

THE INVERTEBRATES OF GALETA REEF (CARIBBEAN PANAMA):
A SPECIES LIST AND BIBLIOGRAPHY

BY

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THE INVERTEBRATES OF GALETA REEF (CARIBBEAN PANAMA)

A SPECIES LIST AND BIBLIOGRAPHY

by John Cubit¹ and Suelynn Williams²

ABSTRACT

The fringing coral reef at Galeta Point, on the Caribbean Coast of Panama, has been under intensive study for approximately ten years. The combined studies of the reef represent approximately 5,000 person hours of field sampling and have documented the presence of approximately 775 species of invertebrates. A list of these species is presented here together with annotations to all known sources of information pertaining to the occurrence of these species on Galeta Reef. For most species these records are the southernmost in the Caribbean Sea.

INTRODUCTION

The following is an inventory of the invertebrates that have been found on Galeta Reef, Panama, together with all known sources of information pertaining to the occurrence of these species on the reef. At present such data are lacking for Caribbean reefs, but are needed to formulate rational policies of resource management and to serve as baseline information for measuring natural and man-caused changes of the environment (FAO, 1969). This need was recently reiterated by the United Nations Environment Program (UNEP, 1981). We have compiled this list from published papers, unpublished reports, personal communications, our own observations, and the set of specimens in the reference collection of the Galeta Point Marine Laboratory. This listing has been restricted only to those invertebrates studied on, or

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collected from, Galeta Reef itself; it does not include species reported from nearby areas or the general Caribbean coast of Panama.

Galeta Reef has been under intensive investigation for approximately ten years. Most of the reef studies have been monitoring surveys designed to determine the species composition of the reef and to document temporal changes in the distribution and abundance of the biota of the reef.

This reef was established as a biological reserve in the late 1960s. Intensive monitoring of the reef biota was started by Charles Birkeland and others in 1970, beginning with a three-year program

