow water.

Ecological data: Lives associated with grassy bottoms. A common shallow water form; rare in Barbados. Reported by Dall (1889) as Triphoris

perverse var. nigrocincta.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ).

Remarks: The presence of this form as well as the former in deep water, may be adventitious.

Triphora sp. a.

Remarks: One dead specimen of this undetermined species was obtained by the Diadema at station 88, in 54 - 82 fms.

Triphora sp. b.

Remarks: One dead specimen of this undetermined species was obtained by the Diadema at station 81, in 27 - 54 fms. This and the above species are minute shells. They were compared with those illustrated and described by Dall and C. B. Adams, and they do not agree. This family and the subfamily Cerithiopsinae have many representatives in the deep waters of the Gulf of Mexico and other areas of the West Indies. A revision of the two groups is badly needed.

Superfamily EPITONIACEA

Family JANTHINIDAE

Genus Janthina Roding, 1798

Subgenus Janthina Roding, 1798

Janthina janthina Linné, 1758

Distribution: Warm waters.

Ecological data: A common pelagic form. Listed by Thiele as Janthina

communis Lamarck, which is a synonym.

Records. - Barbados: Bathsheba (Thiele); stations 16, dead (C. & B.); and 36, dead (E.); all in beach drift.

Subgenus Violetta Iredale, 1929

Janthina globosa Swainson, 1822

Distribution: Warm waters.

Ecological data: A pelagic form. Uncommon.

Records. - Barbados: A juvenile individual of this form was obtained by the Diadema in the grab, samples at station 103, in 82 - 109 fms.

Family EPITONIIDAE

Genus Sthenorytis Conrad, 1862

Sthenorytis pernobilis (Fischer & Bernardi, 1862)

Distribution: Off North Carolina to Florida and the West Indies, in 73 - 805 fathoms.

Ecological data: Found on sand and shell; coarse sand and shell, and hard bottom. Rare.

Records. - Barbados: Blake, station 290, in 73 fms.; Eolis Junior (station and depth not given) (see Henderson notes; both USNM); Diadema, station 130, in 100 fms., dead (in fish pot).

Remarks: One of the specimens obtained by the Diadema is the largest one ever recorded. It measures almost 2 inches in length in spite of

the fact, that the nuclear whorls are missing and the reflected sub-labial lamina-like rib is broken at the anterior end. One and one half inches was the largest size previously recorded for this species.

S. epae Bartsch, 1940, S. cubana Bartsch, 1940 and S. hendersoni Bartsch, 1940, and S. belaurita Dall, 1889 are synonyms of this form.

Genus Opalia H. and A. Adams, 1853

Subgenus Dentiscala de Boury, 1886

Opalia crenata Linné, 1758

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Found on sand and reef-sand. Rare in Barbados; moderately uncommon in other areas.

Records. - Barbados: Barbados (MCZ); station 25, dead, (C.).

Remarks: Live specimens of this species are frequently washed upon the beach at Camacho, near Camarioca, Matanza, Cuba. The animal secretes a fluid which sometimes stains the shell.

Subgenus Nodiscala de Boury, 1889

Opalia pumilio var. morchiana (Dall, 1889)

Distribution: North Carolina to Florida and the West Indies, in 14 to 119 fathoms.

Ecological data: Not given. Moderately uncommon.

Records. - Barbados: Hassler (station number not given) in 100 fms.

(USNM); Eolis Junior, off Pelican Island, in 80 - 90 fms.; off Lazaretto,

in 94 fms. (USNM).

Opalia eolis Clench and Turner, 1950

Distribution: Off Palm Beach, Florida south to Barbados, in 25 to 94 fms.

Ecological data: Not given. Rare in Barbados.

Records. - Barbados: Eolis Junior, off Pelican Island, in 75 fms.; and off Lazaretto, in 94 fms. (both USNM).

Genus Amaea H. and A. Adams, 1853

Subgenus Fernimoscala Dall, 1908

Amaea retifera (Dall, 1889)

Distribution: North Carolina to Florida, the Gulf of Mexico and the West Indies, in 13 to 120 fathoms.

Ecological data: Not given. Moderately rare.

Records. - Barbados: Eolis Junior, off Telegraph station in 30 fms.; and off Lazaretto, in 94 fms. (both USNM).

Genus Epitonium Roding 1798

Subgenus Cycloscala Dall, 1889

Epitonium echinaticostum (d'Orbigny, 1842)

Distribution: Bermuda, and Florida to the Gulf of Mexico and the West Indies, in 1 - 200 fathoms.

Ecological data: Not given. A common species; rare in Barbados.

Records. - Barbados: Barbados (probably a beach specimen) (USNM).

Subgenus Epitonium Roding, 1798

Epitonium krebsii (Morch, 1874)

Distribution: Bermuda, southeast Florida to the Gulf of Mexico and the West Indies, in 7 - 150 fathoms.

Ecological data: Not given. An uncommon species; rare in Barbados.

Records. - Barbados: Eolis Junior, off Pelican Island, in 100 fms. (USNM).

Epitonium occidentale (Nyst, 1871)

Distribution: Bermuda and Southern Florida to the Lesser Antilles, in 61 - 150 fms.

Ecological data: Not obtained. Rare in Barbados; uncommon elsewhere.

Reported by Krebs as Scalaria tanuis Sow., 1844, which is a synonym.

Records. - Barbados: Barbados (Krebs), Bartsch (MCZ); Barbados (USNM).

Epitonium albidum (d'Orbigny, 1842)

Distribution: Western Atlantic; Bermuda and Southern Florida, Eastern Atlantic; West coast of Africa, probably with the latitude of the Cape Verde Islands south to the Gold Coast (see Johnsonia); in shallow water to 65 fathoms.

Ecological data: Not obtained. A common species.

Records. - Barbados: Barbados (USNM); Bathsheba (MCZ); both beach specimens.

Epitonium venosum (Sowerby, 1844)

Distribution: Isle of Pine, South Cuba, Jamaica and the Virgin Islands,

south to Venezuela, in shallow water.

Ecological data: Not obtained. A moderately rare species.

Records. - Barbados: Barbados (MCZ; UNSM).

Epitonium folisceicostum (d'Orbigny, 1842)

Distribution: Lake Worth, Florida, south to the Gulf of Mexico and the West Indies, in shallow water to 120 fathoms.

Ecological data: Not given. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Epitonium unifasciatum (Sowerby, 1844)

Distribution: South Florida, and the West Indies in shallow water.

Ecological data: Not given. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados, 2 lots (MCZ).

Subgenus Gyroscala de Boury, 1887

Epitonium lamellosum (Lamarck, 1822)

Distribution: Western Atlantic; Bermuda, Lake Worth, Florida, to the Gulf of Mexico and the West Indies; Eastern Atlantic, Atlantic Coast of France, Western Mediterranean, and the coast of Africa south to Liberia and the Gold Coast (see Johnsonia Vol. 2, No. 30, p. 283). Shallow water to probably 33 fathoms.

Ecological data: Lives on sandy and rocky bottoms. A common shallow

water species; occasionally washed ashore in Barbados.

Records. - Barbados: Bathsheba 1 lot; Barbados, 3 lots (both F. G. Kellett, MCZ); Barbados (F. G. Kellett, USNM).

Subgenus Asperiscala de Boury, 1909

Epitonium candeanum (d'Orbigny, 1842)

Distribution: Bermuda, Florida and the West Indies, in shallow water to 400 fathoms.

Ecological data: Not given. Moderately rare.

Records. - Barbados: Eolis Junior (station numbers not given); off Barbados, in 94 fms.; off Pelican Island, in 33 - 80 fms.; and off Telegraph Station, in 18 fms. (all USNM).

Epitonium novangliae (Couthony, 1838)

Distribution: From Massachusetts (adventitious) south to the Gulf of Mexico and the West Indies to Brazil, in shallow water to 300 fathoms.

Ecological data: Found on sand, shell and gravelly bottom. Moderately uncommon.

Records. - Barbados: Blake (station number not given in 100 fms. (MCZ); Diadema, station 108, in 109 - 136 fms. (dead, broken).

Epitonium pourtalesii (Verrill and Smith, 1880)

Distribution: Off New Jersey south to the Gulf of Mexico and the West Indies, in 43 to 600 fathoms.

Ecological data: Not given. Rare in Barbados. Moderately uncommon elsewhere.

Records. - Barbados: Eolis Junior (station number and depth not given), off Lazaretto (USNM).

Genus Depressiscala de Boury, 1909

Depressiscala nitidella (Dall, 1889)

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 3 to 117 fathoms.

Ecological data: Not given. An uncommon form; rare in Barbados.

Records. - Barbados: Bathsheba, probably beach specimen (MCZ).

Genus Cylindriscala de Boury, 1909

Cylindriscala andrewsii (Verrill, 1882)

Distribution: Off Central New Jersey south to Cuba and Barbados, in 85 to 500 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: One dead, imperfect specimen of this species was obtained by the Diadema at station 128, in 191 - 218 fms.

Remarks: Our record extends considerably the southern range of this species.

Superfamily AGLOSSA

Family ACLIDIDAE

Genus Aclis Lovén, 1846

Aclis lata Dall, 1889

Distribution: Off Fernandina, Florida south to the West Indies, in 100 to 440 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Blake (station number not given) in 100 fms. (USNM).

Family EULIMIDAE

Genus Balcis Leach, 1847

Balcis intermedia (Cantraine, 1835)

Distribution: New Jersey to the Gulf of Mexico, in shallow water to 191 fathoms.

Ecological data: Lives ectoparasitically on the holothurian, Holothuria impatiens, see Abbott (1960). A common form.

Records. - Barbados: Diadema, stations 112, in 109 - 138 fms.; and 120 and 122, in 164 - 191 fms.

Genus Eulina Risso, 1826

Eulina elongata Bucquoy, Dollfuss and Dautzenberg, 1883

Distribution: North Carolina to the Florida Keys and the West Indies, in 22 to 100 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Eulina arcuata C. B. Adams, 1850

Distribution: North Carolina to the Gulf of Mexico and the West Indies, from shallow water to 100 fathoms.

Ecological data: Not given. This may also be an ectoparasite.

Records. - Barbados: Blake (station number not given) in 100 fms. (MCZ).

Eulima auricincta (Abbott, 1958)

Distribution: North Carolina to Florida and the West Indies, in 6 ft. to 100 fathoms.

Ecological data: Found on sandy bottom.

Records. - Barbados: Blake (station number not given) in 100 fms. (MCZ).

Remarks: Dall (1889) listed this form as Eulima acuta Sowerby, 1834 which is from the Pacific side of Central America. See Abbott (1958, p. 107).

Genus Leiostraca H. and A. Adams, 1853

Leiostraca cf. fusus Dall, 1889

Remarks: One old, imperfect specimen of what seems to be the above species was obtained by the Diadema at station 128, in 191 - 218 fms. The former species is found from off Fernandina, Florida to the Gulf of Mexico and the West Indies, in 294 - 640 fms.

Genus Niso Risso, 1826

Niso interrupta Sowerby, 1834

Distribution: Florida Strait to the Gulf of Mexico and the West Indies in 11 to 180 fathoms.

Ecological data: Lives on sand and shell bottom. Moderately uncommon.

Records. - Barbados: Blake, (station number not given) in 100 fms. (MCZ);

Diadema, stations 51, in 82 fms.; 55, in 125 fms., living 58, in 75 - 100 fms; and 72, in 180 fms. (dredge).

Remarks: Dall (1889) recognized several subspecific forms in this species. These were based on geographically segregated forms varying in the color and number of whorls. However, the appearance of more material, will probably show intergrades so that they will only be recognized as varieties only. The records by the Diadema from 82 and 180 fms. are the brown-banded var. circinata while the others refer to the var. albida which Dall assigned to the Gulf of Mexico and West America.

Family STILIFERIDAE

Genus Stilifer Broderip, 1832

Stilifer subulatus Broderip and Sowerby, 1832

Distribution: West Indies, in shallow water.

Ecological data: Found on sand. Probably an extoparasite.

Records. - Barbados: Station 37, in 20 ft., dead (C. & B.).

Superfamily HIPPONICACEA

Family HIPPONICIDAE

Genus Cheilea Modeer, 1793

Cheilea equestris Linné, 1758

Distribution: North Carolina to Texas and the West Indies, in shallow water to moderate depths.

Ecological data: Lives attached to solid substances; common.

Records. - Barbados: Barbados (Rawson; in Arango); Blake, station 273 in 103 fms.; and in 100 fms. (MCZ); Barbados (E. M. Howland) Barbados (F. G. Kellett); Barbados (W. N. Southern Coll.) (all MCZ); Diadema, station 57, in 131 fms., dead (dredge); Barbados (Voelker).

Remarks: This species has been dredged by the Blake in 805 fms. Its presence in deep-water obviously is adventitious. Listed by Arango (1878) under the genus Calyptraea, and by Dall (1889) under Mitrularia.

Genus Hipponix DeFrance, 1819

Hipponix subrufus subrufus Lamarck, 1822

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives attached to rocks. Moderately rare.

Records. - Barbados: Two dead, beach specimens were obtained by Emery at station 34.

Hipponix antiquatus Linné, 1767

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on rocks or attached to other shells. Listed by Thiele as Amalthea antiquata.

Records. - Barbados: (Thiele); station 17 (shore), and 37, in 20 ft. (C. & B.); station 22 and 23 (C.); station 34 (E.); Barbados (C. M. Pomerat); Barbados (F. G. Kellett) (both MCZ).

Superfamily CALYPTRAEACEA

Family CAPULIDAE

Genus Capulus Montfort, 1810

Subgenus Krebsia Morch, 1877

Capulus intortus Lamarck, 1822

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on rocks and possibly attached to solid objects on sandy bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (Krebs); Barbados (C. M. Pomerat; MCZ); station 37, in 20 ft., dead (C. & B.).

Subgenus Hyalorisia Dall, 1889

Capulus galea Dall, 1889

Distribution: Known only from Barbados, in 218 fathoms.

Ecological data: Obtained on sandy bottom, but like other co-generic forms, it must be of epifaunistic habits.

Records. - Barbados: Blake, station 275, in 218 fms. (USNM).

Family CALYPTRAEIDAE

Genus Crucibulum Schumacher, 1817

Crucibulum auricula (Gmelin, 1791)

Distribution: West Florida and the West Indies, in shallow water.

Ecological data: Lives attached to solid substances such as shells, rocks, etc. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (krebs).

Genus Crepidula Lamarck, 1799

Crepidula convexa Say, 1822

Distribution: Eastern U. S. and the West Indies, in shallow water.

Ecological data: Lives attached like the former species. A common form.

Records. - Barbados: Barbados (Lamarck; in Krebs).

Remarks: Crepidula fornicata Say, was the actual record given by Lamarck, however, since such a species is not found in the West Indies, Lamarck very likely referred to the species listed here.

Crepidula aculeata Gmelin, 1791

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives attached to shells, stones and other solid substances. A common form. Rare in Barbados.

Records. - Barbados: Barbados (E. M. Howland; MCZ).

Superfamily STROMBACEA

Family XENOPHORIDAE

Genus Xenophora G. Fischer, 1807

Subgenus Xenophora G. Fischer, 1807

Xenophora conchyliophora (Born, 1780)

Distribution: North Carolina to the Gulf of Mexico and the West Indies; from shallow water to 250 fathoms.

Ecological data: This is a sand dweller. Rare in Barbados; very common off shore in the Gulf of Mexico.

Records. - Barbados: Diadema, station 84, in 27 - 54 fms.; dead (grab).

Xenophora caribaea Petit, 1856

Distribution: Off Cuba and south through the West Indies to the Lesser Antilles, in 84 to 300 fathoms.

Ecological data: Lives on sand, shell and gravel bottoms. Common off shore in the Gulf of Mexico and in Barbados, particularly between 75 to 100 fms. where the bottom debris contains many of its shell fragments.

Records. - Barbados: Blake, station 300 and 293, in 82 fms.; and in 100 fms. (MCZ); Diadema, stations 49, in 100 fms.; dead; 54, in 100 - 125 fms., living; 55, in 125 fms., dead; 71, in 163 - 164 fms., (all dredge).

Xenophora longleyi Bartsch, 1931

Distribution: Off Tortugas south to the Lesser Antilles, in 82 to 450 fathoms.

Ecological data: Found on a bottom of fine sand and ooze. Moderately rare.

Records. - Barbados: Blake, station 274, in 209 fms.; station 300, in 82 fms. (MCZ).

Family STROMBIDAE

Genus Strombus Linné, 1758

Strombus raninus Gmelin, 1791

Distribution: Southeast Florida, and the West Indies south to Colombia, South America, in shallow water.

Ecological data: Lives on sand, reef sand, and grassy bottoms; occasionally under rocks. A common species; rare in Barbados.

Records. - Barbados: Barbados (Krebs); Barbados (Gov. Rawson; Carp. Coll.); Barbados (Col. Voelker); station 41, dead (E.); all beach specimens.

Strombus pujilis Linné, 1758

Distribution: Southeast Florida, the West Indies and Central America, south to southern Brazil, in shallow water.

Ecological data: Occupies the same habitat as the former species, except that it has never been found under rocks. A common form; rare in Barbados.

Records. - Barbados: Barbados (Carpenter Coll.); station 35, dead (E.); station 37, in 20 ft., dead (C. & B.).

Strombus gallus Linné, 1758

Distribution: Southeast Florida, the West Indies and south to Bahia, Brazil, in shallow to moderate depths.

Ecological data: Found on muddy sand, and reef sand. A rare species throughout its range.

Records. - Barbados: Barbados (Voelker); Barbados (MCZ).

Strombus costatus Gmelin, 1791

Distribution: Florida, the West Indies and Central America south to Brazil, in shallow water.

Ecological data: Lives on muddy sand, and reef-sand. Rare in Barbados. Uncommon elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Strombus gigas Linné, 1758

Distribution: Bermuda, southeast Florida and the West Indies to northern South America, in shallow water.

Ecological data: Lives on sandy and grassy bottoms. Common.

Records. - Barbados: Pelican Island (MCZ); station 15, dead; and 40, in 50 ft., living (C. & B.); station 35, dead (E.); station 23, dead (C.).

Remarks: This species appears to be relatively rare in Barbados, but I believe its scarcity has resulted from the species being over-fished. It is well known by natives throughout the West Indies as a source of food and bait. Their shells are for sale as souvenirs in the market at Bridgetown, and I was told that these are imported from other islands.

Superfamily CYPRAEACEA

Family ERATOIDAE

Subfamily TRIVIINAE

Genus Trivia Broderip, 1837

Trivia suffusa (Gray, 1832)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms; also on reef sand.
Common.

Records. - Barbados: Barbados (Carpenter Coll.); Barbados (Krebs);
Barbados (Col. Voelker); station 35, dead (E.).

Remarks: This species is present in the Caloosahatchee (Pliocene) fauna
of Florida.

Trivia quadipunctata (Gray, 1827)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives in the same habitats as the former species.

Common.

Records. - Barbados: Barbados (Gov. Rawson); Barbados (collector's
name not given; both Carpenter Coll.); Barbados (W. M. Brand); Blake,
(station number not given) in 100 fms. (both MCZ); station 35, dead (E.).

Trivia pediculus Linné, 1758

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy areas, and under rocks on
rocky bottoms. A common species, commonly washed ashore in Barbados;
rare on reef-flats.

Records. - Barbados: Barbados (Gov. Rawson); Barbados (collector's name
not given; both Carpenter Coll.); Barbados (Krebs); station 23, in 1 ft.,
living (C.); station 26, dead (P.); station 35, dead (E.).

Remarks: This species is found as fossil in the Caloosahatchee marl of
southern Florida, and Pliocene clays of Costa Rica (Dall, 1889).

Trivia entillarum Schilder, 1922

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on muddy sand, and reef-sand. Moderately rare throughout its range. Listed by Krebs as Trivia subrostrata Gray, a synonym.

Records. - Barbados: Barbados (Krebs); Barbados (collector's name not given; Carpenter Coll.); Diadema, station 90, in 54 - 82 fms., dead.

Trivia leucosphaera Schilder, 1931

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 3 to 138 fathoms.

Ecological data: Found on a bottom of sand, shell and gravel. Moderately uncommon, listed by Dall (1889) as Trivia globosa Gray, 1832, a synonym.

Records. - Barbados: Barbados (Carpenter Coll.); Blake, station 276, in 94 fms. (MCZ); Diadema, stations 51, in 82 fms.; 64, in 67 fms. (both dead, dredge); 88 and 92, in 54 - 82 fms.; and 110, in 109 - 138 fms., all dead, (grab).

Trivia nix Schilder, 1922

Distribution: Southeast Florida and the West Indies, in shallow to moderate depths.

Ecological data: Lives associated with reef and reef sand; found also on sand and shell bottoms. Moderately uncommon. Listed by Dall (1889) as Trivia nivea Gray, a synonym.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ); Diadema, station 55, in 125 fms.; dead; station 35, dead (E.).

Trivia candidula Gaskoin, 1835

Distribution: North Carolina to Southeast Florida and the West Indies, in 25 to 119 fathoms.

Ecological data: Not obtained. Moderately rare.

Records. - Barbados: Blake (station number not given) in 100 fms. (MCZ).

Remarks: All the members of the Trivinae seem to be inhabitants of shallow to moderate depths. Those obtained dead in deep water may be drifted specimens.

Family CYPRAEIDAE

Genus Cypraea Linné, 1758

Subgenus Trona Jousseaume, 1884

Cypraea zebra Linné, 1758

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on mangrove roots and under rocks. Uncommon in Cuba and some of the Florida Keys. Rare in Barbados.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (Col. Voelker); Barbados (MCZ); station 35 (E.). All beach specimens.

Remarks: The record in the Carpenter Collection consists of a mixed lot with C. cervus from Jamaica. While the specimens collected by Emery and Col. Voelker refer to the light-orange form vallei (a synonym) which is found associated with reef and reef-sand. The latter form is uncommon in 3 - 15 fms. at La Chorrera, Habana, Cuba.

Subgenus Luria Jousseaume, 1884

Cypraea cinerea Gmelin, 1791

Distribution: Southeast Florida and the West Indies, from shallow water to 82 fathoms.

Ecological data: Lives under rocks on rocky bottoms. Uncommon.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (Thiele); Blake, station 278, in 69 fms.; and off Barbados (no depth, no station number given) (MCZ); Oistins Bay (MCZ); Diadema, stations 58, in 75 - 100 fms.; 64, in 67 fms., dead (dredge); 96, in 54 - 82 fms., living (grab); stations 23, living (C.); and 34 and 35, dead (E.).

Subgenus Erosaria Troschel, 1863

Cypraea spurca acicularis Gmelin, 1791

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks on rocky bottoms and on sandy and grassy bottoms; occasionally associated with reef and reef-sand. An uncommon species; rare in Barbados.

Records. - Barbados: Barbados (MCZ); stations 11 (C. & B.); and 35 (E.). All beach specimens.

Subgenus "Zonaria" Jousseaume, 1884

Cypraea surinamensis Perry, 1811

Distribution: Gulf of Mexico and Lower Caribbean, in 25 to 100 fathoms.

Ecological data: Found on sand and shell bottom, dead, and rocky bottom. A rare form.

Records. - Barbados: Diadema, station 51, in 82 fms., dead, eroded (dredge); station 130, in 100 fms., dead (in fish pot).

Remarks: This rare species was previously known from the Lesser Antilles only. In October, 1964 Jim Moore dredged one dead, fresh specimen in 25 - 28 fms. on rocky bottom, S. E. of Alligator reef off the Florida Keys.

Family OVULIDAE

Genus Primovula Thiele, 1925

Subgenus Pseudosimnia Schilder, 1927

Primovula carnea Poiret, (date not obtained)

Distribution: Southeast Florida and the West Indies, in 25 to 100 fms.

Ecological data: Probably lives, like other related forms, on gorgonians. A rare form throughout its range.

Records. - Barbados: Eolis Junior, off west of Cable Station, in 86 fms. (see Henderson's notes, 1919).

Genus Pedicularia Swainson, 1840

Subgenus Pediculariella Thiele, 1925

Pedicularia decussata, Gould, 1855

Distribution: Georgia to Florida Strait and the West Indies, in

27 to 640 fms.

Ecological data: An epizoite form; clinging to corals. Rare in Barbados; uncommon elsewhere. Pedicularia albida Dall, 1881 is a synonym.

Records. - Barbados: Hassler (station number not given) in 100 fms. (MCZ).

Genus Neosimnia Fischer, 1884

Neosimnia acicularis (Lamarck, 1810)

Distribution: North Carolina to the Florida Keys and the West Indies, in shallow water.

Ecological data: Lives on gorgonians. An uncommon form. Rare in Barbados. Listed by Thiele as Amphiperas (Simnia) acicularis, a synonym.

Records. - Barbados: Barbados (Thiele).

Neosimnia uniplicata Sowerby, 1848

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives on gorgonians. Assumes the colour of the gorgonian on which it lives. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Genus Cyphoma Roding, 1798

Cyphoma gibbosum (Linné, 1758)

Distribution: North Carolina to the Florida Keys and the West Indies, in shallow water.

Ecological data: Lives on the gorgonian Rhipidigorgia flavellum. A common species. Listed by Thiele as Ultimus gibbosus L., a synonym. Records. - Barbados: Barbados (Thiele); Barbados (Carpenter Coll.); stations 37, dead (C. & B.); 23, living (C.); and 35, dead (E.).

Cyphoma intermedium(Sowerby, 1828)

Distribution: Bermuda and Greater Antilles to Brazil, in 50 to 100 fms.