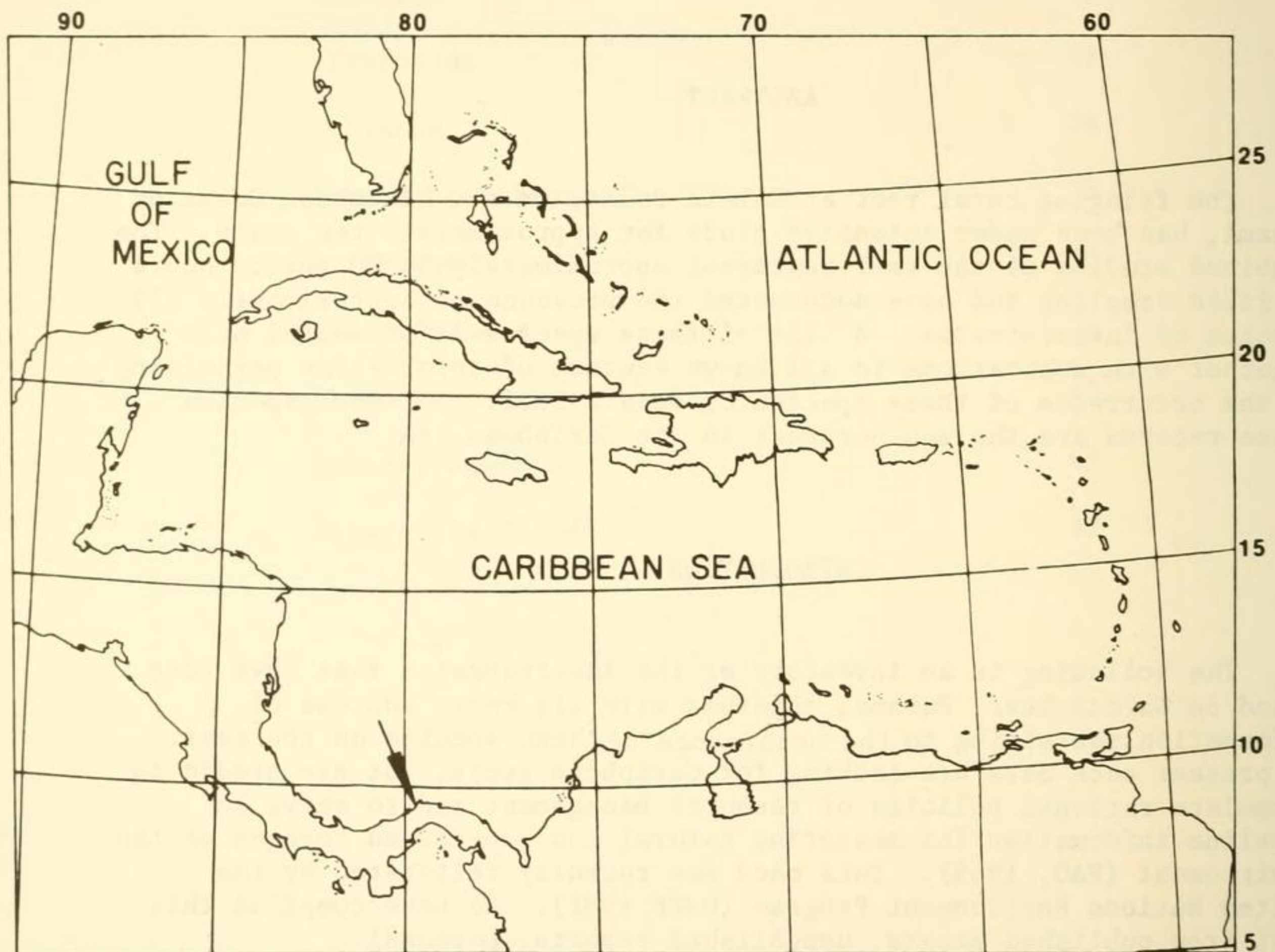


Figure 1. Map of Caribbean Sea showing the location of Galeta Point ($9^{\circ}24'18''\text{N}$, $79^{\circ}51'48.5''\text{W}$) (marked by an arrow at lower left).