Ecological data: Probably lives associated, like its co-generic forms, with gorgonians, moderately rare throughout its range.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Diadema, station 50, in 82 fms., dead (dredge).

Remarks: Simnia aperta Sby. from Barbados and Cuba (in USNM) see Dall, p. 237, 1889, may be referable to this species.

Superfamily HETEROPODA

Family ATLANTIDAE

Genus Atlanta Lesueur, 1817

Atlanta peroni Lesueur, 1817

Distribution: Atlantic and Pacific warm water; pelagic.

Records. - Barbados: Diadema, stations 49, 57 and 123, in 100, 131 and 191 - 218 fms., dead. A very common form in the bottom debris at Barbados; evidence of its abundance in the surface waters.

Superfamily NATICACEA

Family NATICIDAE

Subfamily POLINICINAE

Genus Polinices Montfort, 1810

Polinices hepaticus (Roding, 1798)

Distribution: Southeast Florida and the West Indies in shallow water.

Ecological data: Lives on sandy bottoms. An uncommon species.

Polinices brunneus Link, 1807 and Natica mamillaris Lam., 1822 are synonyms.

Records. - Barbados: Barbados (Carpenter Coll.); stations 16, (C. & B.); 23 (C.); all dead.

Polinices lacteus (Guilding, 1834)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Dwells on sandy bottoms, very common at La Chorrera, Habana, Cuba, where it was dredged in 3 to 15 fms. on a bottom of reef-sand. Uncommon elsewhere.

Records. - Barbados: Barbados, (Krebs); Barbados (Thiele); Barbados (Gov. Rawson; Carpenter Coll.); station 11 (C. & B.); Diadema, station 61, in 32 - 43 fms.; stations 22 and 23 (C.). All dead specimens.

Polinices nubilus (Dall, 1889)

Distribution: Gulf of Mexico, Mayaguez, Puerto Rico and Barbados, in 75 - 218 fathoms.

Ecological data: Found on sand, and coarse gravel, and shell. Moderately

uncommon in Barbados; rare elsewhere. Described by Dall as Neverita nubila.
Records. - Barbados: Blake, station 299, in 140 fms. (MCZ); Diadema,
stations 57, in 131 fms.; 58, in 75 - 100 fms.; 72, in 180 fms.; all dead
(dredge); 130, in 100 fms., dead (fish pot); 128, in 191 - 218 fms., dead
(grab).

Subfamily SININAE

Genus Sinum Roding, 1798

Sinum minor (Dall, 1889)

Distribution: Off the Florida Keys and West Indies in 54 - 131 fms.

Ecological data: Found in mud, and on coarse sand, shell and gravel.

A rare species described by Dall as Sigaretus minor.

Records. - Barbados: Diadema, station 57, in 131 fms., dead (dredge)

Subfamily NATICINAE

Genus Natica Scopoli, 1777

Natica livida Pfeiffer, 1840

Distribution: North Carolina to Florida and the West Indies, in shallow
water.

Ecological data: Found on reef sand, and on coarse sand with or without
algae or rubble. (Abbott, 1958).

Records. - Barbados: Barbados (collector's name not given) (Carpenter
Coll.); Blake (station number not given), in 100 fms.; station 25 (C.);
and 45, in 3 - 8 ft. (E.). All dead

Natica canrena (Linné, 1758)

Distribution: Cape Hatteras, North Carolina to Brazil, in shallow water.

Ecological data: Lives on sandy bottoms. A common form; uncommon in Barbados. Reported by Krebs as Natica proxima Adams, which is not a Western Atlantic form. Krebs considered this record as a young of N. canrena. See Krebs (p. 100)

Records. - Barbados: Barbados (Krebs); station 11, dead (C. & B.); Diadema, station 47, in 50 - 75 fms., dead; station 23, dead (C.); station 45, dead (E.).

Natica tenuis Recluz, 1850

Distribution: Off Cape Fear, North Carolina to Florida and the West Indies, in 84 - 640 fathoms.

Ecological data: Found in muddy and sandy bottoms. Rare in Barbados.

Records. - Barbados: Diadema, station 122, in 169 - 191 fms., dead (grab).

Natica perlineata (Dall, 1889)

Distribution: Florida Strait and the West Indies, in 32 - 229 fathoms.

Ecological data: Found on sand and shell, and coarse sand and gravel.

Moderately uncommon in Barbados; rare elsewhere.

Records. - Barbados: Blake, (station number not given) in 70 - 140 fms.; Diadema, stations 49 and 50, in 100 fms.; 51, in 82 fms.; 55, in 125 fms.; 57, in 100 fms.; 58, in 75 - 100 fms.; and 61, in 32 - 43 fms. All dead (dredge).

Genus Stigmaulax Morch, 1852

Stigmaulax sulcata (Born, 1778)

Distribution: West Indies, in shallow water.

Ecological data: Found on reef-sand. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (Collector's name not given; Carpenter Coll.);

Superfamily TONNACEA

Family CASSIDIDAE

Genus Morum Roding, 1798

Morum dennisoni (Reeve, 1842)

Distribution: The West Indies, in 75 - 130 fathoms.

Ecological data: Found on sand, and sand and shell bottoms. Moderately uncommon in Barbados; rare elsewhere.

Records. - Barbados: Hassler, station 131, off Sandy Bay, in 75 - 100 fms. (MCZ); Eolis Junior, in 60 fms. (USNM); Diadema, stations 55, in 125 fms.; dead (dredge); 130, in 100 fms., dead (in fish pot).

Morum oniscus (Linné, 1767)

Distribution: Southeast Florida and the West Indies, south to Brazil, in shallow water.

Ecological data: Lives on rocky bottoms and in reef conditions. It is occasionally found on sandy and grassy areas. A common species;

rare in Barbados.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Remarks: Representatives of the deep water species Sconsia striata Gray, 1847 have not been reported from Barbados although Clench (1943) includes the latter locality in the range for the species.

Genus Phalium Link, 1807

Phalium cicatricosum (Gmelin, 1791)

Distribution: Bermuda, southeast Florida and the West Indies, in shallow water.

Ecological data: Lives buried in sand under rocks. Moderately uncommon.

Records. - Barbados: Barbados (Rawson; Carpenter Coll.); Barbados, 2 lots, (MCZ); stations 23, living (C.); and 35, dead (E.).

Remarks: The habitat of this species was discovered when the writer was turning over rocks on a reef flat at Barbados. The species co-exists with Cypraea cassis testiculus, and it seems that they bury themselves in search of their possible source of food, the spatangoid Brissus unicolor which occupies the same ecological niche. (See Sublittoral Region, shallow shelf).

Genus Cassis Scopoli, 1777

Cassis flammea (Linné, 1758)

Distribution: South Carolina (Kurtz, 1860) to Florida and the West Indies in shallow water.

Ecological data: Lives on sandy bottoms; occasionally on coral reefs.

Used to be common in the Bahamas; moderately uncommon elsewhere.

Records. - Barbados: Barbados (Krebs); Barbados (MCZ); station 23, in 3 ft., living (C.); station 35, dead (E.).

Cassis tuberosa (Linné, 1758)

Distribution: Cape Hatteras, North Carolina (Dall 1889) to southeast Florida, the West Indies and south to Brazil, in shallow water.

Ecological data: Lives on sandy, and sandy and grassy bottoms; sometimes almost completely buried, probably in search of echinoids. A common form; possibly uncommon in Barbados.

Records. - Barbados: Barbados (Krebs); Barbados (MCZ); station 40, in 50 ft., living (C. & B.).

Remarks: The above record in the Museum of Comparative Zoology was not included in Johnsonia, see Vol. 1, No. 16, p. 12.

Genus Cypraeacassis Stutchbury, 1837

Cypraeacassis testiculus (Linné, 1758)

Distribution: Bermuda, Hatteras, North Carolina to southeast Florida and the West Indies, southern Mexico south to Brazil; also tropical coast of West Africa.

Ecological data: Lives buried in sand under rocks, sharing habitat with Phalium cicatricosum. See remarks under the latter species. A common form.

Records. - Barbados: Barbados (Krebs); Barbados (Thiele); Barbados (Gov. Rawson) and Barbados (collector's name not given; both Carpenter Coll.); Barbados, and Conset Bay (both MCZ); Bridgetown (ANSP); station 23, in 2 ft., living (C.); stations 30, (P.P; and 35 (E.); both dead.

Cypraeacassis testiculus, form. crumena Bouguière, 1789

Distribution: Probably same as the former. Rare in Barbados; moderately uncommon elsewhere.

Ecological data: Probably co-exists with former.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Family CYMATIIDAE

Genus Charonia Gistel, 1848

Charonia variegata (Lamarck, 1816)

Distribution: Western Atlantic, Bermuda (Peile); Southeast Florida and the West Indies and south to Santos, Sao Paulo, Brazil; Eastern Atlantic; Mediterranean Sea, Cape Verde Islands, the Canary Islands and St. Helena; in shallow water.

Ecological data: Lives on sand, and in caves among rocks on rocky bottoms. The individuals found in deeper water usually have a thin and lighter shell. Uncommon. Listed by Thiele as Septa tritonis L. A West Indo-Pacific form.

Records. - Barbados: Barbados (Thiele); stations 15, dead; and 40, in

50 ft., living (C. & B.); station 35, dead (E.).

Genus Cymatium Roding, 1798

Subgenus Linatella Gray, 1877

Cymatium poulsoni Morch, 1877

Distribution: Lake Worth, Florida, south through the West Indies, and from West Florida to Texas, Mexico and south to Venezuela.

Ecological data: Found in fine sand and ooze. Rare.

Records. - Barbados: Blake, station 274, in 209 fms. (MCZ).

Subgenus Cabestana Roding, 1798

Cymatium labiosum (Wood, 1828)

Distribution: South Carolina to Florida and the West Indies; Indo-Pacific region, in shallow water.

Ecological data: Lives on rocky bottoms, associated with reef conditions; occasionally on sandy and grassy bottoms. Relatively rare throughout its range, except at Carboneras, near Camarioca and off Cardenas Bay, Cuba, where it is frequently washed ashore.

Records. - Barbados: Station 35, dead (E.).

Subgenus Ranularia Schumacher, 1817

Cymatium caribbaeum Clench and Turner, 1957

Distribution: Bermuda, southern Florida, the West Indies and Central Mexico to Bahia, Brazil, in shallow to moderate depths.

Ecological data: Lives on sandy and grassy bottoms. Rare in Barbados; moderately uncommon elsewhere. Previously known as Cymatium cynocephalum (Lam, 1842) which is not the same form.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (Col. Voelker); station 35 (E.); all beach specimens.

Subgenus Cymatriton Clench and Turner, 1857

Cymatium nicobaricum (Roding, 1798)

Distribution: Western Atlantic: Bermuda, Palm Beach, Florida, south to Tortugas, the West Indies and Mexico south to Honduras. Reported from Brazil. Eastern Atlantic: Canary Islands; West Indo Pacific, in shallow water.

Ecological data: Lives on sandy and rocky bottoms. A common species; rare on reef-flats, but occasionally washed ashore in Barbados.

C. chlorostoma (Lam. 1822) is a synonym.

Records. - Barbados: Blake, stations 287, in 7.5 - 50 fms.; and 272, in 76 fms.; Barbados, (and Conset Bay, 2 lots, both MCZ); stations 11, dead (C. & B.); 18, in 1 ft., living, and 23 and 25, dead (C.); 31, dead (E.)

Subgenus Septa Perry, 1810

Cymatium pileare (Linné, 1758)

Distribution: Bermuda, southeast Florida to the Gulf of Mexico and the West Indies south to Brazil; Indo Pacific, in shallow water.

Ecological data: Lives on sandy and grassy bottoms; occasionally on muddy sand. A common form; occasionally washed ashore in Barbados.

Records. - Barbados: Barbados (Krebs); Barbados (Carpenter Coll.); Barbados, 4 lots (MCZ); Barbados (Col. Voelker); station 23 (C.); 35 (E.); all beach specimens.

Cymatium gemmatum (Reeve, 1844)

Distribution: Palm Beach, Florida to the lower Florida Keys and the West Indies south to Trinidad; Indo Pacific, in 10 - 117 fathoms.

Ecological data: Not given. Moderately uncommon. C. gracilis is a synonym.

Records. - Barbados: Blake (station numbers not given), in 50 and 100 fms. (MCZ); stations 293, in 82 fms. (USNM); 35, dead (E.).

Cymatium krebsii (Morch, 1877)

Distribution: Palm Beach, Florida to Dry Tortugas and the West Indies, in shallow water to 75 fathoms.

Ecological data: Found on coral sand and broken shell. Rare.

Lampusia ? pharcida Dall, 1889 is a synonym.

Records. - Barbados: Blake, station 293, in 82 fms.

Cymatium (Septa) bellairsi, new species.

Description: Shell small, a little over 23.5 mm. (15/16 inch) in length, and 11.5 mm. in width. Rather solid, imperforate, slightly and strongly sculptured. Color pale yellowish with brown patches just behind the center of the varices; some extending above. Interior of aperture white. Nuclear whorls three, convex, slightly depressed, glossy and brownish to yellowish in color. Post-nuclear whorls 7 and strongly convex. Spire acute, extended and produced at an angle of 40°. Aperture subcircular. Outer lip thickened; the outer margin thin and conforming to the sinuosity produced by the external sculpture. The inner edge with six uniform, evenly spaced denticles and a callus-like projection on the upper margin of the posterior canal. Parietal surface heavily glazed. Upper portion of columella with a sharp plica which extends deep into the aperture. This is bordered below by another poorly developed plica. Upper and central area of the parietal lip with several protuberances resulting from the sculpture underneath. Below this there are two short plicae. Lower portion of the columella with two larger plicae; the lower one extending well within the aperture. Two poorly developed plicae appear on the anterior end of the columella. The parietal shield extends over and beyond the adjacent varix, terminating in a thin, free margin which remains exposed along the varices in the previous whorls. Columella arched inwardly; its base not extending into the siphonal canal area. Siphonal canal narrow, short, straight and curved dorsally. Suture slightly indented and concealed by the spiral sculpture. Axial sculpture consisting of 9 to 10 varices which are moderately

angled at their shoulder, and are interspaced by 9 - 10 axial ridges. Spiral sculpture consisting of 3 to 11 uniformly developed cords which decrease in thickness gradually when approaching the anterior portion of the shell. These are interspaced by numerous spiral threads. A knob is formed at each point of intersection of the cords and ridges, giving the shell a somewhat uniform reticulate appearance. Periostracum thin, white in color, finely reticulate and with a short needle-like process at each point of intersection. Operculum unknown.

Types. The holotype is in the Redpath Museum, McGill University, no. 16286, and consists of a shell that was dead, but in fairly good condition except for a slight damage on the parietal side near the end of the siphonal canal. It was dredged by the "Diadem" at station no. 49 in 100 fathoms. Bottom of sand, shell and sponge. Two paratypes from the same area, Redpath Museum, no. 16287, consist of smaller, quite broken individuals. They were also dredged by the "Diadem" at station no. 55, in 125 fathoms. Bottom of sand, shell and sponge.

Remarks. This is quite a rare and distinct species resembling C. nicobaricum from which it differs by being smaller and having a different aperture and sculpture. The aperture is closest in appearance to that of C. krebsii from which it also differs in the character of the sculpture and in being smaller. The sculpture and periostracum are closest in relationship to those of Distorsio clathrata, a different genus within the Cymatiidae. Until further evidence is obtained on

the soft parts and operculum, I place this species under the subgenus Septa.

On behalf of McGill University, I am pleased to name this species for the late Commander Cardlyn Bellairs whose generous gift to McGill made possible the erection of the Bellairs Research Institute in Barbados where the shells were found.

Subgenus Gutturnium Morch, 1852

Cymatium muricinum (Roding, 1798)

Distribution: Bermuda, Jupiter Inlet, Florida and Veracruz, Mexico south to Brazil, and the West Indies; Indo-Pacific, in shallow water. Ecological data: Lives under rocks on sandy and grassy bottoms; occasionally on reef-sand; a common species; rarely washed ashore on Barbados.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (MCZ); station 25, dead (C.).

Subgenus Monoplex Perry, 1811

Cymatium parthenopeum (von Salis, 1793)

Distribution: Bermuda, Florida, Mexico and the West Indies south to Brazil; Indo-Pacific, from low water to about 35 fathoms.

Ecological data: Not given; probably dwells on sandy bottoms. Rare

in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (MCZ); beach specimen.

Subgenus Cymatium Roding, 1798

Symmatium femorale (Linné, 1758)

Distribution: Bermuda, southeast Florida and the lower Florida Keys, the West Indies, and from Central Mexico south Bahia, Brazil, in shallow water.

Ecological data: Lives on sandy and grassy bottoms. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (MCZ). Both beach specimens.

Genus Distorsio Roding, 1798

Subgenus Rhysema Clench and Turner, 1957

Distorsio mcgintyi Emerson and Puffer, 1953

Distribution: Off Palm Beach, Florida, the Florida Keys and the West Indies, in 82 to 164 fathoms.

Ecological data: Lives on sand, shell and gravel bottom. Moderately uncommon.

Records. - Barbados: Hassler (station number not given), 100 fms.; Blake, station 273, in 103 fms.; and 300, in 82 fms. (all MCZ);

Diadema, stations 55, in 125 fms.; 57, in 131 fms. (living and dead); 66, in 83 fms.; and 71, in 153 - 164 fms., dead (dredge); 130, in 100 fms., dead (fish pot).

Distorsio clathrata (Lamarck, 1816)

Distribution: Cape Hatteras, North Carolina, Lake Worth, Florida, the northern Gulf of Mexico south through the West Indies to British Guiana, in shallow water to 120 fathoms.

Ecological data: Found in ooze, and on hard bottoms. Rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Blake, stations 273, in 103 fms.; and 300, in 82 fms. (MCZ).

Family BURSIDAE

Genus Bursa Roding, 1798

Bursa thomae (d'Orbigny, 1842)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky bottoms. Moderately rare. Gyrineum cruentatum Reeve, is a synonym.

Records. - Barbados: Station 23, dead (C.).

Subgenus Colubrellina Fischer, 1884

Bursa cubaniana (c'Orbigny, 1842)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); stations 11, dead (C. & B.); 34, living (C.); and 35, dead (E.).

Subgenus Tutufa Jousseaume, 1881

Bursa finlayi McGinty, 1962

Distribution: Off the Florida Keys, Cuba and Barbados in 70 to 125 fms.

Ecological data: Lives on rocky bottoms. Uncommon in Barbados; moderately rare elsewhere.

Records. - Barbados: Diadema, station 130, in 100 fms. (fish pot).

Family TONNIDAE

Genus Tonna Brunnich, 1772

Tonna maculosa (Dillwyn, 1817)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Uncommon.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (MCZ); stations 23, and 25, dead (C.); 39, in 30 - 40 ft., dead (C. & B.); 42, in 30 ft., dead (E.).

Genus Eudolium Dall, 1889

Eudolium crosseanum (Monterosato, 1869)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 82 to 292 fathoms.

Ecological data: Found on sandy and stony bottom. Moderately rare.

Records. - Barbados: Blake, station 291, in 200 fms. (MCZ); Diadema, stations 51, in 82 fms.; and 57, in 131 fms.; dead (dredge); 130, in 100 fms., dead (fish pot).

Family FICIDAE

Genus Ficus Roding, 1798

Ficus atlanticus Clench and Aguayo, 1940

Distribution: Barbados and Brazil, in 131 to 450 fathoms.

Ecological data: Not given. A rare form.

Records. - Barbados: Diadema, station 57, in 131 fms., 2 fragments (dredged).

ORDER NEOGASTROPODA

Superfamily MURICACEA

Family MURICIDAE

Genus Murex Linné, 1758

Subgenus Murex Linné, 1758

Murex cabritti Bernardi, 1858

Distribution: Off North Carolina to the Gulf of Mexico and the West Indies, in 25 to 150 fathoms.

Ecological data: Found on sandy, and rocky bottoms. Rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ).

Murex antillarum Hinds, 1844

Distribution: Southern Florida and the West Indies, in 27 to 115 fms.

Ecological data: Lives on sandy and muddy bottoms. Rare in Barbados; uncommon elsewhere. Listed by Dall (1889) as Murex.

Records. - Barbados: Blake, station 290, in 72 fms. (MCZ); station 272, in 76 fms., living (MCZ); Barbados (A. H. Patterson).

Murex tryoni Hidalgo, 1880

Distribution: Florida, Gulf of Mexico and the West Indies, in 25 to 115 fathoms.

Ecological data: Found on a bottom of coral and broken shell. Rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Blake, station 273, in 103 fms. (MCZ).

Murex sp.

Remarks: Three specimens of an interesting shell closely related to M. aguayoi were dredged by the Diadema at station 55, in 125 fms. Bottom of sand. The largest specimen measures a little over one inch.

Murex beauli Fischer and Bernardi, 1857

Distribution: Gulf of Mexico and the West Indies, in 82 to 254 fathoms.

Ecological data: Found in sandy mud, and sand and broken shell.

Moderately rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Blake, stations 300, in 82 fms.; and 293, in 82 fms. (USNM); Diadema, stations 52, in 82 fms., living (dredge); and 130, in 100 fms., dead (fish pot).

Murex cailletti Petit, 1856

Distribution: Southern Florida, Bahamas and south through the Lesser Antilles in 54 to 200 fms.

Ecological data: Found in muddy sand, mud, and sand and shell. Uncommon.

Records. - Barbados: Blake, station 290, in 73 fms.; and in 54 fms.; (MCZ); Barbados (F. G. Kellett; MCZ); Diadema, stations 54 and 58, in 75 - 125 fms., dead (dredge); and 130, in 100 fms., dead (fish pot).

Murex motacilla Gmelin, 1790

Distribution: Lesser Antilles in shallow water to 95 fathoms.

Ecological data: Not obtained. Moderately rare.

Records. - Barbados: St. Lawrence and Oistins Bay (both Mrs. F. G. Kellett; MCZ).

Murex pulcher A. Adams, 1845

Distribution: Virgin Islands and the Lesser Antilles, in shallow water to 71 fathoms.

Ecological data: Found on rocky and sandy bottom. Moderately rare.

Records. - Barbados: St. Lawrence (F. G. Kellett; MCZ); Diadema, station 66 in 71 fms., dead.

Subgenus Phyllonotus Swainson, 1833

Murex pomum Gmelin, 1791

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. A common species; rare in Barbados.

Records. - Barbados: Barbados (F. G. Kellett; MCZ); Barbados (Thiele).

Subgenus Chicoreus Montfort, 1810

Murex brevifrons Lamarck, 1822

Distribution: Southeast Florida and the West Indies south to British Guiana, in shallow water.

Ecological data: Lives on sandy bottoms. Rare in Barbados; uncommon elsewhere. Abbott (1960) reported this species as common on mangrove roots, feeding on oysters.

Records. - Barbados: Barbados (F. G. Kellett; MCZ).

Subgenus Poirieria Jousseume, 1880

Murex hystericinus Dall, 1889

Distribution: South Florida, Gulf of Mexico and the West Indies, in 75 to 254 fathoms.

Ecological data: Found on coarse gravel and shell. Rare.

Records. - Barbados: Diadema, stations 58, in 75 - 100 fms., dead; and 71, in 153 - 164 fms., living (dredge).

Subgenus Murexul Iredale, 1915

Murex carnicolor Clench and Perez Farfante, 1945

Distribution: Lesser Antilles, in 88 to 103 fathoms.

Ecological data: Found on a bottom of coral and broken shell. Rare.

Records. - Barbados: Blake, station 273, in 103 fms. (MCZ).

Subgenus Murexiella Clench and P. Farfante, 1945

Murex hidalgoi Crosse, 1869

Distribution: Gulf of Mexico south through the Lesser Antilles, in 76 to 196 fathoms.

Ecological data: Found on gravel, sand and ooze, and coarse sand and shell. Moderately uncommon.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ); Diadema, stations 54, in 100 - 125 fms.; 68, in 120 fms., dead (dredge); and in 109 - 138 fms.

Genus Eupleura H. and A. Adams, 1853

Eupleura stimpsoni Dall, 1889

Distribution: Off Fernandina, Florida and the West Indies, in 75 to 164 fathoms.

Ecological data: Lives on rocky and sandy bottoms. Common in Barbados, and in the Gulf of Mexico.

Records. - Barbados: Blake (station number not given), in 100 fms., (MCZ); Diadema, stations 58, in 75 - 100 fms., dead; and 71, in 153 - 164 fms., living.

Remarks: One fragment of this species probably drifted, was dredged by the Blake in 1,002 fms. off western Cuba.

Genus Muricopsis Bucquoy, Dautzenberg and Dolfus, 1882

Muricopsis oxytatus M. Smith, 1938

Distribution: Florida Keys, Gulf of Mexico and the West Indies, in 1 to 25 fathoms.

Ecological data: Lives on rocky bottoms. A common species; rare in Barbados. Muricidea hexagona (Lamarck, 1822) is a synonym.

Records. - Barbados: Station 25, in 1 ft., dead (C.).

Remarks: This form is present in the Caloosahatchie (Pliocene) marl of southern Florida.

Genus Typhis Montfort, 1810

Subgenus Typhis Montfort, 1810

Typhis cancellatus Sowerby, 1845

Distribution: West Indies, in shallow water.

Ecological data: Lives on rocky bottoms; moderately rare.

Records. - Barbados: Barbados (Krebs; Carpenter Coll.).

Genus Boreotrophon P. Fischer, 1884

Boreotrophon actinophorus Dall, 1889

Distribution: Lesser Antilles, in 140 - 248 fathoms.

Ecological data: Lives on sandy and rocky bottoms. Common in Barbados; moderately rare elsewhere.