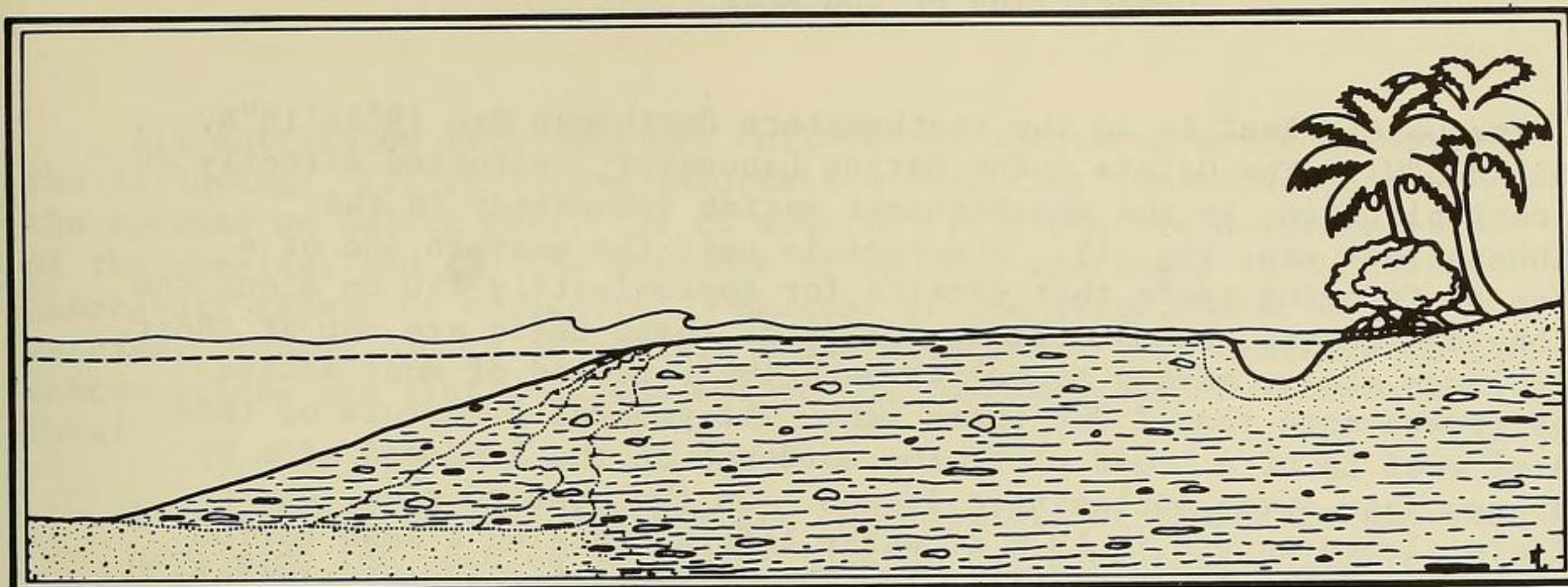


Figure 2. Schematic cross section of the reef at Galeta Point. The reef platform (10 to 300 m wide) is in shallow water (less than 40 cm deep), and is occasionally exposed above the level of the tide (shown as a dashed line). The seaward edge of the reef has various profiles (shown in the figure as the solid and dotted lines) which terminate at 3 to 10 m depth at a base of sand or coral rubble. The reef platform encloses a lagoon and channels and is backed on the landward side by mangroves and sand beaches.

supported by the U.S. Environmental Protection Agency (see Birkeland et al., 1976). Subsequently the monitoring was expanded to include physical factors in a set of projects supported by the Smithsonian Institution Environmental Sciences Program. In addition, the reef has been studied by a number of visiting investigators. Overall, the information in this inventory has been derived from the efforts of approximately 50 people who have conducted a variety of studies, of variable duration, during the period of 1969 to 1980. In all, we estimate that this represents approximately 5,000 person-hours of sampling effort of reef invertebrates. The presence of approximately 775 species of macroinvertebrates has been documented in these investigations of the reef. In these studies certain taxonomic and ecological groups have received more attention than others. For instance, the gastropods, polychetes, and certain groups of decapods have been more thoroughly collected, while the sponges, ascidians, bryozoans, and smaller crustaceans have not. There is also more information regarding those invertebrates that are major occupiers of primary substratum on the shallow reef platform than for those species that are mobile or occur on the subtidal reef slope and sand bottom.

Description of the Reef

The Galeta Reef is in the southwestern Caribbean Sea ($9^{\circ}24'18''\text{N}$, $79^{\circ}51'48.5''\text{W}$). The Galeta Point Marine Laboratory, situated directly on the reef platform, is the southernmost marine laboratory in the Caribbean (see map, Fig. 1). The reef is near the western end of a system of fringing reefs that stretch for approximately 250 km along the Caribbean coast of Panama. The majority of these reefs are now at their post-climax stage, having passed through their period of most active coral growth more than 2,000 years ago. The general structure of this type of reef is of a broad platform, bordered on the landward side by mangroves, and often enclosing a lagoon. On the seaward side, the platform slopes into 3 to 10 m of water before reaching a sand bottom (Macintyre and Glynn, 1976; Fig. 2). The surface of the reef platform is at the lower level of the intertidal zone. The range of the tides on this coast is only about 30 cm, so the reef platform is never deeply under water. Wave action tends to maintain water over the reef even during the lowest low tides; however, during calm weather the reef platform may be exposed above water level for long periods of the day, subjecting the biota of the platform to extremes of desiccation, solar radiation, high temperatures, rainfall, and predation by shorebirds. There are approximately 30-40 such instances of reef exposure each year, varying in duration from 1 to 14 hours.

Other than the extreme low tides, the reef is subject to relatively little disturbance. Galeta Point is south of the Caribbean "hurricane belt" (the area traversed by hurricanes and tropical storms) (Neumann et al., 1978), and is thus protected from this source of periodic disruption to which most other Caribbean reefs are exposed. Salinity and seawater temperature have been monitored on this reef for approximately seven years: there is no evidence that the subtidal biota are ever exposed to extremes of any of these factors. Mean seawater temperature is approximately 29°C with the range of variation confined to plus or minus a few degrees (except during the extreme low tides previously mentioned, when temperatures in shallow pools of standing water on the reef platform may reach 35°C to 40°C). Salinities average approximately 33 ppt, also with little variation (except for those organisms above water level which may be exposed to heavy rains).

Most of the hard substrata of the reef platform are covered with algae, primarily the two red algae Acanthophora spicifera (Vahl) Borgesen and Laurencia papillosa (Forsskal) Greville. The seagrass Thalassia testudinum Koenig and Sims occupies much of the area of loose sediment. The biota of the subtidal reef slope consists of various species of foliose and crustose coralline algae, some fleshy algae, and live corals. Most of the species in this inventory were collected from the reef platform.