Records. - Barbados: Blake, station 299, in 140 fms. (USNM); Diadema, station 71, in 153 fms., living (dredge).

Subfamily PURPURINAE

Genus Drupa Roding, 1798

Subgenus Morula Schumacher, 1817

Drupa nodulosa (C. B. Adams, 1845)

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. Common.

Records. - Barbados: Barbados (Thiele); stations 1, 2 and 3 (L.);

18, 20 and 23 (C.); 35 (E.).

Genus Purpura Bruguière, 1789

Purpura patula Linné, 1758

Distribution: Southeast Florida and the West Indies.

Ecological data: Lives on rocky shores from the surf zone to the lower levels of the spray zone. Common.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (Thiele); Barbados (MCZ); stations 1 - 7, living (L.); 15, living (C. & B.); 18 and 21, living (C.); 31, dead (E.).

Genus Thais Roding, 1798

Subgenus Stramonita Schumacher, 1817

Thais rustica Lamarck, 1822

Distribution: Bermuda, southeast Florida and the West Indies.

Ecological data: Lives on rocky shores within and occasionally above the surf zone. Uncommon. Reported by Thiele as Thais haemastoma var. undata Lamarck, 1822.

Records. - Barbados: Barbados (Thiele); Barbados, Bethsheba and Hastings (all MCZ); stations 1 - 7, living (L.); 10 and 15, living; and 37, in 20 ft., dead (C. & B.); 18, 20 and 21, living (C.); 34, dead (E.).

Thais haemastoma floridana Conrad, 1837

Distribution: North Carolina to Florida and the West Indies.

Ecological data: Lives under rocks, and in crevices at the surf zone.

A common form; rare in Barbados. Records by Lewis probably refer to the previous form. I did not find this species in Barbados.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Subgenus Mancinella Link, 1807

Thais deltoidea Lamarck, 1822

Distribution: Bermuda, Florida and the West Indies.

Ecological data: Lives on and under rocks at the surf zone. Common.

Records. - Barbados: Barbados (Thiele); Barbados (MCZ); stations 2 and 7, living (L.); 10 and 16, living; and 38, dead (C. & B.); 18, 23 and 25, living (C.).

Remarks: One old, beach specimen of Thais (Thaisella) coronata in the Museum of Comparative Zoology at Harvard University is labelled from Barbados. The species lives on the West African coast. The presence of this species along the Brazilian coast has to be established. See Johnsonia, Vol. 2, No. 23, 1947.

Genus Ocenebra Gray, 1847

Ocenebra intermedia C. B. Adams, 1850

Distribution: The West Indies, in shallow water.

Ecological data: Found on rocky bottoms. Uncommon.

Records. - Barbados: Stations 18, 22 and 23, dead (C.).

Subgenus Ocinebrina Jousseaume, 1880

Ocenebra muricoides (C. B. Adams, 1845)

Distribution: West Indies, in shallow water.

Ecological data: Lives on the underside of rocks. Moderately uncommon.

Records. - Barbados: Stations 22 and 23, living (C.).

Family MAGILIDAE

Genus Coralliophila H. and A. Adams, 1853

Coralliophila abbreviata (Lamarck, 1816)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives in depressions on rocky bottoms and in the base of gorgonians. A common reef species.

Records. - Barbados: Stations 23, dead (C.); and 37, in 20 ft. living (C. & B.).

Coralliophila caribaea Abbott, 1958

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on corals and in the base of gorgonians. A common reef species.

Records. - Barbados: Stations 11, dead; and 37, in 20 ft., living (C. & B.); 23, in 2 ft., living (C.).

Coralliophila lintoni (Verrill and Smith, 1884)

Distribution: Gulf of Mexico south to Barbados, in 70 - 274 fathoms.

Ecological data: Found on sand and shell, and coarse gravel and shell.

Possibly lives associated with corals. Moderately rare.

Records. - Barbados: Diadema, stations 49, in 100 fms.; and 58, in 75 - 100 fms., dead (dredge).

Remarks: This species is not a synonym of C. aberrans (C. B. Adams, 1850) as believed to be by Abbott (1958, pp. 67 - 68). The latter species reaches a much larger size and the shell is shorter, without shouldered whorls and with different details of sculpture.

Genus Latiaxis Swainson, 1840

Subgenus Babelomurex Coen, 1922

Latiaxis dalli Emerson and D'Attilio, 1963

Distribution: Off Cape Hatteras (Johnson, 1934), Gulf of Mexico, off southern Florida, the Bahamas and south to the Lesser Antilles, in 56 - 878 fathoms.

Ecological data: Found on coarse sand and gravel, and Globigerina ooze and shell. Moderately rare.

Records. - Barbados: Blake (station number not given), in 100 fms.; and station 281, in 288 fms. (both MCZ); Diadema, stations 58, in 75 - 100 fms., dead (dredge); and 130, in 100 fms., dead (fish pot).

Remarks: This species was formerly known as Coralliophila deburghiae (Reeve, 1887) which is a Japanese form. The record from station 281 off

Guadalupe, in 878 fathoms appear to have been erroneously obtained by the author as such station number and depth refers to off Barbados. (See station list). I obtained the same record from the MCZ. where the locality given on the label is correct. Significant is, that the author seems to have overlooked the species Coralliophila deburghiae var. spinosa which Dall (1889, p. 219) discusses as one of several varietal forms considered by him within this species. This form, with shorter and slender spines, was obtained by the Diadema at stations 49, in 100 fms.; 58, in 75 - 100 fms., and 67, in 97 fms. Bottom of sand and shell, and coarse gravel and shell, (all dead, dredge). Another record by the Blake (in the MCZ) was obtained in 100 fms. (station number not given).

Latiaxis mansfieldi (McGinty, 1940)

Distribution: Gulf of Mexico and the West Indies, in shallow water to 878 fathoms.

Ecological data: Lives under stones. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Station 11, dead (C. & B.).

Latiaxis juliae Clench and Aguayo (date not located)

Distribution: Known only from Barbados, in 75 - 100 fathoms.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Hassler (station number not given), off Sandy Bay, in 75 - 100 fms.

Superfamily BUCCINACEA

Family COLUMBELLIDAE

Genus Columbella Lamarck, 1799

Columbella mercatoria (Linné, 1758)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on and under rocks on open shores and in quiet and muddy bays; occasionally on Thalassia over sandy and grassy bottoms.

A common species.

Records. - Barbados: Barbados (Krebs); Barbados (collector's name not given; Carpenter Coll.); Barbados (Thiele); stations 1 and 2, living (L.); 11 and 16, dead; and 37, in 20 ft., living (C. & B.); 18, 22 and 23, living (C.); 27 and 28, living (P.); 34 and 35, dead (E.); Pelican Island, Bathsheba, and Conset Bay, 3 lots (MCZ).

Genus Pyrene Roding, 1798

Pyrene ovulata Lamarck, 1822

Distribution: The West Indies, in shallow water.

Ecological data: Lives on rocky and sandy bottoms. Rare in Barbados; moderately uncommon in other areas.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Remarks: This record consists of a fossil (Pleistocene) specimen.

Genus Anachis H. and A. Adams, 1853

Anachis pulchella (Sowerby, 1844)

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Not obtained. Rare in Barbados; common elsewhere.

Records. - Barbados: Station 37, in 20 ft., dead (C. & B.).

Anachis catenata (Sowerby, 1844)

Distribution: Bermuda and the West Indies, in shallow water.

Ecological data: Found on muddy sand and reef-sand. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Anachis sp. a.

Remarks: This is a very interesting species with beautiful brown spots. It is a large shell for the genus (24 mm.). Comparative studies may reveal that it is a new species. Two adult and two juvenile individuals were dredged by the Diadema at stations 54, in 125 fms. and 55, in 125 fms. Bottom of gravel, sand and ooze, and sand.

Anachis sp. b.

Remarks: This is a tiny shell (2 mm. in length). Two dead specimens were obtained by the Diadema in the grab apparatus at stations 122 and 128, in 191 - 218 fms.

Genus Nitidella Swainson, 1840

Nitidella ocellata (Gmelin, 1791)

Distribution: Bermuda, the Lower Florida Keys and the West Indies, from intertidal to shallow depths.

Ecological data: Lives under stones. A gregarious form. Common.

N. cribraria Lam., 1822 is a synonym.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (Thiele); stations 1 - 7, living (L.); 18, 22 and 23, living (C.); 37, dead (E.).

Nitidella dichroa Sowerby, 1858

Distribution: West Indies, from intertidal to low-tide zone.

Ecological data: Occupies the same habitat as the former species.

Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Nitidella nitida (Lamarck, 1822)

Distribution: Southeast Florida and the West Indies, from the intertidal zone to shallow depths.

Ecological data: Lives on and under rocks. Common.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (F. G. Kellett; MCZ); stations 11, living (C. & B.); 18 and 25, dead (C.); 28 and 31, dead (P.).

Nitidella laevigata (Linné, 1758)

Distribution: Florida Keys and the West Indies, surf and low-tide zones.

Ecological data: Lives on rocks, in depressions overgrown with algae.

A gregarious form. Common.

Records. - Barbados: Barbados (Carpenter Coll.); stations 1 - 7 (L.); 18, 20 and 23 (C.); and 31 (E.).

Genus Mitrella Risso, 1826

Subgenus Columbellapsis Bucquoy, Dautzenberg and Dolfus, 1882

Mitrella nitens C. B. Adams, 1850

Distribution: Southeast Florida and the West Indies, in shallow water to 100 fathoms.

Ecological data: Found in muddy sand and reef-sand. A common form; probably uncommon in Barbados.

Records. - Barbados: Stations 11 and 37, dead (C. & B.); 25, dead (C.).

Mitrella fenestrata C. B. Adams, 1850

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Found in muddy sand and reef-sand. Rare in Barbados; common elsewhere.

Records. - Barbados: Station 18, dead (C. & B.).

Mitrella ravenelli Dall, 1889

Distribution: North Carolina to Florida and the West Indies, in 54 to 215 fathoms.

Ecological data: Not given. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Diadema, station 88, in 54 - 82 fms., dead.

Mitrella sp.

Remarks: This is a little shell about 6 mm. in length. It was obtained by the Diadema at station 91, in 54 - 82 fms. (grab).

Genus Psarostola Rehder, 1943

Psarostola sp. a.

Remarks: This is a small species of which one specimen was obtained by the Diadema at station 88, in 54 - 82 fms. (grab).

Psarostola sp. b.

Remarks: This is a shell 15 mm. in length. Two adult, dead individuals were obtained by the Diadema at stations 49, in 100 fms.; and 55, in 125 fms. Bottom sand and shell, and sand.

Genus Nassarina Dall, 1889

Nassarina bushii Dall, 1889

Distribution: Florida Keys and the West Indies, in 15 to 229 fathoms.

Ecological data: Found in ooze. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Remarks: Dall pointed out that this species is very similar to

N. glypta Bush, 1885, found off the coast of North Carolina by the U. S. Fish Commission. They differ in size and coloration. I have not seen these species.

Nassarina grayi Dall, 1889

Distribution: Gulf of Mexico and the West Indies, in 73 to 130 fathoms.

Ecological data: Found on coarse sand, gravel and broken shell, and hard bottom. Moderately rare.

Records. - Barbados: Blake, stations 290, in 73 fms. (USNM); and 272, in 76 fms. (MCZ); Diadema, stations 53, in 82 fms., living; 55, in 125 fms., dead; 58, in 100 - 125 fms., living; and 66, in 83 fms., dead (all dredge).

Family BUCCINIDAE

Genus Antillophos Woodring, 1928

Antillophos candeï (d'Orbigny, 1853)

Distribution: Off Cape Hatteras, North Carolina to Florida and the West Indies, in 25 to 175 fathoms.

Ecological data: Lives on muddy bottoms. Moderately rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake, (station numbers not given) in 80 and 100 fms. (both USNM).

Antillophos beauï (Fischer and Bernardi, 1860)

Distribution: Gulf of Mexico and the West Indies, in 54 to 180 fathoms.

Ecological data: Lives on sandy, shelly and gravelly bottoms. Moderately Uncommon.

Records. - Barbados: Blake, stations 272, in 76 fms.; 290, in 73 fms.; and 300, in 82 fms. (all MCZ); station 293, in 82 fms. (USNM); *Diadema*, stations 52, in 82 fms., living; 54, in 100 - 125 fms., dead; 55, in 125 fms., dead; 59, in 70 - 80 fms.; 66, in 83 fms., dead; 69, in 138 fms., dead (all dredge); and 109, in 109 fms., dead (grab).

Genus Bartschia Rehder, (date not obtained)

Bartschia sp.

Remarks: One dead specimen of this rare species was obtained by the *Diadema* at station 130, in 100 fms. Needs comparison with B. significans Rehder.

Genus Engina Gray, 1869

Engina turbinella (Kiener, 1836)

Distribution: Lower Florida Keys and the West Indies, in shallow water.

Ecological data: Lives on the underside of rocks. A common form.

Records. - Barbados: Barbados (Rawson; in Arango); station 11 and 37, dead (C. & B.); 18, 22 and 23, living (C.); 29, living (P.); and 34, dead (E.).

Engina sp.

Remarks: This rare form seems to be Engina floridana Olsson and Harbison, known as a fossil from the Pliocene of St. Petersburg with which it agrees in almost every morphological detail. Comparison between the two forms is, however, necessary to verify this possibility.

Genus Colubraria Schumacher, 1817

Colubraria lanceolata Menke, 1828

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 3 to 54 fathoms.

Ecological data: Found on reef-sand. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (Col. Voelker).

Colubraria obscura Reeve, 1844

Distribution: North Carolina to the Gulf of Mexico and the West Indies; Indo-Pacific, in shallow water.

Ecological data: Found on reef-sand. Rare in Barbados; moderately uncommon elsewhere. Colubraria testacea Morch, 1877 is a synonym.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (Col. Voelker).

Remarks: The lot in the Carpenter collection consists of 1 fossil specimen (Pleistocene) and 2 recent.

Colubraria swifti Tryon, 1881

Distribution: Bermuda (Goode, see Dall, 1889) and the West Indies, in shallow water to 100 fathoms.

Ecological data: Found on sand; coarse sand and shell, and hard bottom.

Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake, station 272, in 76 fms. and in 100 fms.;

Barbados (E. M. Howland); Barbados (F. G. Kellett; all MCZ).

Genus Pisania Bivona - Bernardi, 1817

Pisania pusio (Linné, 1758)

Distribution: Southeast Florida and the West Indies in shallow water.

Ecological data: Lives under rocks on rocky bottoms, and in crevices and depressions among corals. Uncommon. A very fast moving gastropod (see Ecological Distribution).

Records. - Barbados: Barbados (F. G. Kellett; MCZ); stations 11 and 16, dead (C. & B.); 18, dead and 22, living (C.); near station 22, in 4 fms., living (L.).

Genus Cantharus Roding, 1798

Cantharus auritulus Link, 1807

Distribution: Florida south through the West Indies to Brazil, in shallow water.

Ecological data: Lives under rocks. Common.

Records. - Barbados: Barbados (collector's name not given; Carpenter

Coll.); Barbados (Thiele); Barbados (F. G. Kellett); Hastings (T. Drange); Oistins Bay, in 4 - 5 meters (R. Gooding; all MCZ); stations 15, living; 16 and 17, dead; and 37, in 20 ft., living (all C. & B.); stations 18, 22 and 23, living (C.).

Family NASSARIIDAE

Genus Nassarius Dumeril, 1806

Nassarius scissuratus (Dall, 1889)

Distribution: Florida Strait and the West Indies, in shallow water to 100 fathoms.

Ecological data: Found on sand; coarse sand and shell, and hard bottom. Moderately rare.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ); Diadema, station 71, in 53 fms., dead (grab).

Nassarius scissuratus var. pernitidus (Dall, 1889)

Distribution: Known only from Barbados, in 100 - 140 fathoms.

Ecological data: Found on sand and shell, and hard bottoms. Rare.

Records. - Barbados: Blake, station 299, in 140 fms. (USNM); Diadema, station 49, in 100 fms., dead (dredge).

Nassarius albus (Say, 1826)

Distribution: Off Cape Hatteras, North Carolina to the Lesser Antilles, in 1 to 805 fathoms.

Ecological data: Lives in shallow sandy and grassy bottoms, and in mud. Common.

Records. - Barbados: Blake, stations 272, in 76 fms.; and 273, in 103 fms. (MCZ); Diadema, stations 49, and 50, in 100 fms.; 52, in 82 fms.; 54, in 100 - 125 fms.; 56, in 100 fms.; 58, in 75 - 100 fms.; 59, in 70 - 80 fms.; and 69, in 120 - 138 fms., living and dead (dredge); 88 and 91, in 54 - 82 fms.; and 116, in 138 - 164 fms., dead (grab); stations 11 and 37, dead (C. & B.); station 23, dead (C.).

Nassarius cf. consensus Ravenel, 1861

Remarks: One beach specimen of a shell which may be referable to the above species was obtained by Clarke and Bousfield at station 11.

Family FASCIOLARIIDAE

Subfamily FASCIOLARIINAE

Genus Latirus Montfort, 1810

Latirus megintyi Pilsbry (date not obtained)

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. A reef dweller. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (Col. Voelker). Beach specimen.

Latirus infundibulum (Gmelin, 1790)

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Lives on sandy and muddy bottoms. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (S. J. Mixter; MCZ).

Latirus cayohuesonicus Sowerby, 1878

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Not given; probably occupies the same habitat as the former species. Rare in Barbados; moderately so elsewhere.

Records. - Barbados: Barbados (E. M. Howland; MCZ).

Latirus sp.

Remarks: A juvenile individual of the undetermined species measuring 4 mm. in length, was obtained by the Diadema at station 88, in 54 - 82 fms., dead (grab).

Genus Fasciolaria Lamarck, 1799

Fasciolaria tulipa (Linné, 1758)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Remarks: This record is in a mixed lot from Barbados and Jamaica.

Genus Leucozonia Gray, 1847

Subgenus Leucozonia Gray, 1847

Leucozonia nassa (Gmelin, 1791)

Distribution: Florida, Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives under rocks, and on sandy and grassy bottoms.

An uncommon form. Listed by Thiele as Leucozonia cingulifera Lam. 1816, a synonym.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (Thiele); stations 22 and 23, living (C.); station 35, dead (E.).

Remarks: Large individuals of this form are rare. These are occasionally found under rocks on reef-flats at Barbados where they reach over 2 inches in length, having the spine on the outer lip highly developed. The color varies from dark brown to yellowish brown or almost black, depending on locality.

Leucozonia ocellata (Gmelin, 1791)

Distribution: Florida and the West Indies, in minus tide to shallow depths.

Ecological data: Lives under rocks, particularly on rocky bottoms.

Common.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); stations 1 - 7, living (L.); stations 18, 20, 22 and 23, living (C.); 49, living (P.).

Remarks: This is a common form on the reef-flats of Barbados. Lewis (1960 a) reported it from the Pink Zone to a little below the low water mark, describing it as a copulator reproducing from February to the end of May or June; the species becoming gregarious during this period. There is no pelagic stage. The eggs are laid in sessile, stalked egg cases.

Genus Fusinus Rafinesque, 1815

Fusinus eucosmius (Dall, 1889)

Distribution: Florida Strait, Gulf of Mexico and the West Indies, in 27 to 111 fathoms.

Ecological data: Lives on sand, gravel and shell bottom. Rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Blake, station 290, in 73 fms.

Fusinus ceramides (Dall, 1889)

Distribution: Known only from Barbados, in 73 to 131 fathoms.

Ecological data: Found on sandy, shelly and gravelly bottom. Moderately uncommon.

Records. - Barbados: Blake, stations 272, in 76 fms.; and 273, in 103 fms. (both MCZ); station 290, in 73 fms. (USNM); Diadema, stations 53, in 80 fms.; 55, in 125 fms.; 57, and 58, in 131 fms.; and 66, in 83 fms., all dead (dredge); station 130, in 100 fms., dead (fish pot).

Remarks: Several fusinids are living in the Gulf of Mexico. It is

interesting to note that this species has not been reported from the latter area.

Family XANCIDAE

Subfamily VASINAE

Genus Vasum Roding, 1798

Vasum capitellum Linné, 1798

Distribution: Puerto Rico south to Colombia, S. America, in shallow water.

Ecological data: Lives on sandy bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Superfamily VOLUTACEA

Family OLIVIDAE

Genus Oliva Bruguière, 1789

Oliva reticularis Lamarck, 1811

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. A common form; occasionally dredged dead in Barbados.

Records. - Barbados: Blake, station 290, in 73 fms. (MCZ); Barbados N. W. Lermond Coll.; MCZ); Barbados (Gov. Rawson; Carpenter Coll.); Diadema, stations 49, in 100 fms.; and 57, in 131 fms., dead (dredge);

station 34, dead (E.).

Remarks: The subspecies O. reticularis greenwayae Clench, O. reticularis pattersoni Clench, as well as O. reticularis olarinella Duclos, are, in my opinion varieties of the above form. The record from N. W. Lermond Coll. in the Museum of Comparative Zoology refers to the latter form.

Genus Olivella Swainson, 1831

Subgenus Olivella Swainson, 1831

Olivella petiolita Duclos, 1835

Distribution: West Indies to Venezuela and Panama, in shallow water.

Ecological data: Not obtained; probably a sand dweller. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Remarks: The above record was sent to Philip Carpenter as O. monilifera Reeve = nana.

Olivella floralia Duclos, 1835

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottom. Frequently found in beach drift. Common.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Remarks: The above record consists of a mixed lot from Bahamas and Barbados labelled as Olivella oryza Lamarck.

Olivella nivea (Gmelin, 1791)

Distribution: Bermuda, southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottom. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (Krebs); Barbados (Thiele).

Remarks: The record credited to Rawson (Carpenter Coll. Cat.No. 9540) consists of 5 fresh specimens. There is another lot in the same collection (Cat.No. 9543) containing 9 specimens which were mixed with O. floralia and a third lot (Cat.No. 9541) containing 5 specimens. The collector's names are not given with the latter two lots.

Subgenus Dactylidia H. and A. Adams, 1853

Olivella dealbata Reeve, 1850

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. A common form; probably uncommon in Barbados.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); stations 11 and 37, dead (C. & B.).

Subgenus Niteoliya Olsson, 1956

Olivella minuta (Link, 1807)

Distribution: West Indies, in shallow water.

Ecological data: Found on sandy bottoms. Rare in Barbados; moderately common elsewhere. Listed by Krebs as O. fimbriata Reeve.

Records. - Barbados: Barbados (Krebs); Barbados (Gov. Rawson); Barbados (collector's name not given; both Carpenter Coll.); Barbados, 3 lots, (MCZ).

Olivella verreauxi Duclos, 1857

Distribution: West Indies, in shallow water.

Ecological data: Found on sandy bottoms. Moderately rare.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Subgenus Mcgintiella Olsson, 1956

Olivella rotunda Dall, 1889

Distribution: Puerto Rico and Barbados, in 27 to 805 fathoms.

Ecological data: Found on coral sand and broken shell, and sand, shell and sponge. Uncommon.

Records. - Barbados: Blake, stations 285, in 13 - 40 fms.; 272, in 76 fms.; and 299, in 140 fms. (all MCZ); stations 273, in 103 fms.; and 282, in 154 fms. (both USNM); Diadema, stations 50, in 100 fms.; 51, in 82 fms.; 54, in 100 - 125 fms.; 58, in 75 - 100 fms.; 71, in 153 - 164 fms.; and 72, in 180 fms., all dead except at station 71 (all dredge); stations 108, in 109 - 138 fms., dead (grab).

Olivella watermani McGinty, 1940

Distribution: Off the Eastern Coast of Florida and Barbados, in 50 - 138 fathoms.

Ecological data: Found on a bottom of sand and shell. Moderately uncommon.

Records. - Barbados: Diadema, stations 54, in 100 - 125 fms.; 58, in 75 - 100 fms.; 59, in 70 - 80 fms.; 66, in 83 fms.; and 69, in 120 - 138 fms., all dead except at station 66 (all dredge).

Olivella fuscocincta Dall, 1889

Distribution: Florida Keys and the West Indies, in 27 to 250 fathoms.

Ecological data: Found on coral sand and broken shell. Uncommon.

Records. - Barbados: Blake, (station number not given), in 100 fms.; station 292, in 56 fms. (both MCZ); stations 273, in 73 fms.; and in 84 fms. (USNM); Diadema, stations 84, in 27 - 54 fms.; and 88, in 54 - 82 fms., dead (dredge); stations 103, and 104, in 82 - 109 fms., dead (grab).

Subgenus Callianax H. and A. Adams, 1853

Olivella thompsoni Olsson, 1956

Distribution: Off Marathon, Florida Keys and Barbados, in 27 to 100 fathoms.

Ecological data: Not obtained.

Records. - Barbados: Diadema, stations 84, in 27 - 54 fms.; 88, in 54 - 82 fms., dead (dredge); stations 103 and 104, in 82 - 109 fms., dead (grab).

Subgenus Minioliva Olsson, 1956

Olivella perplexa Olsson, 1956

Distribution: East and West Coasts of Florida and Barbados, in 13 to 218 fathoms.

Ecological data: Lives on sandy bottoms. Common in Florida; moderately uncommon in Barbados.

Records. - Barbados: Diadema, station 61, in 32 - 43 fms., dead (dredge); stations 76, in 13 - 27 fms.; 122, in 164 - 191 fms.; 125, 126 and 128, in 191 - 218 fms., all dead (grab).

Genus Jaspidella Olsson, 1956

Jaspidella jaspidea (Gmelin, 1791)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Moderately uncommon.

Records. - Barbados: Barbados (Krebs); Barbados (Lister; in Arango, 1878); stations 23, dead (C.); 34 (E.); Barbados (collector's name not given; Carpenter Coll.); Barbados (Henderson).

Remarks: Henderson (1919) reported this species as common on the shores of Barbados between Eastern and Needham Points.

Jaspidella blanesi (Ford, 1898)

Distribution: Florida to Barbados, in shallow water.

Ecological data: Not given; probably dwells on sandy bottoms. Common in

Florida; rare in Barbados.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Remarks: The generic position of this species is uncertain until further evidence on radular characteristics are obtained. See Olsson, p. 213 (1956).

Family MITRIDAE

Genus Mitra Lamarck, 1799

Mitra barbadensis (Gmelin, 1791)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks on sandy and rocky bottoms. Common.

Records. - Barbados: Barbados (Krebs); Barbados (Thiele); Barbados (MCZ); stations 18, dead; 21, living; and 22 and 23, dead (C.).

Mitra nodulosa (Gmelin, 1791)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks, particularly on rocky bottoms. Common.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (Thiele); Barbados (MCZ); stations 22, living (C.); 34 and 35, dead (E.); 38, in 30 ft., dead (C. & B.).

Mitra swansoni antillensis Dall, 1889

Distribution: Off Cape Lookout, North Carolina to the Gulf of Mexico and the West Indies, in 7 to 421 fathoms.

Ecological data: Found in sand, coral and broken shell. Moderately rare.
Records. - Barbados: Blake, stations 299, in 140 fms.; and 288, in 154 fms. (both USNM); Diadema, stations 58, in 75 - 100 fms., living (dredge); and 107, in 109 - 138 fms., dead (grab).

Mitra styria Dall, 1889

Distribution: Florida Keys and the West Indies, in 73 to 333 fathoms.

Ecological data: Found on coarse gravel, sand and broken shell.

Moderately uncommon.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, stations 58, in 75 - 100 fms., living; and 71, in 153 - 164 fms., dead (dredge).

Mitra fulgurita Reeve, 1844

Distribution: Florida Keys and the West Indies, in 73 - 170 fathoms.

Ecological data: Found on coral sand, sand and broken shell. Moderately rare.

Records. - Barbados: Blake, stations 299, in 140 fms. (USNM); 282, in 154 fms.; and in 73 fms. (both MCZ); Diadema, stations 58, in 75 - 100 fms., living (dredge); and 107, in 109 - 138 fms., dead (grab).

Mitra floridana Dall, 1883

Distribution: Marco, Florida to the Florida Keys and the West Indies, in shallow water to 100 fathoms.

Ecological data: Found on sand and shell.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Diadema, stations 49, in 100 fms.; and 67, in 97 fms., both living (dredge).

Mitra cf. torticula Dall, 1889

Remarks: One old, broken shell that seems to be this species was dredged by the Diadema at station 52, in 82 fms., dead, eroded. Bottom of sand, shell and sponge. This form is found in the Florida Strait and the West Indies, in 80 - 400 fathoms.

Mitra sp. a.

Remarks: One dead, old specimen of this undetermined species 16.5 mm. was obtained by the Diadema at station 50, in 100 fathoms (dredge).

Mitra sp. b.

Remarks: Specimens of this undetermined species, occupied by hermit crabs, were obtained by the Diadema at stations 54, in 100 - 125 fms.; and 58, in 75 - 100 fms. Bottom of gravel, sand and shell (dredge). The specimens seem to be juvenile, the largest measuring 13 mm. in length.

Genus Pusia Swainson, 1840

Pusia labocincta (C. B. Adams, 1848)

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Lives under rocks, particularly on rocky bottoms. Rare

in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Pusia histrio Reeve, 1844

Distribution: West Indies, in shallow water.

Ecological data: Lives on rocky bottoms, probably under rocks. Rare in Barbados; occasionally dredged elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Pusia pulchella Reeve, 1845

Distribution: West Indies, in shallow water.

Ecological data: Lives under rocks. Uncommon.

Records. - Barbados: Barbados (Col. Voelker); station 23, living (C.).

Pusia cubana Aguayo and Rehder, (date not obtained)

Distribution: West Indies, in shallow to moderate depths.

Ecological data: Lives associated with rocky bottoms near coral reefs, probably under rocks. Moderately rare.

Records. - Barbados: Diadema, station 55, 125 fms., dead (dredge).

Pusia hanleyi Dohrn, 1861

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. Rare in Barbados; moderately common elsewhere.

Records. - Barbados: Diadema, station 85, in 27 - 54 fms., dead (grab).

Pusia puella Reeve, 1845

Distribution: North Carolina to the Florida Keys and the West Indies, in shallow water.

Ecological data: Lives under rocks. Uncommon.

Records. - Barbados: Stations 18, 23 and 25, living (C.); 38, in 30 ft., living (C. & B.).

Pusia sp.

Remarks: One dead specimen of this undetermined species was obtained by the writer at station 25. The shell measures about 7.5 mm. in length.

Family VOLUTIDAE

Subfamily VOLUTINAE

Genus Voluta Linné, 1758

Voluta musica Linné, 1758

Distribution: Hispaniola south through the Lesser Antilles and south to British Guiana.

Ecological data: Not obtained, probably a sand dweller.

Records. - Barbados: Barbados (Krebs); Barbados, 2 lots (Gov. Rawson; Carpenter Coll.); Barbados (H. J. Kugler); Barbados (F. G. Kellett); Barbados (T. Dranga); Barbados (O. Bryant); Barbados (Grand Rapids Mus.; all MCZ); stations 12, dead (C. & B.); and 32, dead (E.).

Remarks: Henderson (loc. cit.) indicates that this species lives on the weedy patches inside the reefs on the western side of Barbados. We did

not find it.

Family MARGINELLIDAE

Genus Marginella Lamarck, 1799

Subgenus Eratoidea Weinkauff, 1879

Marginella denticulata Conrad, 1830

Distribution: North Carolina to the Gulf of Mexico and the West Indies,
from low-tide to 600 fathoms.

Ecological data: Not obtained. An uncommon form, rare in Barbados.

Records. - Barbados: Diadema, station 109, in 109 - 138 fms., dead (grab).

Marginella denticulata opalina Stearns, 1872

Distribution: North Carolina to the Gulf of Mexico and the West Indies.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Marginella haematita Kiener, 1834

Distribution: Gulf of Mexico and the West Indies, in 37 to 170 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Marginella sulcata d'Orbigny, 1842

Distribution: West Indies, in 100 - 218 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, stations 122, in 164 - 191 fms.; and 128, in 191 - 218 fms., dead (grab).

Marginella seminula Dall, 1881

Distribution: Off Fernandina, Florida, and the West Indies, in 164 to 640 fathoms.

Ecological data: Not obtained. M. abyssorum Tomlin, 1916 is a synonym.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms., dead (grab).

Genus Bullata Jousseaume, 1875

Bullata ovuliformis (d'Orbigny, 1842)

Distribution: Off North Carolina to the Gulf of Mexico and the West Indies, in shallow water to 82 fathoms.

Ecological data: Found on sandy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Diadema, station 91, in 54 - 82 fms., dead (grab).

Genus Persicula Schumacher, 1817

Subgenus Gibberula Swainson, 1840

Persicula lavalleana (d'Orbigny, 1842)

Distribution: Southeast Florida and the West Indies, in shallow water to 40 fathoms.

Ecological data: Found on sandy bottoms. Rare in Barbados; common elsewhere. Reported by Dall as M. minuta Pfr. 1840, a synonym.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, station 122, in 164 - 191 fms., dead (grab).

"Persicula" rubella C. B. Adams, 1845

Distribution: The West Indies.

Ecological data: Found on sandy bottom. Rare.

Records. - Barbados: Diadema, station 55, in 125 fms.

Genus Prunum Herrmannsen, 1852

Subgenus Leptegouana Woodring, 1928

Prunum guttatum (Dillwyn, 1817)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky and sandy bottoms; occasionally on sandy and grassy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Prunum apicinum (Menke, 1828)

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy and grassy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (MTI; MCZ).

Genus Hyalina Schumacher, 1817

Subgenus Volvarina Hinds, 1844

Hyalina avena Kiener, 1834

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. A common species; moderately uncommon in Barbados.

Records. - Barbados: Barbados (krebs); station 25, dead (C.); Diadema, stations 81 and 86, in 27 - 54 fms., dead (grab).

Hyalina avenacea Deshayes, 1844

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water to 750 fathoms.

Ecological data: Lives on rocky bottoms. Uncommon.

Records. - Barbados: Barbados (collector's name not given), (Carpenter Coll.); Diadema, stations 83 and 85, in 27 - 54 fms.; and 89, in 54 - 82 fms., all dead (grab).

Hyalina tenuilabra Tomlin, 1917

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (collector's name not given), (Carpenter Coll.); Blake (station number not given), in 100 fms. (MCZ).

Hyalina subtriplicata d'Orbigny, 1845

Distribution: Florida Keys and the West Indies, in 5 to 111 fathoms.

Ecological data: Not given. Probably occupies the same habitat as the former species. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake (station number not given), in 111 fms. (MCZ).

Hyalina sp.

Remarks: An old, eroded specimen of this undetermined species was obtained by the Hassler in 100 fms. (MCZ). The specimen is quite old and eroded, therefore, it is difficult to identify. It may, however, be one of the shallow water forms.

Family CONIDAE

Genus Conus Linné, 1758

Conus daucus Hwass, 1792

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake, station 272, in 76 fms. (USNM); Barbados, 2 lots (MCZ); Barbados (Col. Voelker).

Conus mus Hwass, 1792

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Lives on and under rocks on rocky bottoms. Common.

Records. - Barbados: Barbados (Gov. Rawson); Barbados (collector's name not given; Carpenter Coll.); Barbados (Thiele); Bathsheba, Hastings and Conset Bay, 3 lots (all MCZ); stations 1 - 5, living (L.); 18 - 24, living (C.); 26, living and 27, dead (P.); 35, dead (E.).

Remarks: This species breeds from mid-April to August and is a copulator, depositing the fertilized eggs in capsules. See Lewis (1960 a).

Conus verrucosus Hwass, 1792

Distribution: Southeast Florida and the West Indies, in shallow to moderate depths.

Ecological data: Lives on sandy and rocky bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados, 2 lots (Gov. Rawson; Carpenter Coll.).

Conus regins Gmelin, 1791

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (MCZ); station 23, living (C.).

Conus granulatus Linné, 1758

Distribution: Southeast Florida and the West Indies, in shallow to moderate depths.

Ecological data: Lives on rocky and sandy bottoms. An uncommon form;

occasionally washed ashore in Barbados.

Records. - Barbados: Barbados (MCZ); Barbados (Col. Voelker); station 23, dead (C.).

Conus dominicanus Hwass, 1792

Distribution: West Indies, in shallow water to 83 fathoms.

Ecological data: Found on sand, broken shells, coralline and sponges.

Rare.

Records. - Barbados: Diadema, station 65, in 71 fms., living (dredge).

Conus mazel Deshayes, 1874

Distribution: The West Indies in 75 to 240 fathoms.

Ecological data: Found on a bottom of sand; sand and shell, and gravel, shell and ooze. Moderately uncommon.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Eolis Junior, in 120 fms. (see Henderson, 1919); Diadema, stations 50, in 100 fms.; 55, in 125 fms.; 58, in 75 - 100 fms.; 59, in 70 - 80 fms.; 66, in 83 fms., dead and living (dredge); and 104, in 82 - 109 fms., dead (grab).

Conus centurio Born, 1780

Distribution: Puerto Plata, Sto. Domingo and Barbados, in 60 to 100 fms.

Ecological data: Found on coral sand; sand and broken shell, and coarse gravel and shell. Rare.

Records. - Barbados: Blake, stations 290, in 73 fms. (MCZ); Eolis Junior, in 60 fms. (USNM), (See Henderson notes); Diadema, station 58, in 75 - 100

fms., dead (dredge).

Conus ranunculus Hwass, 1792

Distribution: Puerto Rico south to northern South America. West Coast of Africa, in shallow water.

Ecological data: Not given. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Remarks: The above record was not included in Johnsonia. See Vol. I, No. 6, pp. 33 - 34 (1942).

Conus clerii Reeve, 1844

Distribution: Barbados and Cabo de Sao Thomé, Brazil, in 35 to 131 fms.

Ecological data: Found on a bottom of sand, and sand, shell and sponge.

Moderately rare in Barbados; rare elsewhere.

Records. - Barbados: Diadema, stations 51, in 100 fms.; 55, in 125 fms.; 57, in 131 fms., dead (dredge); 66, in 83 fms.; and 104, in 82 - 109 fms., dead (grab).

Conus fosteri Clench and Aguayo, 1942

Distribution: North and South of Cuba, and Barbados, in 125 to 260 fathoms.

Ecological data: Found on coarse gravel and shell. Rare.

Records. - Barbados: Diadema, station 55, in 125 fms., dead (dredge).

Conus villepinii Fischer and Bernardi 1857

Distribution: Virgin Island and the Lesser Antilles, in 38 to 175 fms.

Ecological data: Found on coarse coral, sand and broken shell, and hard bottom. Rare.

Records. - Barbados: Blake, station 290, in 73 fms.; 272, in 76 fms.; and 296, in 84 fms. (all MCZ); Diadema, stations 55, in 125 fms.; and 71, in 153 - 164 fms., dead (dredge).

Conus bermudensis Clench, 1942

Distribution: Bermuda and Barbados, in 83 to 100 fathoms.

Ecological data: Found on sand shell, and coarse gravel and shell.

Moderately uncommon in Barbados. Rare in Bermuda.

Records. - Barbados: Diadema, stations 50, in 100 fms., 58, in 75 - 100 fms., dead; and 66, in 83 fms., living (all dredge).

Conus braziliensis Clench, 1942

Distribution: Barbados and Brazil, in 100 - 131 fathoms.

Ecological data: Found on sand, and sand and shell bottoms. Moderately uncommon.

Records. - Barbados: Diadema, stations 50, in 100 fms.; and 57, in 131 fms., dead (dredge).

Conus cf. juliae Clench, 1942

Remarks: Specimens of what seems to be this species (from off the West Coast of Florida) were obtained by the Diadema at stations 54, in 100 - 125 fms.; 55, in 125 fms.; 58, in 75 - 100 fms.; and 66, in 83 fms. All dead. Bottom of gravel, sand and ooze; and coarse, gravel, sand and shell.

Conus flavescens Sowerby, 1833⁴

Distribution: Southern Florida, Bahamas and the West Indies, in shallow to moderate depths.

Ecological data: Lives on sandy and rocky bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Blake, station 290, in 73 fms. (USNM).

Conus sp. a.

Remarks: Several juvenile individuals of this undetermined species were obtained by the Diadema at station 55, in 125 fms.; and 58, in 75 - 100 fms. Bottom of sand, and coarse gravel and shell.

Conus sp. b.

Remarks: Several specimens, one taken alive, were dredged by the Diadema at stations 49, in 100 fms.; and 71, in 153 - 164 fms. The latter living on a bottom of rock and sand. The largest individual measures 26 mm. (1-1/16").

Conus sp. c.

Remarks: This undetermined species consists of three specimens, 2 obtained alive, which were dredged by the Diadema at stations 55, in 100 - 125 fms.; 58, in 75 - 100 fms.; and 65, in 71 fms. Bottom of sand, and coarse gravel and shell.

Conus sp. d.

Remarks: One dead specimen of a shell measuring 43 mm. (over 1-11/16") was dredged by the Diadema at station 57, in 131 fms. Bottom of coarse gravel and shell.

The subgeneric position of the members of the family Conidae in the Western Atlantic has not been established as yet. See Johnsonia Vol. I, No. 6, p. 36, 1942. More material is needed, specially individuals showing different growth stages in order to compare with some of the species recorded.

Family TEREBRIDAE

Genus Terebra Bruguière, 1789

Terebra cinerea (Born, 1778)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Uncommon.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Barbados (F. G. Kellett); Barbados (W. M. Branch); Barbados (B. Lungren); (all MCZ); Barbados (Col. Voelker); stations 11, dead (C. & B.); and 23 and 25, dead (C.).

Terebra hastata Gmelin, 1791

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (MCZ).

Terebra taurina (Solander, 1786)

Distribution: Southeast Florida to the Gulf of Mexico and the West Indies, in shallow to moderate depths.

Ecological data: Found on sandy and muddy bottoms. Rare in Barbados; uncommon in the Gulf of Mexico.

Records. - Barbados: Bridgetown (no depth given), in Watson's Collection. See Henderson notes, 1919.

Terebra limatula var. acrior Dall, 1889

Distribution: Puerto Rico and Barbados, in shallow water to 100 fathoms.

Ecological data: Not given. Probably dwells on sandy bottoms. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Family TURRIDAE

Subfamily TURRINAE

Genus Gemmula Weinkauff, 1875

Gemmula periscedida (Dall, 1889)

Distribution: Off Cape Hatteras, North Carolina and the West Indies, in 100 to 410 fathoms.

Ecological data: Found on rock and shell fragments. Rare.

Records. - Barbados: Diadema, station 74, in 213 fms., dead (dredge).

Genus Polystira Woodring, 1928

Polystira tellea (Dall, 1889)

Distribution: Gulf of Mexico and the West Indies, in 61 to 138 fathoms.

Ecological data: Lives on ooze, sand and gravel bottoms. Uncommon.

Records. - Barbados: Hassler, in 100 fms. (MCZ); Diadema, stations 49, in 100 fms.; 50, in 100 fms.; 54, in 100 - 125 fms.; 55, in 125 fms.; 69, in 120 - 138 fms. Living and dead (dredge); and 130, in 100 fms., dead (fish pot).

Polystira vibex (Dall, 1889)

Distribution: Gulf of Mexico and the West Indies, in 80 to 150 fathoms.

Ecological data: Lives on ooze, sand and gravel bottom. Uncommon.

Records. - Barbados: Diadema, stations 49, in 100 fms.; 50, in 100 fms.; 54, in 100 - 125 fms.; and 55, in 125 fms., living and dead (dredge).

Polystira albida (Perry, 1811)

Distribution: Gulf of Mexico and the West Indies, in 26 to 125 fathoms.

Ecological data: Lives on muddy bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Subfamily COCHLESPIRINAE

Genus Ancistrotyrinx Dall, 1881

Ancistrotyrinx radiata Dall, 1889

Distribution: Gulf of Mexico and the West Indies, in 26 to 640 fathoms.
Ecological data: Lives on sandy and gravelly bottoms. Moderately uncommon.
Records. - Barbados: Hassler (station number and depth not given); Blake, station 273, in 103 fms.; and in 123 fms. (all MCZ); Blake, stations 290, in 73 fms.; 296, in 84 fms.; and 299, in 140 fms. (all USNM); Diadema, stations 49, in 100 fms., living; 58, in 75 - 100 fms., living; and 71, in 153 - 164 fms., dead (all dredge).

Ancistrosyrinx elegans Dall, 1881

Distribution: Off Florida and the West Indies, in 153 to 640 fathoms.
Ecological data: Found on hard bottom. Rare.
Records. - Barbados: Blake (station number not given), in 180 fms. (MCZ).
Remarks: This record was not included in the MCZ-Bulletin.

Subfamily CLAVINAE

Genus Crassispira Swainson, 1840

Subgenus Crassispirella Bartsch and Rehder, 1939

Crassispira ostrearum (Stearns, 1872)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.
Ecological data: Found on coarse sand and shell, hard bottom. Rare in Barbados; uncommon elsewhere.
Records. - Barbados: Blake, station 272, in 76 fms. (MCZ).

Crassispira alesidota var. macilenta (Dall, 1889)

Distribution: Off Cape Hatteras, North Carolina and Barbados, in 75 to 111 fathoms.

Ecological data: Not given.

Records. - Barbados: Diadema, station 58, in 75 - 100 fms. (dredge);

Blake, station 272, in 76 fms. (USNM); station 273, in 103 fms. (MCZ).

Crassispira leucocyma (Dall, 1883)

Distribution: Southern Florida and the West Indies, in shallow water.

Ecological data: Not given. Probably lives on rocky bottoms. A common species; rare in Barbados.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Crassispira sp.

Remarks: One dead specimen of this undetermined species was obtained by Clarke and Bousfield at station 37, in 20 ft. deep. This is a small species 4 mm. in length. It resembles the former species from which it differs in detail of sculpture.

Genus Compsodrillia Woodring, 1928

Compsodrillia tristicha (Dall, 1889)

Distribution: Gulf of Mexico and the West Indies, in 111 to 200 fathoms.

Ecological data: Found on sand and rocks. Moderately rare.

Records. - Barbados: Diadema, station 71, in 153 - 164 fms., dead (dredge).

Compsodrillia oleascina (Dall, 1881)

Distribution: Gulf of Mexico and the West Indies, in 191 to 340 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Diadema, station 126, in 191 - 218 fms., dead (dredge).

Genus Drillia Gray, 1838

Drillia tryonii Dall, 1889

Distribution: Lesser Antilles, in 75 to 125 fathoms.

Ecological data: Found on sand and shell, and sand, coarse gravel and shell. Uncommon in Barbados.

Records. - Barbados: Blake, station 272, in 76 fms.; and in 100 fms. (Both MCZ); Diadema, stations 50, in 100 fms., living; 55, in 125 fms., living; 58, in 75 - 100 fms., dead (dredge); and 97, in 82 - 109 fms., dead (grab).

Drillia coccinata Reeve, 1845

Distribution: The West Indies, in shallow to moderate depth.

Ecological data: Found on sandy and rocky bottoms. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ); Diadema, station 55, in 125 fms., dead (dredge).

Drillia sp. a.

Remarks: This is a very large shell, 47 mm. (1-14/16") in length. It was

obtained by the Diadema at station 47, in 50 - 75 fms. Bottom of coarse sand and shell.

"Drillia" sp. b.

Remarks: This undetermined species consists of two dead, eroded specimens which measure 11 mm. in length. They were dredged by the Diadema at station 55, in 125 fathoms. Bottom of sand.

"Drillia" sp. c.

Remarks: This undetermined species consists of one old, eroded specimen which was dredged by the Blake at station 273, in 103 fathoms. Bottom of coral and broken shell. This shell is in the Museum of Comparative Zoology.

Genus Nonilispira Bartsch and Rehder, 1939

Monilispira albinodata Reeve, 1845

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. Uncommon.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); station 37, in 20 ft., dead (C. & B.); stations 23 and 25, living (C.); 31, dead (E.).

Genus Cerodrillia Bartsch and Rehder, 1939

Cerodrillia nucleata (Dall, 1881)

Distribution: Gulf of Mexico and the West Indies, in 54 to 464 fathoms.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Diadema, station 125, in 191 - 218 fms., dead (grab).

Cerodrillia thea var. carminura (Dall, 1889)

Distribution: Off southern Florida, Gulf of Mexico and Barbados, in 100 to 111 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Genus Syntomodrillia Woodring, 1928

Syntomodrillia albicoma (Dall, 1889)

Distribution: Gulf of Mexico and the West Indies, in 84 to 805 fathoms.

Ecological data: Not given.

Records. - Barbados: Hassler (station number not given), in 100 fms., fragments, (USNM); Diadema, stations 50, in 100 fms., dead; 55, in 125 fms., living; 58, in 75 - 100 fms., dead; 59, in 70 - 80 fms., dead, and 71, in 153 - 164 fms., living (all dredge).

Syntomodrillia woodringi Bartsch, 1934

Distribution: Gulf of Mexico and the West Indies, in 73 to 248 fathoms.

Ecological data: Found on sandy bottom. Drillia lissotropis Dall, 1881 is a synonym.

Records. - Barbados: Blake, stations 273, in 103 fms.; 282, in 154 fms.; and 290, in 73 fms. (USNM); Diadema, stations 55, in 125 fms., dead (dredge); and 107, in 109 - 138 fms., dead (grab).

Syntomodrillia sp.

Remarks: This species consists of an spiral fragment of a shell which may be the former species. It was obtained by the Diadema at station 69, in 97 fms. (dredge).

Genus Douglassia Bartsch, 1934

Douglassia pagodula (Dall, 1889)

Distribution: Florida and the West Indies, in 50 to 175 fathoms.

Ecological data: Found on a bottom of coral and sand. Rare.

Records. - Barbados: Blake, stations 273, in 103 fms.; 282, in 154 fms.; and 290, in 73 fms. (all MCZ).

Douglassia sp. a.

Remarks: One specimen of this undetermined species was found by the Diadema at station 71, in 153 - 164 fms. Bottom of sand and rock. This shell measures about 14 mm. in length.

Douglassia sp. b.

Remarks: One specimen of this interesting undetermined species was obtained by the Diadema at station 88, in 54 - 82 fms. This shell measures about 7 mm. in length.

Douglassia sp. c.

Remarks: This undetermined species consists of one specimen, apparently juvenile, measuring 8 mm. in length. It was obtained by the Diadema at station 83, in 27 - 54 fms.

Douglassia sp. d.

Remarks: This is an interesting species resembling "Pleurotoma" angustae C. B. Adams, 1850. Two specimens were obtained by the Diadema at stations 65, in 71 fms.; and 55, in 125 fms., dead (dredge). Bottom of sand and rocks.

Genus Inodrillia Bartsch, 1943

Subgenus Inodrillara Bartsch, 1943

Inodrillia aepynota (Dall, 1889)

Distribution: Off Cape Hatteras, North Carolina to Florida and Barbados, in 25 to 125 fathoms.

Ecological data: Found on sand, and coarse gravel and shell. Moderately uncommon.

Records. - Barbados: Diadema, stations 55, in 125 fms.; and 58, in

75 - 100 fms., dead (dredge).