Explanation of Listings

All entries on this list are followed by notations which refer to the following: (1) published information regarding the occurrence of the species on Galeta Reef, (2) to whom to attribute the determination of the species, and (3) the presence of voucher specimens in the Galeta laboratory reference collection. Because of the large number of entries, we have had to abbreviate these notations. The meanings of the abbreviations are listed at the end of the inventory and follow this form:

1. Multiple capital letters are the initials of those persons who have made the species determinations of the specimens collected from Galeta Reef.
2. The single capitals B, D, F, and G refer to appendices in Birkeland et al. (1976), the single most comprehensive survey of Galeta Reef.
3. E73-E76 refer to reports of the Environmental Sciences Program for the years numbered.
4. Lower case letters denote references listed under Literature Cited.
5. + signifies voucher specimens of the species are present in the reference collection at the Galeta Point Marine Laboratory.

To aid users of this list and to avoid compounding errors, we have noted any variations in nomenclature and spelling among the sources. We refer the user to the sources in the annotations for the authors of the species.

Abbreviations Used

SPECIES DETERMINATIONS

| | |
|-----|-------------------|
| AR | Amada A. Reimer |
| BM | B. Macurda |
| CAC | C. A. Child |
| CB | Charles Birkeland |
| CC | C. Cutress |
| DLM | David L. Meyer |
| DLW | Diana L. Werder |
| DS | Diane Stoecker |
| EK | Eugene Kaplan |
| GLH | Gordon L. Hendler |
| HD | Hugh Dingle |

IT Ina Tumlin
 JC John Cubit
 JD Judith Dudley
 JH Janet Haig
 JR Joseph Rosewater
 JRY Joyce Redemske Young
 JS James Stames
 JSG John S. Garth
 JW J. Wells
 JWP J. W. Porter
 KBM Kaniaulono B. Meyer
 KS Ken Sebens
 KR Klaus Ruetzler
 LGA Lawrence G. Abele
 PAA Peter A. Abrams
 PG Peter W. Glynn
 RB R. Bullock
 RLC Roy L. Caldwell
 RHG Robert H. Gore
 RHM R. H. Millar
 RM Raymond B. Manning
 RO Randy Olson
 RS Rick Steger
 SS Stephen Shuster
 SW Suelynn Williams
 VB Victoria Batista

LITERATURE REFERENCES

B, D, F, G = appendices B, D, F, and G in Birkeland et al., 1976.

E73, E74, E75, E76 = reports of the Environmental Sciences Program of the Smithsonian Institution (Environmental Monitoring and Baseline Data from the Isthmus of Panama - 1973, 1974, 1975, 1976, respectively).

a = Fauchald (1977)
 b = Birkeland (1974)
 c = Bertsch (1975a)
 d = Reimer (1975)
 e = Gore and Abele (1976)
 f = Macintyre and Glynn (1976)
 g = Sebens (1977)
 h = Meyer (1977)
 i = Sebens (1976)
 j = Bertsch (1975b)
 k = Hendler (1977)
 m = Abrams (1976)
 n = Koehl (1977)
 o = Yee and Chang (1978)
 p = Lawrence (1976)
 q = Sebens (1982)

| | |
|----|-------------------------------|
| r | = Sebens and DeRiemer (1977) |
| s | = Gore (1977) |
| t | = Porter (1972) |
| u | = Gore and Abele (1973) |
| v | = Olson (1979) |
| w | = Birkeland et al. (1976) |
| x | = Vasquez-Montoya (1979) |
| y | = Batista (1980) |
| z | = Abele (1972) |
| aa | = Powell (1971) |
| bb | = Smith (1973) |
| cc | = Meyer (1973) |
| dd | = Brattegard (1974) |
| ee | = Lasker (1979) |
| ff | = Lehman and Porter (1973) |
| gg | = Spivey (1976) |
| hh | = Henry and McLaughlin (1975) |
| ii | = Jackson (1973) |
| jj | = Rützler and Sterrer (1970) |
| kk | = Child (1979) |
| ll | = Southward (1975) |
| mm | = Caldwell (1981) |

OTHER

+ signifies this species is currently represented in the reference collection of the Galeta Point Marine Laboratory.

PORIFERA

| | |
|------------------------------|--------------------------|
| <u>Anthosigmella varians</u> | E73, E74, E75, E76, v, q |
| <u>Craniella</u> sp. | E73, E74, E75, E76 |
| <u>Geodia</u> sp. | F |
| <u>Niphates erecta</u> | KR, y |
| <u>Placospongia</u> sp. | E75 |
| <u>Sigmatocia caerulea</u> | KR, y |
| <u>Sigmatocia</u> sp. | KR, y |
| <u>Spongia</u> sp. | KR, y |
| <u>Tedania ignis</u> | KR, y |

COELENTERATA

(by Order)

HYDROIDA

| | |
|-------------------------------|----------------------------------|
| <u>Millepora alcicornis</u> | t |
| <u>Millepora complanata</u> | B, E73, E74, E76, f, q, v, t, jj |
| <u>Millepora moniliformis</u> | t |
| <u>Millepora</u> spp. | v |
| <u>Stylaster rosaceus</u> | DLM, + |
| Unidentified sp. | y |

CERIANTHARIA

| | |
|----------------------------------|------|
| <u>Ceriantheopsis americanus</u> | y |
| <u>Cerianthus</u> sp. | B, + |

ACTINIARIA

| | |
|---------------------------------|---|
| <u>Aiptasia tagetes</u> | B, q, y, + |
| <u>Anthopleura krebsi</u> | B, F, + |
| <u>Anthopleura</u> sp. | B, E73, + |
| <u>Bartholomea annulata</u> | r, y |
| <u>Bunodeopsis antilliensis</u> | r |
| <u>Bunodeopsis globulifera</u> | KS, ? in y |
| <u>Condylactis gigantea</u> | i, r, bb |
| <u>Epiphellia</u> n. sp. | B, q, + |
| <u>Lebrunia coralligens</u> | r |
| <u>Lebrunia danae</u> | r |
| <u>Phyllactis flosculifera</u> | q, <u>P. floculifera</u> [sic] in CC, B, E73, E74, E75, E76, + |
| <u>Phymanthus crucifer</u> | CC, B, E73, E74, E76, q, r, + |
| <u>Phymanthus</u> sp. | E75 |
| <u>Stoichactis helianthus</u> | CC, i, r |
| <u>Telmatactis americana</u> | B, + |
| <u>Telmatactis roseni</u> | B, + |
| <u>Telmatactis vernonia</u> | r |

CORALLIMORPHARIA

| | |
|--------------------------------|-------------------------------------|
| <u>Paradiscosoma neglecta</u> | r |
| <u>Rhodactis sancti-thomae</u> | r |
| <u>Ricordea florida</u> | r, v, <u>Recordia</u> in CC, JRY, + |

ZOANTHIDEA

| | |
|---|--|
| <u>Isaurus duchassaingi</u> | AR, B, E73, E76, q, + |
| <u>Isaurus tuberculatus</u> | q |
| <u>Palythoa caribaeorum</u> | B, E73, E74, E76, g, n, q, v, + |
| <u>Palythoa gigantea</u> | E74 |
| <u>Palythoa</u> sp. | E75, E76 |
| <u>Palythoa</u> spp. | v |
| <u>Palythoa sociatus</u> | y |
| <u>Palythoa variabilis</u> | B, E74, d, g, n, q, y, + |
| <u>Palythoa (= Protopalythoa) grandis</u> | q |
| <u>Parazoanthus parasiticus</u> | q |
| <u>Parazonathus swiftii</u> | q |
| <u>Zoanthus pulchellus</u> | AR, + |
| <u>Zoanthus sociatus</u> | AR, B, F, E73, E74, E75, E76, g, d, q, y, + |
| <u>Zoanthus solanderi</u> | AR, B, E73, E74, E75, E76, + <u>Z. solandri</u> [sic] in g, q |
| <u>Zonathus</u> sp. | E76 |

RHIZOSTOMAE

| | |
|-----------------------------|----|
| <u>Cassiopea ?xamachana</u> | JC |
|-----------------------------|----|

SCLERACTINIA (by family)

Astrocoeniidae

| | |
|----------------------------------|--|
| <u>Stephanocoenia michelinii</u> | JW, f, <u>Stephanocoencia</u> [sic] in t, + |
|----------------------------------|--|

Pocilloporidae

| | |
|-------------------------|----------|
| <u>Madracis decatis</u> | JW, t, + |
|-------------------------|----------|

Acroporidae

| | |
|-------------------------|------|
| <u>Acropora palmata</u> | t, v |
|-------------------------|------|

| | |
|-----------------------------|---|
| <u>Acropora cervicornis</u> | t |
|-----------------------------|---|