Family MANGELIINAE

Genus Mangelia Risso, 1826

"Mangelia" caribaea d'Orbigny, 1845

Distribution: The West Indies, in shallow water to 100 fms.

Ecological data: Not given. Probably lives on rocky bottoms. Rare in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

"Mangelia" lavalleana (d'Orbigny, 1846)

Distribution: West Indies, in shallow water.

Ecological data: Not given. Probably lives on rocky bottoms.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

"Mangelia" sp.

Remarks: This record consists of a dead shell dredged by the Balke in 100 fms. off Barbados. The specimen is in the Museum of Comparative Zoology.

Genus Glyphoturris Woodring, 1928

Glyphoturris quadrata (Reeve, 1845)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Not obtained. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Diadema, station 91, in 54 - 82 fms., dead (grab).

Genus Saccharoturris Woodring, 1928

Saccharoturris monocingulata (Dall, 1889)

Distribution: Barbados, in 100 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Genus Cryoturris Woodring, 1928

Cryoturris havanensis (Dall, 1881)

Distribution: Yucatan Strait and Barbados, in 164 to 450 fathoms.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Diadema, station 122, in 164 - 191 fms., dead (grab).

Cryoturris filifera (Dall, 1881)

Distribution: Gulf of Mexico and Barbados, in 100 to 331 fathoms.

Ecological data: Found on gravel, sand and ooze. Rare.

Records. - Barbados: Diadema, station 54, in 100 - 125 fms., dead (dredge).

Genus Microdrillia Casey, 1903

Microdrillia comatotropis (Dall, 1881)

Distribution: Off Martha's Vineyard, Mass., to the Lesser Antilles, in 50 to 1,075 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Genus Tenaturris Woodring, 1928

Tenaturris bartletti (Dall, 1889)

Distribution: Southeast Florida and the West Indies, in shallow water to 450 fathoms.

Ecological data: Found on sandy and rocky bottom.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Genus Kurtziella Woodring, 1918

Kurtziella atrostyla (Dall, 1889)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 100 - 333 fathoms.

Ecological data: Found on sand.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Genus Pyrgocythara Woodring, 1928

Pyrgocythara pharcida (Dall, 1889)

Distribution: Florida Strait, Gulf of Mexico and the West Indies, in

150 to 1,002 fathoms.

Ecological data: Not given. Drillia exasperata Dall, 1881 (not Reeve, 1843) is a synonym.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ)

Genus Ithycythara Woodring, 1928

Ithycythara lanceolata C. B. Adams, 1850

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Not obtained. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); Diadema, station 112, in 109 - 138 fms., dead (dredge).

Ithycythara cimella (Dall, 1889)

Distribution: Gulf of Mexico and the West Indies, in 100 to 220 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Genus Platycythara Woodring, 1928

Platycythara sp.

Remarks: This undetermined species is represented by one shell measuring 13 mm. It was dredged by the Diadema at station 55, in 100 - 125 fms.

Bottom of sand.

Subfamily CONORBIINAE

Genus Genota H. and A. Adams, 1853

Genota viabrunnea Dall, 1889

Distribution: South Cuba to the Lesser Antilles, in 180 to 357 fathoms.

Ecological data: Lives on sandy bottoms. Rare.

Records. - Barbados: Blake, station 295, in 180 fms. (USNM).

Subfamily BORSONIINAE

Genus Borsonia Bellardi, 1838

Borsonia rouaultii (Dall, 1889)

Distribution: Known only from Barbados, in 103 fathoms.

Ecological data: Found on coarse sand and shell, and coral and broken shell. Rare.

Records. - Barbados: Blake, station 272, and 273, in 103 fms. (MCZ).

Genus Mitromorpha P. P. Carpenter, 1865

Mitromorpha biplicata Dall, 1889

Distribution: Off Fernandina, Florida, south through the West Indies to Barbados, in 100 fathoms.

Ecological data: Not obtained. Moderately rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Diadema, stations 88 and 90, in 54 - 82 fms.; 107, in 109 - 138 fms.; and

122, in 164 - 191 fms., all dead (grab).

Subfamily DAPHNELLINAE

Genus Daphnella Hinds, 1844

Daphnella pompholyx Dall, 1889

Distribution: Off Fernandina, Florida and Barbados, in 103 - 249 fms.

Ecological data: Found on sand and rocks, coral and broken shell, and coral and corallines. Rare.

Records. - Barbados: Blake, station 273, in 103 fms. (MCZ); station 299, in 140 fms. (USNM); Diadema, station 71, in 153 - 164 fms., dead (dredge).

Daphnella morra Dall, 1881

Distribution: North Carolina to Florida and Barbados, in 22 to 450 fms.

Ecological data: Not obtained.

Records. - Barbados: Diadema, station 88, in 54 - 82 fms., dead (grab).

Daphnella corbicula Dall, 1889

Distribution: Off North Carolina and Barbados, in 49 - 63 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Daphnella lymneiformis (Kiener, 1840)

Distribution: Southeast Florida and the West Indies, in shallow water to 25 fathoms.

Ecological data: Found in reef-sand. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.).

Daphnella reticulosa Dall, 1889

Distribution: Off Fernandina, Florida and Barbados, in 76 to 294 fms.

Ecological data: Found on coarse sand and shell, hard bottom. Rare.

Records. - Barbados: Blake, station 272, in 76 fms.

Daphnella sp. a.

Remarks: This is a tiny shell measuring about 6 mm. It was obtained by the Diadema at station 108, in 109 - 138 fms. It seems to be a juvenile stage of the individual. The spire of a shell that seems to be the same form, dredged by the Hassler in 100 fms., is in the U. S. National Museum.

Daphnella sp. b.

Remarks: A dead, minute shell of this undetermined species was obtained by the Diadema at station 129, in 191 - 218 fms. The specimen measures about 4 mm. in length.

Genus Pleurotomella Verrill, 1873

Pleurotomella catasarca Dall, 1889

Distribution: The West Indies, in 200 to 874 fathoms.

Ecological data: Found on stony bottom. Rare.

Records. - Barbados: Blake, station 291, in 200 fms. (USNM).

Pleurotomella sp.

Remarks: This is an interesting shell, measuring 14 mm. in length and was dredged by the Diadema at station 71, in 153 - 164 fathoms. Bottom of rocks and sand.

Genus Glyphostoma Gabb, 1872

Glyphostoma gabbi Dall, 1889

Distribution: Florida Strait, Gulf of Mexico and the West Indies, in 30 to 250 fathoms.

Ecological data: Found on sand and shell, gravel sand and ooze, and sand, shell and sponge. Moderately common.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, stations 49, in 100 fms.; 52, in 82 fms.; 54, in 100 - 125 fms.; 55, in 125 fms.; 57, in 131 fms.; 59, in 70 - 80 fms.; and 108, in 109 - 138 fms., living and dead (dredge and grab).

Glyphostoma sp.

Remarks: This is a very interesting form resembling this species, but it is more elongated and has a more extended anterior canal. Specimens were dredged alive by the Diadema at stations 54, in 100 - 125 fms., and 55, in 125 fms.

Subgenus Lioglyphostoma Woodring, 1928

Glyphostoma sp.

Remarks: This is a tiny shell measuring 6 mm. in length. It was obtained by the Diadema at station 107, in 109 - 138 fms. (grab).

SUBCLASS OPISTHOBRANCHIA

ORDER TECTIBRANCHIA

Family ACTEONIDAE

Genus Acteon Montfort, 1810

Acteon finlayi McGinty, 1955

Distribution: Off Palm Beach, La Chorrera, Haban, Cuba and Barbados, in 3 to 40 fathoms.

Ecological data: Found on rocks and shell fragments. Rare in Barbados; uncommon at La Chorrera, Habana, Cuba, in 3 to 15 fms. Bottom of reef-sand.

Records. - Barbados: Diadema, station 64, in 67 fms., dead (dredge).

Acteon sp.

Remarks: This is a tiny, very interesting shell measuring 2.75 mm. in length. It was obtained by the Diadema at station 90, in 54 - 82 fms., dead (grab).

Acteon delicatus Dall, 1889

Distribution: Florida Strait, Gulf of Mexico and the West Indies, in

73 to 400 fathoms.

Ecological data: Found in coarse sand, coral and broken shell. Rare.

Records. - Barbados: Blake, station 290, in 73 fms. (USNM).

Family RINGICULIDAE

Genus Ringicula Deshayes, 1838

Ringicula semistriata d'Orbigny, 1845

Distribution: North Carolina to Florida and the West Indies, in 34 to 218 fathoms.

Ecological data: Not obtained.

Records. - Barbados: Diadema, stations 122, in 164 - 191 fms.; and 125, in 191 - 218 fms., both dead (grab).

Family HYDATINIDAE

Genus Micromelo Pilsbry, 1894

Micromelo undata (Bruguière, 1792)

Distribution: Lower Florida Keys and the West Indies, in the surf and low-tide zone.

Ecological data: Lives on rocks. Moderately uncommon.

Records. - Barbados: Station 31 (E.).

Family BULLIDAE

Genus Bulla Linné, 1753

Bulla striata Bruguiere, 1792

Distribution: West Florida to Texas and the West Indies, in shallow water.

Ecological data: Lives on shallow grassy and sandy bottoms, and in reef-sand. A common form occasionally washed ashore on Barbados and elsewhere.

Records. - Barbados: Barbados (Krebs); Bathsheba; Conset Bay; and Pelican Island (all MCZ); Barbados (Col. Voelker); Barbados (Thiele); stations 11, 16 and 37, dead (C. & B.); stations 18, 23 and 25, dead (C.); stations 34 and 35, dead (E.).

Family ATYIDAE

Genus Atys Montfort, 1810

Atys sp.

Remarks: This species consists of two dead specimens, one in a very young developmental stage. They were obtained with the grab apparatus by the Diadema at stations 79 and 80, in 27 - 54 fms.

Family RETUSIDAE

Genus Retusa Brown, 1827

Retusa perplicata (Dall, 1889)

Distribution: Florida Strait and the West Indies, in 100 to 200 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, station 128, in 191 - 218 fms., dead (grab).

Retusa vortex (Dall, 1881)

Distribution: East of Georges Bank to off Chesapeake Bay and Barbados, in 164 - 1,356 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Diadema, stations 122, in 164 - 191 fms.; and 126, in 191 - 218 fms., dead (grab).

Remarks: Our records extend considerably the southern range of this species.

Retusa parva Dall, (date not obtained)

Distribution: Not recorded.

Ecological data: Not obtained. Rare.

Records. - Barbados: Diadema, station 107, in 109 - 138 fms., dead (grab).

Retusa sp. a.

Remarks: Five dead specimens of this undetermined species were obtained by the Diadema with the Petersen grab at station 122, in 164 - 191 fms.

Retusa sp. b.

Remarks: One dead specimen of this minute shell measuring 2.25 mm. was obtained by Clarke and Bousfield at station 11.

Genus Rhizorus Montfort, 1810

Rhizorus acutus (d'Orbigny, 1842)

Distribution: Cape Hatteras, North Carolina and the West Indies, in 15 to 138 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms.;

Diadema, station 108, in 109 - 138 fms., dead (grab).

Family ACTEOCINIDAE

Genus Cylichna Loven, 1846

Subgenus Cylichnella Gabb, 1872

Cylichna bidentata (d'Orbigny, 1841)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water to 200 fathoms.

Ecological data: Not given. A common form; rare in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms.

Family SCAPHANDRIDAE

Genus Scaphander Montfort, 1810

Scaphander watsoni Dall, 1881

Distribution: Off Cape Hatteras, North Carolina and the West Indies, in 7 to 168 fathoms.

Ecological data: Not given. A common form.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); station 290, in 73 fms. (USNM); Diadema, stations 49, in 100 fms.; 50, in 100 fms.; 54, in 100 - 125 fms.; 55, in 100 - 125 fms.; 57, in 131 fms.; 59, in 70 - 80 fms.; 69, in 120 - 138 fms., (dredge); and 92, in 54 - 82 fms. (grab). All dead.

Scaphander punctostriatus Mighels, 1841

Distribution: Arctic Seas to Florida and the West Indies, in 20 to 1,467 fathoms.

Ecological data: Found in Globigerina ooze and broken shells. Rare in Barbados; common elsewhere.

Records. - Barbados: Blake, station 281, in 288 fms.

Family PHILINIDAE

Genus Philine Ascanius, 1772

Philine planata Dall, 1889

Distribution: Lesser Antilles.

Ecological data: Found on bottoms of coral and corallines, fine sand and ooze, and stones. Rare.

Records. - Barbados: Blake, stations 291, in 200 fms.; 299, in 140 fms.; and 274, in 209 fms. (all MCZ).

Philine sp.

Remarks: This is a very interesting, tiny shell measuring about 1.5 mm.

in length. It was obtained by the Diadema at station 122, in 164 - 191 fms., dead (grab).

Family PYRAMIDELLIDAE

Genus Pyramidella Lamarck, 1799

Pyramidella dolabrata (Linné, 1758)

Distribution: Southern Florida, and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. A common species; rare in Barbados.

Records. - Barbados: Station 31, dead (E.).

Pyramidella candida Morch, 1875

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Pyramidella folinii Dall, 1889

Distribution: Known only from near Barbados, in 98 fathoms.

Ecological data: Found on sandy bottom. Rare.

Records. - Barbados: Barbados, in 98 fms. (USFC; USNM).

Genus Odostomia Fleming, 1817

Odostomia sp. a.

Remarks: One dead specimen of a shell measuring 5 mm. was obtained by the Diadema with the grab apparatus at station 123, in 191 - 218 fms.

Odostomia sp. b.

Remarks: This is a tiny, dead shell, probably a juvenile individual; measuring about 3 mm. in length. It was obtained by the Diadema at station 122, in 164 - 191 fms. (grab).

Odostomia sp. c.

Remarks: This species consists of a dead shell measuring 4 mm. in length. It was obtained by the Diadema at station 122, in 164 - 191 fms. (grab). Many species within this genus are found along the eastern coast of the United States. Revision of this group and others in the Pyramidellidae is badly needed.

Odostomia sp. d.

Remarks: This is a minute shell measuring 3 mm. in length. One dead specimen was obtained by the Diadema at station 81, in 27 - 54 fms. (grab).

Odostomia sp. e.

Remarks: One dead specimen of this undetermined species was obtained by Clarke and Bousfield at station 11.

Genus Turbonilla Risso, 1826

Subgenus Strioturbonilla Sacco, 1892

Turbonilla belothea Dall, 1889

Distribution: Gulf of Mexico and the West Indies, in 50 to 95 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Turbonilla pusilla C. B. Adams, 1850

Distribution: North Carolina to Florida and the West Indies, in 16 to 294 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Turbonilla interrupta fulvocincta Jeffreys, 1884

Distribution: Shediac Bay, New Brunswick to Prince Edward Island, in 2 - 100 fathoms.

Ecological data: Not given.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Turbonilla sp. a.

Remarks: One specimen of a dead shell, measuring 4.5 mm. was obtained by the Diadema in the grab samples at station 84, in 27 - 54 fms. This shell shows interesting axial sculpture.

Turbonilla sp. b.

Remarks: This species consists of one dead specimen of a shell about the same length as the former which it resembles in detail of sculpture. It was obtained by the Diadema at station 122, in 164 - 191 fms.

Turbonilla sp. c.

Remarks: One old, eroded specimen of a minute species was obtained by the Diadema in the grab sample at station 81, in 27 - 54 fms. The shell measures about 2 mm. in length.

ORDER PTEROPODA

SUBORDER THECOSOMATA

Family CAVOLINIDAE

Genus Clio Linné, 1767

Clio pyramidata Linné, 1767

Distribution: Worldwide. Pelagic.

Records. - Barbados: Diadema, stations 50, in 100 fms.; 51, in 82 fms.; and 57, in 131 fms. (all dead).

Genus Cavolina Abildgaard, 1791

Cavolina longirostris Lesueur, 1821

Distribution: Worldwide (47° N. to 40° S.). Pelagic.

Records. - Barbados: Diadema, stations 57, in 131 fms.; and 90, in 54 - 82 fms. (all dead).

Cavolina trispinosa Lesueur, 1821

Distribution: Worldwide (60° N. to 41° S.). Pelagic.

Records. - Barbados: Diadema, station 51, in 82 fms. (all dead).

Cavolina uncinata Rang, 1836

Distribution: Worldwide (40° N. to 40° S.). Pelagic.

Records. - Barbados: Diadema, stations 51, in 82 fms.; and 54, in 100 fms. (All dead).

Cavolina tridentata (Forsk., 1775)

Distribution: Worldwide (40° N. to 40° S.). Pelagic.

Records. - Barbados: Diadema, stations 55, in 125 fms.; and 57, in 131 fms. (all dead).

Cavolina gibbosa Rang, 1836

Distribution: Worldwide (43° N. to 38° S.). Pelagic.

Records. - Barbados: Diadema, stations 55, in 125 fms.; 56, in 100 fms.; and 59, in 70 80 fms. (all dead).

SUBCLASS PULMONATA

ORDER BASOMMANTOPHORA

SUBORDER ACTOPHILA

Family ELLOBIIDAE

Genus Pedipes Férussac, 1821

Pedipes mirabilis Muhlfield, 1818

Distribution: Bermuda, Florida and Texas, and the West Indies south to

Sao Paulo, Brazil.

Ecological data: This is a gregarious form occurring on rocky substrate near the high tide level, particularly in estuarine areas. Occasionally washed ashore in beach drift. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (USNM).

Genus Tralia Gray, 1840

Tralia ovula (Bruguière, 1789)

Distribution: Bermuda, Florida and the West Indies.

Ecological data: Lives above the tide line where brackish water conditions exist. Common in some areas; rare in Barbados.

Genus Melampus Montfort, 1810

Melampus coffeus (Linné, 1758)

Distribution: Florida and the West Indies.

Ecological data: Lives on plants in mangrove swamps and semi-estuarine areas. Found by Lewis (1960a) upon a limestone wall. Uncommon in Barbados; common elsewhere.

Records. - Barbados: Station 2, living (L.).

Subgenus Pira H. and A. Adams, 1855

Melampus monile Bruguière, 1789

Distribution: Florida and the West Indies.

Ecological data: Lives on salt flats. Frequently washed ashore in many areas; rare in Barbados. Melampus flavus Gmelin, 1791 is a synonym.

Records. - Barbados: Station 35, dead (E.).

CLASS AMPHINEURA

ORDER CHITONIDA

Family LEPIDochITONIDAE

Genus Lepidochitona Gray, 1821

Lepidochitona liozonis Dall and Simpson, 1901

Distribution: Puerto Rico and Barbados, in shallow water.

Ecological data: Lives under rocks. A rare form. Listed by Thiele as Trachydermon liozonis.

Records. - Barbados: Barbados (Thiele).

Family MOPALIIDAE

Genus Ceratozona Dall, 1882

Ceratozona squalida (C. B. Adams, 1845)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on rocky shores just above the surf zone (Pink and Green zones in Barbados). A common form; moderately uncommon in Barbados. Ceratozona rugosa Sby. is a synonym.

Records. - Barbados: Stations 19 and 21, living (C.).

Remarks: This species should not be confused with juvenile individuals of Acanthopleura granulata which is found in the same habitats.

Family ISCHNOCHITONIDAE

Genus Ischnochiton Gray, 1847

Subgenus Stenoplax Carpenter, 1878

Ischnochiton limaciformis (Sowerby, 1832)

Distribution: Florida Keys, the West Indies, Central America and Peru, in shallow water.

Ecological data: Lives on the underside of rocks, particularly on rocky bottoms. Moderately uncommon. Ischnochiton purpurascens (C. B. Adams, 1845) is a synonym.

Records. - Barbados: Barbados (Reeve; in Arango); Bathsheba (Thiele);

Barbados (Gov. Rawson; Carpenter Coll.); stations 22 and 23, living (C.).

Remarks: Thiele erroneously listed this species as Ischnochiton productus Reeve, a similar form from Africa which has been referred to as a variety of the former.

Ischnochiton striolatus (Gray, 1828)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on the underside of rocks, particularly on rocky bottoms. Uncommon. Co-exists with the former species.

Records. - Barbados: St. James (Thiele); Barbados (Gov. Rawson; Carpenter Coll.); stations 22, 23 and 25, living (C.).

Subgenus Ischnoplax (Carpenter) Dall, 1878

Ischnochiton pectinatus Sowerby, 1832

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Occupies the same habitat as the former species.

Moderately uncommon in Barbados; common in other areas. Ischnochiton multicostatus (C. B. Adams, 1845) is a synonym.

Records. - Barbados: Bathsheba (Thiele); Barbados (Reeve; in Arango, 1878); stations 22 and 23, living (C.).

Family CHITONIDAE

Subfamily CHITONINAE

Genus Chiton Linné, 1758

Chiton tuberculatus Linné, 1758

Distribution: Florida to Texas and the West Indies, in shallow water.

Ecological data: Lives under large rocks. Common.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Bathsheba (Thiele); stations 1 - 7 (L.); 18 (C.); 26 and 27 (P.).

Remarks: The record by Rawson consists of a mixed lot with material from Jamaica collected by C. B. Adams. Carpenter Coll. Cat. No. 218

Chiton marmoratus Gmelin, 1791

Distribution: Florida Keys and the West Indies.

Ecological data: Lives on rocky shores in the intertidal zone. (Pink and Green zones at Barbados). A common species.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Bathsheba (Thiele); stations 1 - 7 (L.); 18 and 24 (C.); and 26 (P.).

Remarks: The record by Gov. Rawson refers to a mixed lot consisting of material (6 specimens) from St. Vincent, Bermuda, Guadalupe and Barbados and credited to W. B. Canfield, C. B. Adams, T. Bland and Gov. Rawson. Carpenter Coll. Cat. No. 234.

Chiton sp.

Remarks: This species consists of a shell measuring 33 - 35 mm. in

length and about 19 mm. wide, having unusual color and sculpture. One living specimen was obtained by the Diadema at station 71, in 153 - 164 fms.

Remarks: This species was erroneously identified by a colleague as Chiton ss. possibly squamosus which is not a sublittoral form.

Subfamily ACANTHOPLEURINAE

Genus Acanthopleura, Guilding, 1829

Subgenus Maugeria Gray, 1857

Acanthopleura granulata Gmelin, 1791

Distribution: Southern Florida, Texas and the West Indies.

Ecological data: Lives on rocky shores at intertidal levels.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Bathsheba (Thiele); stations 1 - 7 (L.); 18 and 24 (C.); and 26 (P.).

Genus Tonicia Gray, 1847

Tonicia schrammi Shuttleworth, 1856

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on corals (Porites). Moderately common; rare in Barbados.

Records. - Barbados: Station 37, in 20 ft., living (C. & B.).

CLASS SCAPHOPODA

Family SIPHONODONTALIDAE

Genus Cadulus Philippi, 1884

Subgenus Polyschides Pilsbry and Sharp, 1898

Cadulus quadridentatus Dall, 1881

Distribution: Bermuda, off Cape Hatteras, North Carolina to the Gulf of Mexico and through the West Indies to off Rio de la Plata, Argentina, in 2 to 52 fathoms.

Ecological data: Not given. A common form.

Records. - Barbados: Eolis Junior (station number not given), off Carlisle Bay, in 6 and 12 fms.; and Barbados (station number not given), in shallow water (USNM).

Remarks: This species is found in the Pliocene of St. Petersburg, Florida. Besides the typical form, there is a small race which is limited to Barbados. (See Henderson, p. 99, 1920).

Subgenus Platyschides Henderson, 1920

Cadulus parvus Henderson, 1920

Distribution: Off the Florida Keys and the West Indies, in 33 to 1,002 fathoms.

Ecological data: Not given. A moderately rare species.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM; MCZ); Eolis Junior (station 44), in 90 - 100 fms. (MCZ; USNM); Eolis Junior, (station 61), in 33 fms.; (station 27), in 85 - 90 fms.;

(station 3), in 75 - 80 fms.; (station 13), in 80 fms.; (station 115), in 120 fms. (all USNM).

Cadulus bushii (Dall, 1889)

Distribution: Known only from Barbados, in 27 - 100 fathoms.

Ecological data: Not obtained.

Records. - Barbados: Blake (station number not given), in 100 fms., (MCZ; USNM); Eolis Junior (station 48), in 80 fms., (MCZ; USNM); (station 51), in 35 fms.; (station 69), in 60 - 70 fms.; (station 3), in 75 - 80 fms.; (station 88), depth not given, and (station number not given), depth not given. (All USNM); Diadema, stations 83, in 27 - 54 fms.; and 94, in 54 - 82 fms.; dead (grab).

Cadulus lunula Dall, 1881

Distribution: Off Habana, Cuba, and Barbados, in 70 - 805 fathoms.

Ecological data: Not given. A rare form.

Records. - Barbados: Eolis Junior (station 79), off Pelican Island, in 70 fms. (USNM).

Subgenus Gadila Gray, 1847

Cadulus mayori Henderson, 1920

Distribution: Off Southern Florida to the Gulf of Mexico and Barbados, in 16 - 220 fathoms.

Ecological data: Not obtained. An uncommon form.

Records. - Barbados: Diadema, stations 89, 91 and 93, in 54 - 82 fms.; and 99, in 82 - 109 fms., dead (dredge).

Cadulus iota Henderson, 1920

Distribution: Off southeast Florida, Puerto Rico and Barbados, in 25 to 80 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Eolis Junior (station 86), in 80 fms. (USNM).

Subgenus Cadulus Philippi, 1884

Cadulus transitorius barbadensis Henderson, 1920

Distribution: Known only from Barbados, in 80 - 100 fathoms.