Agariciidae

| | |
|---|--------------------------------|
| <u>Agaricia</u> <u>agaricites</u> | JWO, B, E73, E74, E76, f, v, + |
| <u>Agaricia</u> <u>agaricites</u> forma <u>agaricites</u> | t |
| <u>Agaricia</u> <u>agaricites</u> forma <u>danae</u> | t |
| <u>Agaricia</u> <u>agaricites</u> forma <u>crassa</u> | t |
| <u>Agaricia</u> <u>agaricites</u> forma <u>purpurea</u> | t |
| <u>Agaricia</u> <u>agaricites</u> forma <u>humilis</u> | t |
| <u>Agaricia</u> <u>tenuifolia</u> | t |
| <u>Agaricia</u> spp. | v |
| <u>Helioseris</u> <u>cucullata</u> | t |

Siderastreidae

| | |
|-----------------------------------|--------------------------|
| <u>Siderastrea</u> <u>siderea</u> | DLM, B, f, q, t, v, y, + |
| <u>Siderastrea</u> <u>radians</u> | B, E73, E74, f, t, y, jj |

Poritidae

| | |
|----------------------------------|--|
| <u>Porites</u> <u>astreoides</u> | JW, B, E73, E74, E76, f, t, v, y, + <u>P. astreoides</u> in E75, jj |
| <u>Porites</u> <u>branneri</u> | JWP, t, + |
| <u>Porites</u> <u>divaricata</u> | t |
| <u>Porites</u> <u>furcata</u> | B, E73, E74, E76, f, t, jj |
| <u>Porites</u> <u>porites</u> | t, y |
| <u>Porites</u> sp. | E76 |

Faviidae

| | |
|--|-----------------------------------|
| <u>Colpophyllia</u> <u>amaranthus</u> | t |
| <u>Colpophyllia</u> <u>breviserialis</u> | t |
| <u>Colpophyllia</u> <u>natans</u> | JW, t, + |
| <u>Diplora</u> <u>clivosa</u> | t, q, v |
| <u>Diploria</u> <u>strigosa</u> | t |
| <u>Favia</u> <u>fragum</u> | DLM, B, E73, E74, E76, f, t, y, + |
| <u>Manacina</u> <u>areolata</u> | JWP, t, + |
| <u>Montastrea</u> <u>annularis</u> | JW, f, t, + |
| <u>Montastrea</u> <u>cavernosa</u> | JW, t, +, ee, ff |

Rhizangiidae

Astrangia solitaria B, t

Meandrinidae

Dichocoenia cf. stellaris JWP, +

Dichocoenia stokesii B, f, t

D. stokesia in E76

Meandrina meandrites t

Meandrina meandrites

var. meandrites JW, +

Mussidae

Isophyllia multiflora t

Isophyllia sinuosa PG, f, t, +

Mussa angulosa JWP, t, +

Mycetophyllia lamarckana JW, t, +

Mycetophyllia sp. B t

Caryophyllidae

Eusmilia fastigiata t

Dendrophylliidae

Tubastraea aurea t

GORGONACEA

Erythropodium caribaeorum B, E73, E74, E76, q

Gorgonia flabellum f

Gorgonia spp. v

Gorgonia ventalina b

PLATYHELMINTHES

Class: Turbellaria

Unident. species y

SIPUNCULA

| | |
|---|---------|
| <u>Aspidosiphon broki</u> | B, + |
| <u>Aspidosiphon speculator</u> | x |
| <u>Aspidosiphon spinoscutatus</u> | x |
| <u>Aspidosiphon</u> spp. (7 species) | B |
| <u>Dendrostomum</u> sp. | B |
| <u>Golfingia rimicola</u> | x |
| <u>Golfingia</u> spp. (4 species) | B, F |
| <u>Lithacrosiphon</u> spp. (5 species) | B |
| <u>Lithacrosiphon</u> sp. 3 | F |
| <u>Paraspidosiphon fisheri</u> | B, F, + |
| <u>Paraspidosiphon speciosus</u> | ? in B |
| <u>Paraspidosiphon spinoso-scutatus</u> | B, F, + |
| <u>Paraspidosiphon steenstrupi</u> | B, F, + |
| <u>Paraspidosiphon</u> spp. (7 species) | B |
| <u>Paraspidosiphon</u> sp. 4 | F |
| <u>Phascolosoma antillarum</u> | B, F, + |
| <u>Phascolosoma perlucens</u> | B, F, + |
| <u>Phascolosoma varians</u> | B, + |
| <u>Phascolosoma</u> spp. (7 species) | B |
| <u>Phascolosoma</u> spp. 3, 4 | F |
| <u>Themiste</u> spp. (3 species) | B |
| Unident. species | y |