Ecological data: Not given. A rare species.

Records.- Barbados: Hassler (station number not given), off Sandy Bay, in 100 fms. (MCZ; USNM); Eolis Junior (station number not given), off Bridgetown, in 80 fms. (USNM).

Cadulus exiguus Watson, 1879

Distribution: Culebra Island and Barbados, in 100 to 2,050 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Eolis Junior (station 10), off Bridgetown, in 100 fms. (USNM).

Cadulus obesus Watson, 1879

Distribution: Off Fernandina, Florida, southward to the Lesser Antilles, in 32 - 390 fathoms.

Ecological data: Not obtained.

Records. - Barbados: Diadema, stations 61, in 32 - 43 fms. (dredge);

120 and 122, in 164 - 191 fms.; and 126, in 191 - 218 fms., all dead (grab).

Cadulus cucurbitus Dall, 1881

Distribution: Off Bahia Honda, W. Cuba and Barbados, in 310 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Eolis Junior (station number not given), depth record lost, (USNM).

Cadulus tersus Henderson, 1920

Distribution: Known only from Barbados, in 33 - 75 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Eolis Junior, (station 51) off Barbados, in 33 fms.; (station 80), off Bridgetown, in 40 - 75 fms., (both USNM).

Family DENTALIIDAE

Genus Dentalium Linnaeus, 1758

Subgenus Dentalium Linnaeus, 1758

Dentalium laqueatum Verrill, 1885

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 10 - 230 fathoms.

Ecological data: Lives in sand.

Records. - Barbados: Blake (station number not given), in 100 fms., (MCZ; USNM); Disdema, stations 54, in 100 - 125 fms., living; 55, in 125 fms., living; 66, in 83 fms.; and 69, in 120 - 138 fms., fragments, (all dredge); and 101, in 82 - 109 fms., fragments (grab).

Remarks: The following records, apply to the subspecies Dentalium laqueatum regulare Henderson, 1920 which Turner (1955) considers of doubtful value:

Eolis Junior (stations 293; 296; 290; 60; 10; 40; 44 and 38), in 81 fms.; 85 fms.; 73 fms.; 110 fms.; 100 fms.; 90 fms.; 90 - 100 fms. and 140 fms. (all USNM).

Dentalium gouldii Dall, 1889

Distribution: North Carolina to Florida and the West Indies, in 12 to 164 fathoms.

Ecological data: Not obtained. Uncommon.

Records. - Barbados: Blake, station 299, in 100 fms. (MCZ); Diadema, stations 115, in 138 - 164 fms.; and 71, in 153 - 164 fms., dead (grab).

Dentalium obscurum Dall, 1889

Distribution: Off Habana, Cuba and Barbados, in 54 - 100 fathoms.

Ecological data: Found on coral and broken shell (dead), and in sand (living). An uncommon form.

Records. - Barbados: Hassler, off Sandy Bay, in 100 fms. (MCZ; USNM); Blake, station 299, in 140 fms. (MCZ; USNM); station 282, in 154 fms.; and 272, in 76 fms. (both MCZ); station 300, in 82 fms. (USNM); Eolis Junior, off Bridgetown (station 62), in 125 fms. (USNM); Diadema, stations 50, in 100 fms.; 51, in 82 fms., dead; 55, in 125 fms., living (dredge); and 99, in 34 - 82 fms., dead (grab).

Dentalium carduum Dall, 1889

Distribution: Florida Strait, Cuba, Bahamas and south the Lesser Antilles, in 100 - 338 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Eolis Junior (station number not given), in 100 fms. (USNM); Diadema, station 99, in 82 - 109 fms., dead (grab).

Subgenus Antalis H. and A. Adams, 1854

Dentalium antillarum d'Orbigny, 1846

Distribution: Southeast Florida to the Gulf of Mexico and West Indies, in 0.5 to 38 fathoms.

Ecological data: Lives in sand. A shallow water form. Rare in Barbados; common elsewhere.

Records. - Barbados: Eolis Junior (station 410), depth not given. (USNM).

Remarks: Clarke (1960) reported this species as abyssal. This may be an error. The species is limited to shallow water. (See Henderson, p. 45, and Turner 1955).

Dentalium ceratum Dall, 1881

Distribution: Gulf of Mexico to the Florida Keys and the West Indies, in 35 - 805 fathoms.

Ecological Data: Found living in sand, gravel and ooze. Uncommon.

Records. - Barbados: Blake (station number not given) in 100 fms.; station 290, in 73 fms. (MCZ); Eolis Junior (station 67), in 50 - 60 fms.; (stations 13 and 48), in 80 fms.; (station number not given), depth not

given. (All USNM); *Diadema*, stations 54, in 100 - 125 fms.; 58, in 75 - 100 fms., both living (dredge); 69, in 120 - 138 fms., dead; and 91, in 54 - 82 fms., dead (grab).

Remarks: This species is found in the Pliocene (Shell Creek) of St. Petersburg, Florida. The following records apply to subspecies *Dentalium ceratum tenax* Henderson, 1920 which Turner (1955) found to be only a variant. Hassler (station number not given), off Sandy Bay, in 100 fms.; Blake, station 272, in 76 fms.; Eolis Junior (station 51), in 33 fms.; and (station 79), in 70 fms. (all USNM); *Diadema*, stations 55, in 125 fms., living; 99, in 82 - 109 fms.; 117, in 138 - 164 fms.; 93, in 54 - 82 fms.; 78, in 27 - 54 fms. (all dredge); and 64, in 67 fms. (grab).

Dentalium taphrium Dall, 1889

Distribution: Off Cape Hatteras to the Gulf of Mexico and Barbados, in 8 - 138 fathoms.

Ecological data: Not obtained.

Records. - Barbados: *Diadema*, stations 79, in 27 - 54 fms.; 105, in 82 - 109 fms.; and 109, in 109 - 138 fms., all dead (grab).

Remarks: A record of a dead shell from Yucatan Strait, in 640 fms., (Blake) may be a drifted specimen.

Subgenus *Fissidentalium* Fischer, 1895

Dentalium meridionale Pilsbry and Sharp, 1897

Distribution: Gulf of Mexico (N. of Yucatan), Barbados, and Rio de Janeiro,

Brazil, in 100 to 1,568 fathoms.

Ecological data: Found in sand. Moderately rare.

Records. - Barbados: Eolis Junior (station number not given), in 100 fms. (MCZ); Diadema, station 55, in 125 fms., dead (dredge).

Remarks: This species is the largest of all known Dentalia in the Western Atlantic. The holotype, the largest specimen so far recorded, has the following measurements: length 108 mm.; greater diameter 14 mm.; lesser diameter 13 mm.; and arc 5 mm. The specimen obtained by the Diadema measures less than 40 mm. in length. It was occupied by an interesting pagurid, the large chela, of which appeared somewhat modified so as to act as an operculum, similar to that of a gastropod, to protect the occupant from intruders.

Dentalium floridense Henderson, 1920

Distribution: Off the Florida Keys and Barbados, in 35 - 110 fathoms.

Ecological data: Found on sand. Moderately rare.

Records. - Barbados: Hassler (station number not given), in 100 fms. (USNM, MCZ); Diadema, station 55, in 125 fms., dead (dredge).

Remarks: Dentalium capillosum Watson, 1885 (not of Jeffreys) is a synonym. The specimen obtained by the Diadema was also occupied by the same type of pagurid found in the former species.

Subgenus Graptame Pilsbry and Sharp, 1897

Dentalium eboreum Conrad, 1846

Distribution: Off Cape Hatteras, North Carolina south to the Gulf of

Mexico and Barbados, in 2 to 111 fathoms.

Ecological data: Not obtained. A common shallow water form in the northern part of its range; uncommon in Barbados.

Records. - Barbados: *Diadema*, stations 89 and 93, in 54 - 82 fms., dead (grab).

Remarks: *Dentalium leptum* Bush, 1885 and *Dentalium matara* Dall, 1889 are synonyms. This species is a common form in the Pliocene beds of St. Petersburg, Florida.

Dentalium calamus Dall, 1889

Distribution: Off Miami southward through the Florida Keys and the West Indies to Barbados, in 1 ft. to 25 fathoms.

Ecological data: Lives in sand. Moderately uncommon; rare in Barbados.

Records. - Barbados: Barbados (probably beach material) (USNM).

Dentalium semistriolatum Guilding, 1834

Distribution: Bermuda, Gulf of Mexico, the Florida Keys and the West Indies, in 3 to 90 fathoms.

Ecological data: Lives in sand. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (probably beach material) (USNM).

Subgenus *Laevidentalium* Cossman, 1888

Dentalium callipeplum Dall, 1889

Distribution: Gulf of Mexico southward through the West Indies to the Lesser Antilles, in 25 to 2,075 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Diadema, station 117, in 138 - 164 fms., dead (grab).

Dentalium liodon Pilsbry and Sharp, 1897

Distribution: Lesser Antilles and Caribbean coast of Honduras, Central America, in 80 to 200 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Eolis Junior (station 49), off Bridgetown, in 80 fms. (USNM).

Remarks: One specimen of this species was collected by C. T. Simpson, in beach drift at Honduras. This record indicates that the species is probably found in shallow depths.

Subgenus Episiphon Pilsbry and Sharp, 1897

Dentalium sowerbyi Guilding, 1834

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 8 to 124 fathoms.

Ecological data: Not obtained. A common species; rare in Barbados.

Records. - Barbados: Eolis Junior, (station 51), off Pelican Island, in 33 fms.; (stations 40 and 72), off Barbados, in 90 fms.; (station 3), in 25 - 40 fms. (USNM); Diadema, station 99, in 82 - 109 fms., dead (grab).

Subgenus Bathoxiphus Pilsbry and Sharp, 1897

Dentalium ensiculus Jeffreys, 1877

Distribution: Off Georges Banks, Mass., southward to the Lesser Antilles, in 196 to 1,859 fathoms.

Ecological data: Found on hard bottom. Rare.

Records. - Barbados: Blake, station 288, in 399 fms. (MCZ).

Remarks: Dentalium sigsbeanum Dall, 1881 is a synonym. The present record was not included in Henderson's work.

Dentalium didymum Watson, 1879

Distribution: Cape Catoche, Yucatan, south of Dry Tortugas, Florida, Santo Domingo and the Lesser Antilles, in 20 ft. - 390 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Eolis Junior (station 2), Carlisle Harbor, in 12 fms.; and (station 6), off Barbados, in 100 fms. (USNM).

Subgenus Compressidens Pilsbry and Sharp, 1897

Dentalium ophiodon Dall, 1881

Distribution: Off Fernandina, Florida southward to Barbados, in 70 to 294 fathoms.

Ecological data: Not obtained. A rare species.

Records. - Barbados: Hassler (station number not given), off Sandy Bay, in 100 fms.; Eolis Junior (station 38), off Lazaretto, in 130 - 140 fms.; (station 62), off Pelican Island, in 125 fms.; (station number not given), off Barbados (depth not given), (all USNM); Diadema, station 113, in 138 - 164 fms., living (grab).

Subgenus Fustiaria Stoliczka, 1897

Dentalium stenoschizum Pilsbry and Sharp, 1897

Distribution: Western Dry Rocks, Florida, Puerto Rico and Barbados,
in 100 - 110 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Eolis Junior (station 10), off Pelican Island, in
100 fms.; and (station 88), off Lazaretto, in about 100 fms., (both USNM).

CLASS PELECYPODA

ORDER PROTOBRANCHIA

Superfamily NUCULACEA

Family NUCULIDAE

Genus Nucula Lamarck, 1799

Nucula crenulata A. Adams, 1860

Distribution: South Carolina to the Gulf of Mexico and the West Indies, in 30 to 440 fathoms.

Ecological data: Found on sand, sand and shell, and muddy sand.

Common.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, stations 61, 112, 116, 117, 120, 122, 128, and 129, in 32 - 218 fms. (all loose valves, except living at station 120, in 164 - 191 fms.).

Genus Nuculana Link, 1807

Nuculana carpenteri (Dall, 1881)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 10 to 287 fathoms.

Ecological data: Lives in sandy mud. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Blake (station number not given) in 100 fms. (MCZ); Diadema, station 116, in 138 - 164 fms., living.

Nuculana vitrea (d'Orbigny, 1842)

Distribution: Florida Strait and the West Indies, in 32 to 540 fathoms.

Ecological data: Found on sand and shell, and sand and gravel. Common.

Records. - Barbados: Blake (station number not given), in 100 fms.

(MCZ); Diadema, stations 61, in 32 - 43 fms. (dredge); 104, in 82 - 109 fms.; 107, 109 and 112, in 109 - 138 fms.; and 120, in 164 - 191 fms.

(All grab). It was living at station 109; all other loose valves.

Nuculana sp. a.

Remarks: This is a minute species a little over 2 mm. in length sculptured differently from the previous forms. One dead, complete specimen and 3 valves were obtained by the Diadema at station 128, in 191 - 218 fms., and 2 valves at station 122, in 104 - 191 fms.

Nuculana sp. b.

Remarks: This is a larger shell than the former which it resembles to a great extent. One dead, fresh specimen was obtained by the Diadema at station 128, in 191 - 218 fms., and loose valves at station 107, 109 and 122, in 109 - 218 fms.

Nuculana sp. c.

Remarks: This species differ in the sculpture and is much larger than the two preceeding forms. One complete, juvenile specimen was obtained by the Diadema at station 122, in 164 - 191 fms., and loose valves at stations 61, (dredge); 117 and 122, in 32 - 191 fms. (grab).

Genus Spinula Dall, 1908

Spinula messanensis (Seguenza, 1877)

Distribution: Western Atlantic; off Virginia to the Gulf of Mexico and the West Indies; Eastern Atlantic; Norway to Angola; Mid-Atlantic Ridge (Azores), and Mediterranean, in 32 to 2,620 fathoms.

Ecological data: Not obtained. Probably lives in sandy mud, and ooze.

A common, widespread form; rare in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

ORDER FILIERACHIA

SUBORDER TAXODONTA

Superfamily ARCACEA

Family ARCIDAE

Subfamily ARCINAE

Genus Arca Linné, 1758

Arca zebra Swainson, 1833

Distribution: Bermuda, North Carolina to the Gulf of Mexico and the West Indies, from minus tide to shallow depths.

Ecological data: Lives attached by its byssus to rocks, shells and other solid substances. A gregarious form. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (Col. Voelker); Barbados (MCZ).

Arca imbricata Bruguière, 1787

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives attached by its byssus to the underside of rocks, particularly on rocky bottoms. Moderately common in Barbados; common elsewhere. Arca umbonata Lamarck, 1819 is a synonym.

Records. - Barbados: Blake, (station 282, in 154 fms., valves; Barbados (F. G. Kellett; both MCZ); Barbados (Thiele); station 16 and 37 (C. & B.); station 22 and 23 (C.).

Arca polycima Dall, 1881

Distribution: Lesser Antilles, in 92 to 100 fathoms.

Ecological data: Not given. A rare form known only from single valves.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Genus Barbatia Gray, 1847

Subgenus Barbatia Gray, 1847

Barbatia candida (Helbling, 1779)

Distribution: North Carolina to Brazil, in shallow water.

Ecological data: Lives attached by its byssus to the underside of rocks.

A typical reef-dweller. An uncommon form; apparently rare in Barbados.

Records. - Barbados: Barbados (Thiele).

Barbatia cancellaria Lamarck, 1919

Distribution: South Florida and the West Indies, in shallow water.

Ecological data: Lives like the former. A common reef-dweller.

Uncommon in Barbados; common in other areas. Arca barbata Linné, 1758 is a synonym. Listed by Thiele as Barbata listeri Phil.

Records. - Barbados: Blake, station 290, in 73 fms.; and 292, in 56 fms., valves, (both MCZ); stations 15, living; and 16, dead (C. & B.); 22 and 23 (C.).

Remarks: The valves obtained by the Blake were obviously drifted or disgorged by fish.

Barbatia ectocomata (Dall, 1886)

Distribution: Lesser Antilles, in 82 to 169 fathoms.

Ecological data: Lives on sand. Uncommon.

Records. - Barbados: Blake, station 300, in 82 fms. (MCZ); Diadema, station 71, in 153 - 164 fms., living (dredge).

Barbatia sp.

Remarks: This is a small species with distinct sculpture. Loose valves were obtained by the Diadema at stations 55, in 125 fms.; 57, in 131 fms.; and 83, 85, 86, 89, 90 and 95, in 27 - 82 fms.

Subgenus Acar Gray, 1847

Barbatia domingensis (Lamarck, 1819)

Distribution: Southeast United States and the West Indies, in shallow water.

Ecological data: Lives attached by its byssus to the underside of rocks.

It was found co-existing with Arcopsis adamsi on a reef flat at Barbados, where it is moderately uncommon. Common elsewhere.

Records. - Barbados: Station 23 (C.).

Genus Bentharca Verrill and Bush, 1898

Bentharca asperula (Dall, 1881)

Distribution: Gulf of Mexico to the Lesser Antilles, in 138 to 1,568 fathoms.

Ecological data: Found on sand and gravel. Living specimens obtained by the Diadema were attached by the byssus to a small piece of gravel. A rare form. Described by Dall as Macrodon asperula.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, stations 71, 153 fms., living (dredge); 117, in 138 - 164 fms.; 120 and 122, in 164 - 191 fms.; 123, 125 and 128, in 191 - 218 fms., all loose valves (grab).

Genus Bathyarca Kobelt, 1891

Bathyarca pectunculoides (Scacchi, 1833)

Distribution: Labrador to the Gulf of Mexico and the West Indies; N. Eurasia; W. Europe; Canaries and Mediterranean, in 20 to 1,810 fms.

Ecological data: Found in sand and shell, and in Pteropod ooze. An uncommon form.

Records. - Barbados: Blake (station number not given), in 100 fms.

USNM); Diadema, stations 61, in 27 fms. (dredge); 117, in 138 - 164 fms.;

120 and 122, in 164 - 191 fms.; 125, 128 and 129, in 191 - 218 fms., all loose valves (grab).

Remarks: Examination of the valves obtained by the Diadema shows a marked variation in this form and I am inclined to agree with Dall's suspicion that B. glomerula (Dall, 1881) is a varietal form of this species. See Bul. MCZ, 9. pp. 121 - 122, 1881. Clarke (1960) points out that the true B. pectunculoides is probably not a recent form.

Genus Arcopsis von Koenen, 1885

Arcopsis adamsi (Dall, 1886)

Distribution: North Carolina southward to Brazil, in shallow water.

Ecological distribution: Lives attached by its byssus to the underside of rocks on reef flats, and in shallow sandy and muddy bays. Uncommon in Barbados; common elsewhere. Found co-existing with Barbatia domingensis in Barbados.

Records. - Barbados: Barbados (Thiele); stations 11 and 37, dead (C. & B.); 22 and 23, living (C.); 29, living (P.); and 34, dead (E.).

Remarks: This species is common in the Pliocene of St. Petersburg, Florida.

Subfamily ANADARINAE

Genus Anadara Deshayes, 1830

Anadara sp. a.

Remarks: Loose valves of a small shell measuring 9.5 mm. in length and about 6 mm. high were obtained by the Diadema at stations 49, in 100 fms.;

94, in 54 - 82 fms.; and 128, in 191 - 218 fms.

Anadara sp. b.

Remarks: This is a different and smaller shell than the former. Loose valves were obtained by the Diadema at stations 79, in 27 - 54 fms.; 92, in 54 - 82 fms.; and 66, in 83 fms.

Genus Cucullaia Lamarck, 1801

Cucullaia sagrinata Dall, 1886

Distribution: Off Georgia to the Gulf of Mexico and Barbados, in 13 to 440 fathoms.

Ecological data: Found in sand, shell and gravel. May be uncommon in Barbados; rare in the Gulf of Mexico.

Records. - Barbados: Diadema, stations 78, in 13 - 27 fms.; 79, 81, 84 and 85, in 27 - 54 fms. All loose valves except one living specimen at station 81.

Remarks: For discussion of this species see Bull. MCZ, 12, p. 245, 1886.

Family LIMOPSIDAE

Genus Limopsis Sasso, 1827

Limopsis antillensis Dall, 1881

Distribution: North Carolina to Florida and the West Indies, in 27 to 683 fathoms.

Ecological Data: Not obtained. A common species.

Records. - Barbados: Diadema, stations 78, 79 and 83, in 27 - 54 fms.; 88, 91 and 95, in 54 - 82 fms.; and 129, in 191 - 218 fms. All loose valves (grab).

Limopsis minuta (Philippi, 1836)

Distribution: North America: Gulf of Mexico; Caribbean; North Eurasia; Norway; W. Europe; Canaries and Mediterranean, in 30 to 2,740 fathoms. (Clarke, 1960).

Ecological data: Found on sand, shell, gravel, and in ooze, etc.

Common.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM); Diadema, stations 61, in 32 - 43 fms.; dead; 71, in 153 - 164 fms., living (dredge); 108 and 109, dead; 112, living, in 109 - 138 fms.; 117, in 138 - 164 fms.; and 123, in 191 - 218 fms., dead (grab).

Limopsis cristata Jeffreys, 1876

Distribution: North America; Caribbean; W. Europe; Canaries and Mid-Atlantic between Labrador and Europe, in 64 to 2,740 fathoms (Clarke, 1960).

Ecological data: Not obtained. Common.

Records. - Barbados: Diadema, stations 107 and 110, in 109 - 138 fms.; 116, in 138 - 164 fms.; 122, in 164 - 191 fms.; and 123, in 191 - 218 fms. All loose valves (grab).

Family GLYCYMERIDIDAE

Genus Glycymeris De Costa, 1778

Glycymeris decussata (Linné, 1758)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives on sandy bottoms. Rare in Barbados; uncommon elsewhere. Glycymeris pennacea Lamarck, 1819 is a synonym.

Records. - Barbados: Barbados 2 lots (F. G. Kellett, E. M. Howland; MCZ); Barbados (Col. Voelker).

SUBORDER ANISOMYARIA

Superfamily MYTILACEA

Family MYTILIDAE

Genus Crenella Brown, 1827

Crenella divaricata (d'Orbigny, 1842)

Distribution: North Carolina to Florida and the West Indies, from shallow water to 82 fathoms.

Ecological data: Found on sand, and on sand and shell. A common form; uncommon in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, stations 92, in 54 - 82 fms., living; and 84, dead in the same depth.

Remarks: This species was reported by Dall as C. decussata which is a northern form. The species listed here is a common fossil in the Pliocene of St. Petersburg, Florida.

Genus Modiolus Lamarck, 1790

Modiolus americanus (Leach, 1815)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water

Ecological data: Lives buried in sand with the postero-ventral margin slightly exposed above the bottom. A common form; rarely washed ashore in Barbados. M. tulipus Linné, 1758 and VolSELLA americana Leach, 1815 are synonyms.

Records. - Barbados: Barbados (MCZ); Barbados (Col. Voelker).

Genus Brachidontes Swainson, 1840

Subgenus Brachidontes Swainson, 1840

Brachidontes citrinus (Roding, 1798)

Distribution: Southern Florida and the West Indies, from the surf zone to shallow depths.

Ecological data: Lives attached by its byssus to rocks, drift wood and other solid substances. A very common, extremely gregarious form; moderately uncommon in Barbados. Reported by Thiele as Modiolus sulcatus Lamarck.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (Thiele); Bridgetown and Bathsheba, 2 lots, (MCZ); stations 11 (C. & B.); 35 (E.); and 22 (C.).

Subgenus Hormonia Morch, 1853

Brachidontes exustus (Linné, 1758)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, from the intertidal zone to shallow depths.

Ecological data: This is also a gregarious species living in clusters attached to rocks, shells and other solid objects. A very common form; rare in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Remarks: This record consists of dead valves drifted or disgorged in deep-water. This form is common in the Pliocene of St. Petersburg, Florida.

Genus Amygdalum Muhlfield, 1811

Amygdalum sagittatum Rehder, 1934

Distribution: Cedar Keys, Florida to the Lesser Antilles, in 13 to 131 fathoms.

Ecological data: Found on sand, shell and gravel. Probably a sessile form like its relatives. Moderately uncommon.

Records. - Barbados: Diadema, stations 49, in 100 fms.; 51, in 82 fms.; 55, in 125 fms.; 57, in 131 fms.; 58, in 75 - 100 fms.; 67, in 97 fms.; and 78, in 13 - 27 fms.

Genus Botula Morch, 1863

Botula fusca (Gmelin, 1791)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Bores into rock. Uncommon in Barbados; common in other areas. Listed by Thiele as Modiolus (Botula) cinnamomea Lam., 1819 which is a synonym.

Records. - Barbados: Barbados (J. Thiele).

Genus Lithophaga Roding, 1798

Lithophaga antillarum d'Orbigny, 1842

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Bores into coral. Uncommon.

Records. - Barbados: Barbados (Thiele); Oistins, Barbados (MCZ).

Lithophaga bisulcata d'Orbigny, 1842

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Bores into coral. Uncommon.

Records. - Barbados: Oistins Bay and Carlisle Bay (MCZ); station 11, dead (C. & B.); station 25, dead (C.).

Genus Gregariella Monterosato, 1884

Gregariella coralliophaga (Gmelin, 1791)

Distribution: The West Indies, in shallow water.

Ecological data: Bores into rock. Rare in Barbados; reasonably common

in other areas.

Records. - Barbados: Barbados (MCZ).

Remarks: The habitats of the above rock and coral-boring forms need investigation in Barbados.

Superfamily PTERIACEA

Family ISOGNOMONIDAE

Genus Isognomon Solander, 1786

Isognomon radiatus Anton, 1839

Distribution: Southeast Florida and the West Indies, from the surf zone to shallow depths.

Ecological data: Lives attached by its byssus to the underside of rocks.
Common.

Records. - Barbados: Barbados (Thiele); Bathsheba (F. G. Kellett); Barbados (M. Pomerat; both MCZ); stations 1 - 7 (L.); 11 and 37 (C. & B.); 22 and 23 (C.); 27 and 28 (P.); and 34 (E.).

Remarks: The shape of the shell in this species is very variable on account of adapting to the mechanical factors of the environment.

Breeding occurs during September, October and November (Lewis, 1960 a).

Listed by Thiele as Melina listeri Hanley, and as Isognomon listeri Hanley, by Lewis. Both are synonyms.

Family PTERIIDAE

Genus Pteria Scopoli, 1777

Pteria sp.

Remarks: This undetermined species consists of a small shell which I have compared with Pteria colymbus, the common shallow water species of the West Indies, but the sculpture on both forms differ considerably. The specific position of this form, therefore, is uncertain until more material is available for comparison. The specimen was obtained by the Diadema at station 64, in 67 fms. It was living attached by its byssus to a rare gorgonian.

Family PINNIDAE

Genus Pinna Linné, 1758

Pinna carnea Gmelin, 1791

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives buried in sand with the sharp posterior margin of the shell projected above the surface of the bottom. It has also been found in crevices and depressions among corals at Barbados. Found by Lewis and observed by Emery in the latter habitat. Common.

Records. - Barbados: Barbados (Carpenter Coll.); Barbados (Thiele); Bathsheba and Barbados, 2 lots (MCZ).

Superfamily PECTINACEA

Family PLICATULIDAE

Genus Plicatula Lamarck, 1801

Plicatula gibbosa Lamarck, 1801

Distribution: North Carolina to the Gulf of Mexico and the West Indies,

from minus tide to shallow depths.

Ecological data: Lives with one valve attached to dead shells, corals and rocks. A common form; apparently rare in Barbados.

Records. - Barbados: Barbados (Col. Voelker).

Family DIMYIDAE

Genus Dimya Rouault, 1848

Dimya argentea Dall, 1886

Distribution: Off Cape Hatteras, North Carolina to the Gulf of Mexico and the West Indies, in 32 to 248 fathoms.

Ecological data: Lives attached to stones and exo-skeletal remains as well as embedded in sponges. Uncommon in Barbados; abundant in the Gulf of Mexico.

Records. - Barbados: Blake, station 276, in 94 fms. (MCZ); station 290, in 73 fms. (USNM); Diadema, stations 55, in 125 fms.; 61, in 32 - 43 fms.; 74, in 213 fms.; 117, in 138 - 164 fms.; 122, in 164 - 191 fms.; 125 and 128, in 191 - 218 fms. (All valves except one complete, dead specimen).

Family PECTINIDAE

Genus Pecten Muller, 1776

Subgenus Euvola Dall, 1898

Pecten chazelliei (Dautzenberg, 1900)

Distribution: Southern Florida, the Gulf of Mexico, Puerto Rico and Barbados, in 34 to 45 fathoms.

Ecological data: Found on a bottom of sand and shell. Rare.

Records. - Barbados: One dead, complete specimen of this species was dredged by the Diadema at station 61, in 32 - 43 fms., and in 54 - 82 fms.

Remarks: Pecten tereinus Dall, 1925 is this species. Our record extends considerably the southern range of this form.

Genus Lyropecten Conrad, 1862

Subgenus Nodipecten Dall, 1898

Lyropecten nodosus (Linné, 1758)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow to moderate depths.

Ecological data: Dwells on sandy gravel. Moderately uncommon in some areas; rare in Barbados.

Records. - Barbados: One old, imperfect valve of this species (in the MCZ) was found by F. G. Kellett.

Genus Chlamys Roding, 1798

Chlamys ornata (Lamarck, 1819)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives temporarily attached by its byssal filaments to the underside of rocks. A curious swimmer when disturbed. An

uncommon form frequently found on the reef flats on the lee side of Barbados.

Chlamys multisquamatus (Dunker 1858)

Distribution: West Indies, in 3 to 54 fathoms.

Ecological data: Found in reef-sand. Probably lives under rocks.

Records. - Barbados: One valve of this species was obtained by the Diadema at station 86, in 27 - 54 fathoms.

Remarks: This is an exceedingly rare species, except at La Chorrera, Habana, Cuba, where loose valves were frequently dredged in 3 - 15 fms. John C. Finlay found a living specimen washed ashore on the Peninsula de Hicacos, Cuba.

Chlamys sp. a.

Remarks: This undetermined species consists of one valve of a shell measuring about 14.5 mm. in length. It was obtained in the grab samples by the Diadema at station 80, in 27 - 54 fms.

Chlamys sp. b.

Remarks: This is also a valve of a shell measuring about 15.5 mm. in length, having a distinct sculpture. It was obtained by the Diadema (grab) at station 80, in 27 - 54 fms.

Chlamys sp. c.

Remarks: This is another valve of a small shell measuring about 8.75 mm. in length, having unusual sculpture and coloration. The

specimen was obtained by the *Diadema* (grab) at station 90, in 54 - 82 fms.

Genus Aequipecten P. Fischer, 1886

Subgenus Aequipecten P. Fischer, 1886

Aequipecten linki Dall (date not located)

Distribution: Not recorded.

Ecological data: Not given.

Records. - Barbados: A broken valve of this species was obtained by the *Diadema* at station 61 (dredge), in 32 - 43 fms.

Aequipecten phrygium (Dall, 1886)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 50 to 792 fathoms.

Ecological data: Found on sand, gravel and shell. Moderately uncommon.

Records. - Barbados: *Diadema*, stations 57, in 131 fms.; 58, in 75 - 100 fms.; 66, in 83 fms.; and 107, in 109 - 138 fms. (All loose, old valves).

Subgenus Plagiectenium Dall, 1898

Aequipecten sp. a.

Remarks: Single valves of what seems to be juvenile specimens of

A. irradians were collected at Barbados by F. G. Kellett. They are in the Museum of Comparative Zoology at Harvard University.

Subgenus Argopecten Monterosato, 1889

Aequipecten gibbus (Linné, 1758)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow to moderate depths.

Ecological data: Lives in muddy sand. Common in the Gulf of Mexico; rare in Barbados.

Records. - Barbados: Barbados (E. M. Howland; MCZ).

Genus Propeamussium De Gregorio, 1883

Propeamussium pourtalesianum (Dall, 1886)

Distribution: Off Fernandina, Florida to the Gulf of Mexico and the West Indies, in 13 to 805 fathoms.

Ecological data: Lives in sand and shell. Common.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); and 154 fms. (USNM); Diadema, stations 51, 57, 58, 59, 61, 68, 69, 80, 105, 116, 117, 122 and 128, in 27 - 218 fms. Living specimens were obtained only at stations 68, in 120 fms., and 80, in 27 - 54 fms. All others loose valves.

Propeamussium holmesii (Dall, 1886)

Distribution: Florida and the West Indies, in 54 to 218 fathoms.

Ecological data: Found living on a bottom of yellow coral and broken shell. A rare species.

Records. - Barbados: Blake, station 273, in 103 fms. (USNM); and

100 fms.; living (MCZ); Diadema, station 128, in 191 - 218 fms. (valve).

Propeamussium reticulum (Dall, 1886)

Distribution: Off Cape Hatteras, North Carolina to the Lesser Antilles, in 54 to 218 fathoms.

Ecological data: Found living on stony bottom. Common.

Records. - Barbados: Blake, station 300, in 82 fms.; and in 100 fms. (MCZ); station 290, in 73 fms.; station 293, in 82 fms., dead; station 297, in 125 fms., living (all USNM); Diadema, stations 89, 91, 94, 95, 97 and 128, in 54 - 218 fms. (all valves).

Genus Pseudamussium H. and A. Adams, 1858

Pseudamussium sayanum (Dall, 1886)

Distribution: Florida Strait south through the West Indies to the Lesser Antilles, 120 to 400 fathoms.

Ecological data: Found dead on sand and shell. Reported by Dall as living off Habana, Cuba, in 250 - 400 fms. Nature of bottom not given.

A rare species.

Records. - Barbados: Diadema, station 120, in 164 - 191 fms. (old valve).

Pseudamussium thalassinum (Dall, 1886)

Distribution: Off Martha's Vineyard, North Carolina to the Lesser Antilles, in 22 to 450 fathoms.

Ecological data: Not given. Rare. Propeamussium fenestratum Verrill, is a synonym.

Records. - Barbados: Diadema, stations 94, in 54 - 82 fms.; and 97, in 82 - 109 fms. (valves).

Genus Amussium Roding, 1798

Amussium dalli E. A. Smith, 1886

Distribution: Off Bermuda, the Gulf of Mexico and the West Indies, in 218 - 1,591 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Blake, station 275, in 218 fms. (MCZ).

Family SPONDYLIDAE

Genus Spondylus Linné, 1758

Spondylus americanus Hermann, 1781

Distribution: Florida and the West Indies, in 3 to 375 fathoms.

Ecological data: Lives attached by one valve to coral, rocks, and other solid objects. A common form in shallow to moderate depths.

Reported by Dall as S. gussoni Da Costa.

Records. - Barbados: Blake, station 278, in 69 fms.; and in 100 fms.; Barbados, beach specimens (all MCZ); Diadema, station 88, in 54 - 82 fms. (valve); station 34, dead (E.).

Spondylus sp.

Remarks: An upper valve of this shell, measuring over 18 mm. in length, was dredged by the Diadema at station 71, in 155 - 164 fms. Bottom of

sand and shell. Superficially it resembles Hinnites adamsi Dall, 1886 but close examination of the sculpture and the hinge characters determined its generic position.

Family LIMIDAE

Genus Lima Bruguière, 1797

Subgenus Lima Bruguière, 1797

Lima lima (Linné, 1758)

Distribution: Southeast Florida and the West Indies, in 3 to 56 fathoms.

Ecological data: Lives on sandy and rocky bottoms, probably under rocks.

Common.

Records. - Barbados: Blake, station 272, in 76 fms.; and in 100 fms.

(MCZ); station 292, in 56 fms., living (USNM); Barbados (J. Thiele);

Diadema, station 95, in 54 - 82 fms.; stations 23 (C.); 34 (E.); and

37, in 20 ft. (C. & B.).

Remarks: The presence of old dead valves of this species in deep water is probably adventitious. Dall (1886) listed this species as Lima squamosa Lamarck, 1819.

Subgenus Limaria Link, 1807

Lima pellucida C. B. Adams, 1846

Distribution: North Carolina to Florida and the West Indies, in

15 to 38 fathoms.

Ecological data: Found associated with sandy and gravelly bottoms. Occasionally washed ashore in many areas; rare at Barbados. Listed by Thiele as Lima hians Gmelin, which is a European form. Records. - Barbados: Barbados (J. Thiele); Barbados (MCZ).

Lima sp. b.

Remarks: This is a smaller shell than the former. It has a different sculpture and the valves are less inflated. Loose valves were obtained by the Diadema at stations 57, in 131 fms.; 84 and 86, in 27 - 54 fms.; and 47, in 50 - 75 fms. The latter record consists of a dead, but complete specimen.

Subgenus Ctenoides Morch, 1853

Lima scabra (Born, 1778)

Distribution: Southeast Florida and the West Indies, in shallow water. Ecological data: Lives under rocks. A common reef dweller. Uncommon. in Barbados.

Records. - Barbados: Barbados (Carpenter Coll.); Barbados (Maynard, MCZ); Barbados (Col. Voelker).

Remarks: This species is found in the Pliocene of St. Petersburg, Florida.

Lima scabra form. tenera Sowerby, 1843

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Lives under rocks. A common form, found in Barbados

more frequently than the preceding form.

Records. - Barbados: Blake, (station number not given), in 100 fms. (MCZ); Diadema, station 49, in 100 fms. (all loose, old valves). It was taken alive at station 23, in 2 ft. of water.

Lima albicoma Dall, 1886

Distribution: Florida Strait and the West Indies, in 100 to 121 fathoms.

Ecological data: Not given. A rare form.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Lima planulata Dall, 1886

Distribution: Barbados, in 100 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ).

Lima sp. a.

Remarks: The shell of this undetermined species measures 11 mm. in length. It resembles a small L. scabra, but the sculptural characteristics are different. Two living specimens were obtained by the Diadema at station 60, in 27 - 34 fms., and several loose valves at stations 79, 83, 84 and 86, in the same depth.

Genus Limatula S. Wood, 1839

Limatula setifera Dall, 1886

Distribution: Off Cape Lookout, North Carolina to Florida and the West Indies, in 52 to 450 fathoms.

Ecological data: Found on coarse sand, shell and hard bottom.

Moderately uncommon.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ); Diadema, station 91, in 54 - 82 fms. (all valves).

Limatula regularis Verrill and Bush, 1898

Distribution: Off Delaware Bay and Barbados, in 70 to 191 fathoms.

Ecological data: Not obtained.

Records. - Barbados: A single valve of this interesting species was obtained by the Diadema at station 120, in 164 - 191 fms.

Remarks: Our record extends considerably the southern range of this species.

Limatula nodulosa Verrill and Bush, 1898

Distribution: Gulf of Mexico (off the Mississippi Delta) and Barbados, in 60 to 730 fathoms.

Ecological data: Not obtained. Rare.

Records. - Barbados: A broken valve of this delicate shell was taken by the Diadema at station 91, in 54 - 82 fms.

Remarks: Our record extends considerably the southern range of this species.

Genus Limea Bronn, 1831

Limea bronniana Dall, 1886

Distribution: Off North Carolina to the Gulf of Mexico and the West Indies, in 15 to 804 fathoms.

Ecological data: Not obtained. A common species.

Records. - Barbados: Blake (station number not given), in 100 fms.; Diadema, stations 83, 85, 88, 89, 92, 94, 97, 110, 122, 123 and 128, in 27 - 218 fms. (all valves).

Superfamily ANOMIACEA

Family ANOMIIDAE

Genus Anomia Linné, 1758

Anomia simplex d'Orbigny, 1842

Distribution: Nova Scotia to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives attached by its byssus to rocks, shells, dead gorgonians and other solid objects. A common form; rare in Barbados.

Records. - Barbados: Barbados (Carpenter Coll.); Barbados (A. Maynard; MCZ).

Remarks: This species is common as fossil in the Pliocene of Florida.

Superfamily OSTREACEA

Family OSTREIDAE

Genus Ostrea Linné, 1758

Ostrea frons Linné, 1758

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives attached to mangrove roots and dead gorgonians. Attachment is obtained by developing extensions on one of the valves, these act as a sort of clasping mechanism which conforms to mechanical factors of the environment, hence the variability in the shape of the shell of this species. A common form; uncommon in Barbados.

Records. - Barbados: Barbados (2 lots; Carpenter Coll.); at station 23, in 4 fms., living (L.).

Ostrea equestris Say, 1834

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives attached to rocks; one valve is cemented to the substrate and the shell adjusts to the mechanical factors of the surroundings. A rather gregarious form, its presence on the rock can be detected by its lumpy appearance. Uncommon.

Records. - Barbados: Station 35, dead; and 44, in 5 - 20 ft., living (E.).

Ostrea cristata Born, 1780

Distribution: South Florida to South America, in shallow water.

Ecological data: Lives attached to rocks, stones and other solid objects. Moderately rare.

Records. - Barbados: Barbados (J. Thiele).

ORDER EULAMELLIBRANCHIA

SUBORDER HETERODONTA

Superfamily ASTARTACEA

Family ASTARTIDAE

Genus Astarte Sowerby, 1816

Astarte smithi Dall, 1886

Distribution: Gulf of Mexico and the West Indies, in 27 to 1,568 fathoms.

Ecological data: Found living on a bottom of sand and shell. Common.

Records. - Barbados: Blake (station number not given), in 100 fms.; and station 274, in 209 fms. (both MCZ); Diadema, stations 61, in 34 - 43 fms., dead; 72, in 180 fms., living (dredge); 81, in 27 - 54 fms.; living; 120 and 122, in 164 - 191 fms., dead; and 128, in 191 - 218 fms., living (all grab).

Family CRASSATELLIDAE

Genus Crassinella Guppy, 1874

Crassinella martinicensis (d'Orbigny, 1842)

Distribution: West Indies, in shallow to moderate depths.

Ecological data: Lives in sand. An uncommon species; rare in Barbados.

Records. - Barbados: One right valve of this small species was taken by the Diadema at station 128, in 191 to 218 fms.

Crassinella guadalupensis (d'Orbigny, 1842)

Distribution: The West Indies, in shallow water.

Ecological data: Found on sandy bottoms. A common species; rare in Barbados.

Records. - Barbados: One valve of this species was taken at station 37,

in 20 ft., by Clarke and Bousfield.

Superfamily CYAMIACEA

Family CYAMIDAE

Genus Cyamium Philippi, 1845

Cyamium sp.

Remarks: A broken right-valve of a shell that probably is Cyamium antarcticum Philippi, was obtained by the Diadema at station 109, in 109 - 138 fms. When perfect, this shell probably measured over 4 mm. in length and 2.75 mm. high. Listed by the writer for Lewis (1965) as Kellia sp.

Superfamily LUCINACEA

Family DIPLodontidae

Genus Diplodonta Bronn, 1831

Diplodonta punctata (Say, 1822)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 14 - 124 fathoms.

Ecological data: Found on sandy bottoms. Moderately common in some areas; probably uncommon in Barbados.

Records. - Barbados: Broken valves of this species were obtained by the Diadema at stations 81 and 83, in 27 - 54 fms.

Family LUCINIDAE

Genus Lucina Bruguière, 1797

Lucina pensylvanica (Linné, 1758)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Lives in muddy sand and reef-sand. A common form, occasionally washed ashore on Barbados.

Records. - Barbados: Barbados, 3 lots (MCZ); Barbados (Thiele); Barbados (Col. Voelker); stations 16 (C. & B.); 23 (C.); and 35 (E.). Common in the Pliocene of Florida.

Subgenus Carilinga Chavan, 1937

Lucina blanda Dall and Simpson, 1901

Distribution: The West Indies, in shallow water.

Ecological data: Found on sandy bottoms. Probably uncommon in Barbados; common elsewhere.

Records. - Barbados: Crane Beach (MCZ).

Genus Phacoides Gray, 1847

Phacoides sp.

Remarks: One valve of this undetermined species was found by Emery at station 34. This shell resembles the following form, but is larger and flatter.

Genus Myrtea Turton, 1822

Myrtea pristiphora Dall and Simpson, 1901

Distribution: Puerto Rico and Barbados, in 13 to 164 fathoms.

Ecological data: Found on sandy bottoms. Moderately uncommon.

Records. - Barbados: Diadema, stations 78 and 84, in 13 - 54 fms.; 80, in 27 - 54 fms., living; and 116, in 138 - 164 fms.

Genus Codakia Scopoli, 1777

Subgenus Codakia Scopoli, 1777

Codakia orbicularis (Linné, 1759)

Distribution: Florida to Texas and the West Indies, in shallow water.

Ecological data: Lives in muddy sand, and reef-sand. A common species, occasionally washed ashore on Barbados.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.); Barbados (J. Thiele); Barbados, 4 lots (MCZ); Bathsheba (MCZ); Barbados (Col. Voelker); stations 16 (C. & B.); 22 and 23 (C.); and 35 (E.). All beach specimens.

Codakia cubana Dall and Simpson, 1901

Distribution: Gulf of Mexico and the West Indies, in 84 to 640 fathoms.

Ecological data: Not given. Probably lives in muddy sand. Moderately rare. Lucina lenthicula Dall, 1881 is a synonym.

Codakia orbiculata Montagu, 1808

Distribution: North Carolina to Texas and the West Indies, in shallow water.

Ecological data: Lives in muddy sand. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (MCZ).

Remarks: This species is found in the Pliocene of Florida.

Codakia orbiculata filiata Dall and Simpson, 1901

Distribution: Bermuda, the Florida Keys and the West Indies, in 85 to 300 fathoms.

Ecological data: Found on sand, shell, gravel and ooze. Moderately rare.

Records. - Barbados: One valve of this species was obtained by the *Diadema* at station 54, in 100 - 125 fms.

Codakia sp. a.

Remarks: One valve of what may be Codakia pectinata (C. B. Adams, 1847) was found at station 23. Needs comparison with the holotype of the latter.

Codakia sp. b.

Remarks: One valve of what seems to be the former species was found by Clarke and Bousfield at station 17. The specimen is quite eroded.

Codakia sp. c.

Remarks: This undetermined species consists of two tiny shells from Barbados in the Museum of Comparative Zoology.

Genus Divaricella von Martens, 1880

Divaricella quadrisulcata (d'Orbigny, 1846)

Distribution: Massachusetts to Florida and the West Indies, in shallow water.

Ecological data: Lives in sand. Uncommon.

Records. - Barbados: Barbados (Thiele); station 35, dead (E.).

Family CHAMIDAE

Genus Chama Linné, 1758

Chama sarda Reeve, 1847

Distribution: South Florida and the West Indies, in shallow water.

Ecological data: Lives attached to hard surfaces such as dead shells, corals, rocks and dead gorgonians. Rarely washed ashore on Barbados; uncommon elsewhere.

Records. - Barbados: Stations 11 (C. & B.); and 35 (E.). All beach specimens.

Chama florida Lamarck, 1819

Distribution: Florida Keys and the West Indies, from the low-tide zone to 38 fathoms.

Ecological data: Lives attached to the underside of rocks, particularly on rocky bottoms. Common.

Records. - Barbados: Stations 11, dead (C. & B.); 22 and 23, living, (C.).

Chama lactuca Dall, 1886

Distribution: North Carolina to Florida and the West Indies, in 63 to 100 fms.

Ecological data: Found living in coarse gravel and shell. Apparently this form lives unattached.

Records. - Barbados: Hassler (station number not given) in 80 - 100 fms.; Blake, (station number not given), in 100 fms. (both MCZ); Diadema, stations 55, in 100 - 125 fms.; 57, in 131 fms., living; 68, in 120 fms.; 83, in 27 - 54 fms.; and 90, in 54 - 82 fms.

Remarks: This species also includes the inverse form, Pseudochama, which apparently occurs in a large ratio within the species and deserves detailed study. One specimen sent by Tom McGinty to the Museum of Comparative Zoology as this species from off Florida, is in error. The lower (left valve) of Chama lactuca is very exogyroid; it is both laterally and longitudinally evenly arched and is sculptured with about 18 to 20 thin, raised concentric laminae which are about equidistantly spaced, the spaces being sculptured with irregular, concentric growth lines. The color of the shell is ashy white. The internal side of this valve is smooth, having concentric depressions which correspond each with a lamina on the opposite side, and are marked along their extension by a shade of light brown. The pallial line is incised deeper than the depressions and extends from one muscular impression to the other.

The right or upper valve is smaller, rather depressed and sculptured by many irregular radial rows of low, blunt spines that give an imbricate appearance to the surface. The embryonic shell is smooth, shiny, and

shows traces of laminations like the opposite valve.

Genus Pseudochama Odhner, 1917

Pseudochama radians (Lamarck, 1819)

Distribution: South Florida and the West Indies, in shallow water.

Ecological data: Lives attached to solid surfaces such as rocks and corals. Common.

Records. - Barbados: One living specimen of this species was obtained by Lewis near station 23, in 4 fms., and several others, dead, by Clarke and Bousfield. The label for the latter record was lost.

Superfamily ERYCINACEA

Family ERYCINIDAE (LEPTONIDAE)

Genus Bornia Philippi, 1876

Bornia barbadensis Dall, 1899

Distribution: Known only from Barbados, in 100 fathoms.

Ecological data: Not given. Probably a parasite on other invertebrates.

Rare.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Bornia undulata Thiele, 1910

Distribution: Known only from Barbados, in shallow water.

Ecological data: Not given.

Records. - Barbados: Barbados (Thiele).

Genus Mysella Angas, 1877 = Rocheportia Velain, 1878

Mysella barbadensis (Dall, 1889)

Distribution: Known only from Barbados, in 100 fathoms.

Ecological data: Not given. Rare.

Records. - Barbados: Blake (station number not given), in 100 fms.
(USNM).

Superfamily CARDIACEA

Family CARDIIDAE

Subfamily TRACHYCARDIINAE

Genus Trachycardium Morch, 1853

Trachycardium magnum (Linné, 1758)

Distribution: Lower Florida Keys to Brazil, in shallow to moderate depths.

Ecological data: Lives in sand. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (MCZ); station 34, dead (E.).

Trachycardium muricatum (Linné, 1758)

Distribution: Cape Hatteras, North Carolina to the West Indies, in shallow water.

Ecological data: Lives in sand and muddy sand. Rare in Barbados;

common elsewhere.

Records. - Barbados: Barbados (MCZ).

Trachycardium isocardia (Linné, 1758)

Distribution: The West Indies to Brazil, in shallow water.

Ecological data: Lives in sand. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Remarks: The records of this species as fossil from the Pliocene of Florida may possibly refer to T. egmontianum Shuttleworth.

Genus Papyridea Swainson, 1840

Papyridea soleniformis (Bruguère, 1789)

Distribution: North Carolina to Brazil, in shallow water.

Ecological data: Lives in sand. A common form; probably uncommon in Barbados.

Records. - Barbados: Barbados, beach specimen (Col. Voelker).

Papyridea semisulcata (Gray, 1825)

Distribution: Southeast Florida to the Lesser Antilles, in shallow to moderate depths.

Ecological data: Found on sand and reef-sand. Moderately uncommon; rarely washed ashore on Barbados.

Records. - Barbados: One complete, dead specimen was obtained by Clarke and Bousfield at station 37, in 20 ft. of water.

Remarks: Dall reported this species from 300 fathoms, but it is likely that the shell was adventitious in such depth. The species is present in the Pliocene of St. Petersburg, Florida.

Subfamily FRAGINAE

Genus Americardia Stewart, 1930

Americardia media (Linné, 1758)

Distribution: North Carolina to Florida and the West Indies, in shallow water.

Ecological data: Lives in sand. Uncommon.

Records. - Barbados: Barbados and Bathsheba, 2 lots; Blake (station number not given), in 100 fms., (both MCZ); Diadema, stations 79 and 80, in 27 - 54 fms., dead (grab); station 34, dead (E.); Barbados (Col. Voelker).

Americardia guppyi (Thiele, 1910)

Distribution: Florida and the West Indies, in shallow water.

Ecological data: Found on sand and reef-sand. Rare in Barbados; moderately uncommon elsewhere.

Records. - Barbados: Barbados (Thiele); station 35 (Emery).

Remarks: The taxonomy of this species is discussed in "Johnsonia" Vol. 1, No. 13, pp. 19 - 20, and by Abbott (1958).

Subfamily LAEVICARDIINAE

Genus Laevicardium Swainson, 1840

Laevicardium laevigatum (Linné, 1758)

Distribution: North Carolina to the Lesser Antilles, in shallow water.

Ecological data: Lives in sand. Rare in Barbados; common elsewhere.

Listed by Thiele, and Dall as Cardium serratum, a synonym.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Barbados (Col. Voelker); station 34, dead (E.); Diadema, stations 79 and 80, in 27 - 54 fms., dead (grab).

Laevicardium sybariticum (Dall, 1886)

Distribution: Bermuda south through the West Indies, in 27 to 190 fathoms.

Ecological data: Found in sand and broken shell. Moderately uncommon.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, stations 61, in 32 - 43 fms.; 79, 80 and 84, in 27 - 54 fms., living and dead (grab).

Subfamily PROTOCARDIINAE

Genus Microcardium Thiele, 1934

Microcardium peramabile (Dall, 1881)

Distribution: Rhode Island, Massachusetts to the Lesser Antilles, in 27 to 202 fathoms.

Ecological data: Lives in sand, and sandy ooze. A common species.

Records. - Barbados: Blake, stations 272, 76 fms.; 300, in 82 fms.; 276, in 94 fms.; and in 100 fms. (all MCZ); Diadema, stations 50, 57, 58, 59, 72, 83, 88, 89, 90, 91, 92, 94, 95, 107 and 117, in 27 - 104 fms., living and dead.

Microcardium tinctum (Dall, 1881)

Distribution: Off Cape Hatteras, North Carolina to the Lesser Antilles, in 75 - 125 fathoms.

Ecological data: Found on coral sand and broken shell. Moderately uncommon.

Records. - Barbados: Blake, station 272, in 76 fms.; and in 100 fms. (USNM); station 287, in 7.5 - 50 fms. (MCZ).

Superfamily VENERACEA

Family VENERIDAE

Subfamily VENERINAE

Genus Antigona Schumacher, 1817

Subgenus Periglypta Jukes-Brown, 1914

Antigona listeri (Gray, 1838)

Distribution: Southeast Florida and the West Indies, in shallow water.

Ecological data: Lives in sand. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Subgenus Circomphalus Mörch, 1853

Antigona callimorpha Dall, 1902

Distribution: South Florida and the West Indies, in 27 - 300 fathoms.

Ecological data: Found on sand and shell, and sand and gravel. Rare.

Listed by Dall (1886) as Venus pilula Reeve, a synonym.

Records. - Barbados: Blake, station 272, in 76 fms. (MCZ; USNM);
Diadema, stations 85, in 27 - 54 fms.; and 57, in 131 fms., valves.

Genus Chione Muhlfield, 1811

Subgenus Chione Muhlfield, 1811

Chione cancellata (Linné, 1767)

Distribution: North Carolina to Brazil, in shallow water.

Ecological data: Lives in muddy sand, particularly along protected coastal areas. A common form; rare in Barbados. Occasionally drifted into deep water.

Records. - Barbados: Valves of this species were obtained by the Diadema at station 79, in 27 - 54 fms.

Remarks: This species is common in the Pliocene of Florida.

Subgenus Timoclea Brown, 1827

Chione pygmaea (Lamarck, 1818)

Distribution: South Florida to the Lesser Antilles, in shallow water.

Ecological data: This form is associated with rocky and sandy bottoms.

Records. - Barbados: Barbados (Thiele); Barbados and Bethsheba (both MCZ); station 19 (C.).

Subgenus Lirophora Conrad, 1862

Chione paphia (Linné, 1867)

Distribution: Lower Florida Keys and the West Indies, in shallow water.

Ecological data: Lives in sand. Moderately uncommon.

Records. - Barbados: Barbados (2 lots; MCZ); Barbados (Col. Voelker's Coll.); station 34 (E.). All beach specimens, valves.

Subfamily MERETRICINAE

Genus Tivela Link, 1807

Tivela mactroides (Born, 1778)

Distribution: The West Indies to Brazil, in shallow water.

Ecological data: Lives in sand. Uncommon in Barbados; common elsewhere.

Records. - Barbados: Barbados (Gov. Rawson; Carpenter Coll.).

Subfamily PITARINAE

Genus Pitar Romer, 1857

Subgenus Pitar Romer, 1857

Pitar fulminata (Menke, 1828)

Distribution: North Carolina to the Gulf of Mexico, the West Indies and south to Brazil, in 1 to 170 fathoms.

Ecological data: Lives in sandy bottoms. Rare in Barbados; common elsewhere. Pitar hebraea (Lamarck, 1818) is a synonym.

Records. - Barbados: Barbados (MCZ).

Subgenus Hysteroconcha P. Fischer, 1887

Pitar circinata Born, 1778

Distribution: The West Indies, in shallow water.

Ecological data: Found on sandy bottoms. Rare in Barbados; common elsewhere.

Records. - Barbados: Barbados (MCZ).

Pitar dione (Linné, 1758)

Distribution: Texas to Panama and the West Indies, in shallow to moderate depth.

Ecological data: Lives in sandy bottoms. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Barbados (MCZ).

Subgenus Veneriglossa Dall, 1886

Pitar vesica (Dall, 1886)

Distribution: Gulf of Mexico to Barbados, in 84 to 175 fathoms.

Ecological data: Found on sand, shell and coarse gravel. Moderately uncommon.

Records. - Barbados: Hassler (station number not given), in 100 fms. (MCZ);
Diadema, stations 50, in 100 fms.; 55, in 125 fms.; 85, in 27 - 54 fms.;
and 49, in 100 fms.

Pitar sp.

Remarks: This undetermined species consists of loose valves of a shell measuring 7 mm. in length and 6 mm. high. The specimens were obtained by the Diadema at stations 89, 90, 91 and 92, in 54 - 82 fms.

Subfamily CIRCINAE

Genus Gouldia C. B. Adams, 1845

Gouldia cerina C. B. Adams, 1845

Distribution: North Carolina to the Lesser Antilles, in 13 to 229 fathoms.

Ecological data: Lives in sand. A common form; uncommon in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms.

(MCZ); Diadema, stations 79, in 27 - 54 fms., living; 87 and 88, in 27 - 82 fms.

Genus Callista Poli, 1791

Callista sp.

Remarks: Three valves of an interesting shell measuring 7 mm. in length and 6 mm. high were obtained by the Diadema at station 79, in 27 - 54 fms. Bottom of sand and shell.

Genus Macrocallista Meek, 1791

Macrocallista maculata (Linné, 1758)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives in sand. Rare in Barbados; common in the Gulf of Mexico and elsewhere.

Records. - Barbados: Barbados (MCZ).

Family PETRICOLIDAE

Subfamily PETRICOLINAE

Genus Petricola Lamarck, 1801

Petricola lapicida (Gmelin, 1791)

Distribution: South Florida to the Lesser Antilles, in shallow water.

Ecological data: Bores into coral. Common.

Records. - Barbados: One complete, dead specimen of this species was obtained by Clarke and Bousfield at station 39, in 30 - 40 ft.

Remarks: Explorations into the habitat of this species may reveal that it is also common in Barbados.

Superfamily TELLINACEA

Family TELLINIDAE

Genus Tellina Linné, 1758

Subgenus Tellina Linné, 1758

Tellina radiata Linné, 1758

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Dwells in sandy substrate, buried about 8" to 2 ft.

A common species; occasionally washed ashore on Barbados. It was found by Emery, living at St. Lawrence.

Records. - Barbados (Thiele); Crane Beach and Barbados (2 lots; MCZ); Barbados (Col. Voelker); Barbados (E.).

Subgenus Tellinella Morch, 1853

Tellina listeri Roding, 1798

Distribution: North Carolina to Brazil, in shallow water.

Ecological data: Lives in sand. A common form; rare in Barbados.

Tellina interrupta Wood, 1815 is a synonym.

Records. - Barbados: Barbados (MCZ).

Subgenus Scissula Dall, 1900

Tellina similis Sowerby, 1806

Distribution: Florida and south to the Lesser Antilles, in shallow water.

Ecological data: Lives in muddy sand. Probably uncommon in Barbados; common elsewhere.

Records. - Barbados: Eolis Junior (station number not given) in 52 fms.; (USNM); Diadema, station 79, in 27 - 54 fms., valves (grab); station 35, valve (E.).

Remarks: This species is found as fossil in the Pliocene of St. Petersburg, Florida.

Tellina candeana d'Orbigny, 1842

Distribution: Bermuda and Florida south to the Lesser Antilles, in shallow water.

Ecological data: Lives in sand. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: One living specimen was obtained by the Diadema

at station 80, in 27 - 54 fms.

Subgenus Angulus Muhlfield, 1811

Tellina diantha Boss, 1964

Distribution: Barbados to Rio de Janeiro, Brazil, in shallow water.

Ecological data: Not given. Probably a sand dweller. Rare.

Records. - Barbados: Barbados (J. Kugler; MCZ).

Tellina tenera Say, 1822

Distribution: Prince Edward Island to the Gulf of Mexico and the West Indies, in shallow to moderate depths.

Ecological data: Lives in sandy bottoms. An uncommon form; rare in Barbados.

Records. - Barbados: Blake, station 287, in 7.5 - 50 fms.

Tellina paramera Boss, 1964

Distribution: Bermuda, off the coast of Florida and the West Indies, in 2 ft. to 50 fathoms.

Ecological data: Not given. Probably a sand dweller.

Records. - Barbados: Eolis Junior, (station number not given), Off Paynes Bay, in 50 fms., and Carlisle Bay, in 6 fms. (both USNM).

Subgenus Scrobiculina Dall, 1900

Tellina magna Spengler, 1798

Distribution: Cape Hatteras, North Carolina to the Lesser Antilles, in shallow water.

Ecological data: Lives in sand. A common form; probably uncommon in Barbados.

Records. - Barbados: Beach specimens of this species were observed in Col. Voelker's collection.

Subgenus Eurytellina P. Fischer, 1887

Tellina punicea Born, 1778

Distribution: Florida Keys and the West Indies, in shallow water.

Ecological data: Lives in muddy sand. A common form; rare in Barbados.

Records. - Barbados: Three valves of this species collected by F. G. Kellett are in the MCZ.

Subgenus Merisca Dall, 1900

Tellina martinicensis d'Orbigny, 1842

Distribution: Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Probably lives in sand. Moderately common in some areas; rare in Barbados.

Records. - Barbados: One dead, complete specimen of this species was obtained by Clarke and Bousfield at station 11.

Subgenus Elliptotellina Cossmann, 1886

Tellina americana (Dall, 1900)

Distribution: Off Cape Lookout, North Carolina and Barbados, in 52 to 138 fathoms.

Ecological data: Not obtained; probably a sand dweller. Rare.

Records. - Barbados: One old valve of this species was obtained by the Diadema at station 107, in 109 - 138 fms.

Genus Arcopagia Brown, 1827

Arcopagia fausta (Pulteney, 1799)

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives in muddy sand, buried about 1 ft. deep. A common form; frequently washed ashore on Barbados.

Records. - Barbados: Barbados (Maynard; Carpenter Coll.); Barbados, 3 lots (MCZ); Barbados (Col. Voelker); stations 16 (C. & B.); 23 and 25 (C.); and 35 (E.).

Genus Strigilla Turton, 1822

Strigilla carneria (Linné, 1758)

Distribution: North Carolina to Brazil, in shallow water.

Ecological data: Lives in sand. A common species; frequently washed ashore on Barbados.

Records. - Barbados: Barbados, 2 lots (F. G. Kellett); Barbados (S. Putzeys Coll.); Barbados (R. J. Kirkland); Barbados (E. M. Howland);

Barbados (Grand Rapids Museum). All (MCZ); stations 21, dead (C.); and 36, dead (E.).

Family SEMELIDAE

Genus Semele Schumacher, 1817

Semele proficua (Pulteney, 1794)

Distribution: Virginia to the Gulf of Mexico and the West Indies, in shallow water.

Ecological data: Lives in muddy sand. Uncommon.

Records. - Barbados: Barbados (Thiele); Barbados, 2 lots (MCZ); Barbados (Col. Voelker); stations 22 and 23 (C.). All beach specimens.

Genus Abra Lamarck, 1818

Abra sp.

Remarks: A right valve of a partly worn out shell, probably referable to Abra lioica Dall, 1881, was obtained by the Diadema at station 84, in 27 - 54 fms.

Family DONACIDAE

Genus Donax Linné, 1758

Donax denticulatus Linné, 1758

Distribution: The West Indies.

Ecological data: Lives in sand in the intertidal zone and below low-

tide mark. A common form. Rare in Barbados.

Records. - Barbados: One lot containing several loose valves, collected by F.G. Kellett, are in the Museum of Comparative Zoology. The validity of this record has been already discussed.

Superfamily MACTRACEA

Family MACTRIDAE

Genus Mactra Linné, 1767

Mactra alata Spengler, 1802

Distribution: The West Indies to Brazil, in shallow water.

Ecological data: Lives in muddy sand. Rare in Barbados; moderately common elsewhere.

Records. - Barbados: Barbados (MCZ).

Genus Mulinia Gray, 1837

Mulinia portoricensis Shuttleworth, 1856

Distribution: Puerto Rico and Barbados, in shallow water.

Ecological data: Not obtained; probably a sand dweller.

Records. - Barbados: One valve of this species was found by Emery at station 35.

Family MESODESMATIDAE

Genus Ervilia Turton, 1822

Ervilia nitens (Montagu, 1806)

Distribution: South Carolina to the Lesser Antilles, in shallow to moderate depths.

Ecological data: Not obtained. Rare in Barbados; common elsewhere.

Records. - Barbados: One valve of this species was dredged by the Blake at station 287, in 7.5 - 50 fms. (MCZ).

Superfamily MYACEA

Family CORBULIDAE

Genus Notocorbula Iredale, 1930

Notocorbula operculata (Philippi, 1848)

Distribution: North Carolina to Florida and the West Indies, in 5 to 805 fathoms.

Ecological data: Not obtained; probably lives in muddy sand. A common form; probably uncommon in Barbados. Corbula disparilis d'Orbigny, 1842 is a synonym.

Records. - Barbados: Three valves of this species were obtained by the Diadema at stations 79, 84 and 88, in 27 - 82 fms.

Genus Corbula Bruguière, 1792

Corbula blandiana C. B. Adams, 1852

Distribution: Port Royal, Jamaica and Barbados, in shallow water.

Ecological data: Found on muddy bottom. Rare.

Records. - Barbados: Two valves of this species were obtained by the Diadema at stations 81 and 91, in 27 - 54 fms.

Remarks: Dall (1886) listed this form as a synonym, a young stage, of C. dietziana C. B. Adams. Our shell, however, is thinner and less convex.

Family TEREDINIDAE

Remarks: The only records of shipworms in the collections examined are in the Carpenter Collection, Redpath Museum. They are included in one lot containing several specimens identified as Teredo bipennata (Turton). Examination of this material by Ruth Turner of the Museum of Comparative Zoology, revealed that there were two species involved, i.e., the former species and Psiloteredo megotara (Hanley).

In 1964, and at the request of Dr. Turner, John Lewis installed several test boards at St. James, Barbados. These were removed about six months later and sent back to Harvard University. While visiting the Museum of Comparative Zoology, Dr. Turner was kind enough to examine the above boards for results. She found four additional species which, together with the previous records, are systematically listed as follows:-

Genus Psiloteredo Bartsch, 1922

Psiloteredo megotara (Hanley, 1833) = T. nana Turton, 1822

Genus Teredo Linné, 1758

Teredo bartschi Clapp, 1923

Teredo somersi Clapp, 1923

Teredo clappi Bartsch, 1923

Teredo bipinnata (Turton, 1860)

Genus Teredothyra Bartsch, 1921

Teredothyra dominicensis (Bartsch, 1921)

The above species have a wide distribution in the Atlantic Ocean,
particularly in warm waters.

Family THRACIIDAE

Genus Cyathodonta Conrad, 1849

Cyathodonta cruziana Dall, (date not located)

Distribution: Not recorded.

Ecological data: Not given. Rare in Barbados.

Records. - Barbados: One fragmented valve of this delicate shell was obtained by the Diadema at station 83, in 27 - 54 fms.

Remarks: Cyathodonta semirugosa Reeve, 1859 may be this species.

Genus Bushia Dall, 1886

Bushia elegans (Dall, 1886)

Distribution: Florida Strait and the West Indies, in 54 to 82 fathoms.

Ecological data: Found on sand, and hard sand. Rare.

Records. - Barbados: Blake, station 272, in 76 fms.; Diadema, station 90, in 54 - 82 fms. (broken valve).

ORDER SEPTIBRANCHIA

Superfamily POROMYACEA

Family VERTICORDIIDAE

Genus Verticordia Sowerby, 1844

Verticordia acuticostata (Philippi, 1844)

Distribution: Southern Florida and the West Indies, in 71 to 600 fathoms.

Ecological data: Not given. Rare in Barbados.

Records. - Barbados: Hassler (station number not given), in 100 fms. (MCZ).

Verticordia woodi E. A. Smith, 1885

Distribution: Gulf of Mexico and the West Indies, in 100 to 1060 fms.

Ecological data: Not given. A rare form.

Records. - Barbados: A fragment probably referable to this species was obtained by the Hassler in 100 fms., (MCZ).

Subgenus Trigonulina d'Orbigny, 1846

Verticordia ornata (d'Orbigny, 1846)

Distribution: North Carolina to Florida and the West Indies, in 8 to 687 fathoms.

Ecological data: Not obtained. A common species.

Records. - Barbados: One valve of this interesting species was obtained by the Diadema at station 94, in 54 - 82 fms.

Subgenus Haliris Dall, 1866

Verticordia fischeriana Dall, 1861

Distribution: North Carolina to the Gulf of Mexico and the West Indies, in 54 to 229 fathoms.

Ecological data: Not obtained. Uncommon.

Records. - Barbados: Blake (station number not given), in 100 fms., (USNM); Diadema, stations 92, 99 and 112, in 54 - 138 fms. (One valve

at each station).

Family POROMYACIDAE

Genus Poromya Forbes, 1844

Poromya granulata (Nyst and Westendorp, 1839)

Distribution: Western Atlantic: Labrador to the Florida Keys and the West Indies; Eastern Atlantic: North Eurasia to Canaries, in 16 to 1,450 fathoms. (Clarke, 1960).

Ecological data: Lives in sand, and sandy mud. A common species.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ); Diadema, station 49, in 100 fms., valve; and station 50, in 100 fms., living.

Poromya elongata Dall, 1886

Distribution: Gulf of Mexico, northwest of Cuba, and Barbados, in 100 to 199 fathoms.

Ecological data: Not given. A rare species.

Records. - Barbados: Blake (station number not given), in 100 fms. (MCZ);

Poromya rostrata Rehder, (date not located)

Distribution: Off Cape Hatteras, North Carolina to Florida and the West Indies, in 27 to 100 fathoms.

Ecological data: Found on sand, coarse gravel and shell. Rare in Barbados; uncommon elsewhere.

Records. - Barbados: Diadema, station 57, in 125 fms. (valve).

Family CUSPIDARIIDAE

Genus Cuspidaria Nardo, 1881

Cuspidaria jeffreysi (Dall, 1881)

Distribution: Southern Florida and the West Indies, in 100 to 1,002 fathoms.

Ecological data: Not given. Rare in Barbados; uncommon off Florida.

Records. - Barbados: Blake (station number not given), in 100 fms. (USNM).

Cuspidaria obesa (Loven, 1846)

Distribution: Arctic Sea to the Lesser Antilles; Europe; in 20 to 1,290 fathoms.

Ecological data: Found on a bottom of sand and shell. A common form.

Records. - Barbados: Blake (station number not given), in 100 fms.

(USNM; MCZ); Diadema, stations 49, in 100 fms., and 104, in 82 - 109 fms. (both fragments).

Cuspidaria microrhina Dall, 1886

Distribution: East Florida to the Lesser Antilles, in 153 to 509 fathoms.

Ecological data: Found on sandy and rocky bottom. Rare in Barbados; probably uncommon elsewhere.

Records. - Barbados: One broken valve of this species was obtained by the Diadema at station 71, in 153 - 164 fms.

Remarks: Dall (1886, considered this form as a variety of C. rostrata Spengler, 1793. Later, in 1889, he listed it as a full species. See Bull. MCZ., 12, pp. 294 - 295; and Bull. U. S. Nat. Mus. No. 37, 1889.

Genus Leiomya A. Adams, 1864

Leiomya granulata (Dall, 1881)

Distribution: Southeast Florida to the Gulf of Mexico and the West Indies, in 30 to 118 fathoms.

Ecological data: Lives in sand. An uncommon form; rare in Barbados.

Records. - Barbados: Blake (station number not given), in 100 fms.; station 272, in 76 fms. (both USNM); Diadema, stations 90, in 54 - 82 fms., valve; 49, in 100 fms., living; and 56, in 100 fms. (valve).

Genus Cardiomya A. Adams, 1864

Cardiomya costellata (Deshayes, 1837)

Distribution: Western Atlantic: North Carolina to south Florida and the West Indies; Eastern Atlantic: Norway to Canaries and Mediterranean, in 2 to 1,094 fathoms (Clarke, 1960).

Ecological data: Lives in muddy bottoms. Common off eastern Florida; rare in Barbados.

Records. - Barbados: Diadema, station 71, in 153 - 164 fms. (broken valve).

Cardiomya musticostata (Verrill and Smith, 1882)

Distribution: Bermuda and North Carolina to the Gulf of Mexico and the West Indies, in 84 to 158 fathoms.

Ecological data: Found on sand and rocks. Rare in Barbados. Moderately uncommon elsewhere.

Records. - Barbados: Diadema, station 71, in 153 - 164 fms., broken valve.

Remarks: Varietal complexes in the shell morphology of the species C. costellata, C. multicosata, and C. striata, make these three species very closely related and have been a subject of discussion by Dall (1886), Verrill and Smith (1882), and Jeffreys (1882). Our record represents the Jeffrey's var. curta which Verrill and Smith consider a variety of multicosata. Abbott (1954) points out that C. multicosata may be the adult form of C. costellata.

Cardiomya perrostrata (Dall, 1881)

Distribution: South of Martha's Vineyard, North Carolina to the Lesser Antilles, in 27 to 416 fathoms.

Ecological data: Found in sand and ooze. Moderately common in shallow water in some areas; rare in Barbados.

Records. - Barbados: Diadema, station 78, in 27 - 54 fms., valve.

Genus Myonera Dall and Smith, 1886

Myonera lamellifera (Dall, 1881)

Distribution: Florida Keys to the Gulf of Mexico and the West Indies, in 54 to 250 fathoms.

Ecological data: Not obtained.

Records. - Barbados: Diadema, stations 94, in 54 - 82 fms.; 104, in 82 fms.; and 109, in 109 - 138 fms., valves.

CLASS CEPHALOPODA

SUBCLASS COLEOIDEA

ORDER DECAPODA

Family SPIRULIDAE

Genus Spirula Lamarck, 1799

Spirula spirula Linné, 1758

Distribution: Worldwide.

Ecological data: Mesopelagic, approximately between 100 and 800 fms. (Clarke, 1962). A common form, the dead shells of which float and are drifted ashore.

Records. - Barbados: Barbados (collector's name not given; Carpenter Coll.); station 36 (E.), dead.

Remarks: G. B. Tryon (1882) reported that one specimen of this form with the animal, was dredged by the Blake in the West Indies in 1878, at a depth of 950 fms. I was unable to locate this record.

ADDENDA

The paper by T. McGinty (1962) describing Rissoina sheaferi, was found after the systematic account was typed. Therefore, it was possible to incorporate this record only in the faunal list. See page 62. This species is recorded from St. Croix, Virgin Islands, Barbados and Panama. It belongs in the subgenus Phosinella Morch, 1876. See page 149.

After this work was finished, the writer was informed by a colleague that new species in the genus Perotrochus have been found in the West Indies and that Perotrochus quoyanus, see page 112, may not be such species. However, no bibliographic reference was given with this information. I have not read Fischer and Bernardi's description of this form, nevertheless, I have listed our specimens as the above species because of their size and colour, and also due to the fact that it represents, with P. adansonianus, the only two known living representatives of this rare genus found in the Western Atlantic for almost a century.

The geochronological range of this genus is Silurian to Recent. Several hundred fossil species have been recorded, but only eight species are known as living today. They are all confined to deep-water, and with the exception of P. hirasei, found in Japanese waters, all others are quite rare. However, due to the wide geographic distribution of this genus, it is possible that new species may have come to light.

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