ANNELIDA

(by family)

Ampharetidae

| | |
|-------------------------|---|
| <u>Isolda bipinnata</u> | a |
| <u>Isolda pulchella</u> | x |
| <u>Melinna</u> n. sp. | B |

Amphinomidae

| | |
|-------------------------------|-------------------------------|
| <u>Amphinomid sp. 1</u> | B, F, + |
| <u>Amphinomid sp. 2</u> | B, + |
| <u>Eurythoe complanata</u> | B, F, a, q, + |
| <u>Hermodice carunculata</u> | B, a, q, y |
| <u>Linopherus canariensis</u> | a (family Phyllodocidae in B) |
| Unident. species | y |

Aphroditidae

| | |
|--------------------------|---|
| <u>Aphrodita diplops</u> | a |
| <u>Aphrodita n. sp.</u> | B |

Arabellidae

| | |
|----------------------------|------------------|
| <u>Arabella mutans</u> | B, F, a, x, y, + |
| <u>Arabella sp. indet.</u> | a |

Ariciidae (listed thus by Vasquez-Montoya, 1979)

| | |
|---------------------------|---|
| <u>Naineris laevigata</u> | x |
| <u>Naineris mutila</u> | x |
| <u>Naineris setosa</u> | x |
| <u>Scoloplos armiger</u> | x |

Chrysopetalidae (Palmyridae in B)

| | |
|------------------------|---------|
| <u>Bhawania goodei</u> | B, a, + |
| <u>Bhawania riveti</u> | + |

Cirratulidae

| | |
|-------------------------------|---|
| <u>Cauleriella hamata</u> | x |
| <u>Cauleriella sp. indet.</u> | B, a |
| <u>Chaetozone sp. indet.</u> | B, a, y |
| <u>Cirratulus cirratus</u> | ? in a, <u>C. cirratulus</u> in B |
| <u>Cirriformia luxuriosa</u> | B, + (specimen in collection from Pacific) |
| <u>Cirriformia punctata</u> | B, a, + |

| | |
|--------------------------------------|--|
| <u>Dodecaceria concharum</u> | B, E74, a |
| <u>Tharyx</u> sp. indet. | B, a |
| Dorvilleidae | |
| <u>Dorvillea rubrovittatus</u> | a, <u>D. rubrovittata</u> in B |
| <u>Driloneresis nuda</u> | x |
| <u>Schistomeringos longicornis</u> | a, x |
| Eunicidae (Leodicidae in F) | |
| <u>Eunice afra</u> | B, F, a, + |
| <u>Eunice antennata aedificatrix</u> | B, a, + |
| <u>Eunice aphroditois</u> | B, F, a, + |
| <u>Eunice (Nigidion) cariboea</u> | a, +, <u>E. caribaea</u> [sic] in B, F |
| <u>Eunice filamentosa</u> | B, a, + |
| <u>Eunice vittatopsis</u> | x |
| <u>Eunice websteri</u> | B, a, + |
| <u>Eunice</u> sp. indet. | B, a |
| <u>Lysidice ninetta</u> | x |
| <u>Lysidice</u> sp. | y |
| <u>Marphysa amadae</u> | a |
| <u>Marphysa depressa</u> | x |
| <u>Marphysa</u> n. sp. | B |
| <u>Marphysa</u> sp. indet. | a |
| <u>Nematonereis unicornis</u> | a, x |
| <u>Palola siciliensis</u> | B, a, + |
| <u>Palola</u> sp. indet. | B, a |
| Flabelligeridae (Chloraemidae in B) | |
| <u>Pherusa capulata</u> | x |
| <u>Pherusa inflata</u> | B, a, + |
| <u>Piromis americana</u> | + (no identifier on voucher specimen) |
| Glyceridae | |
| <u>Glycera abbranchiata</u> | x |

| | |
|--|-----------------------------------|
| <u>Glycera oxycephala</u> | B, F, a |
| <u>Glycera tessellata</u> | B, a |
| <u>Glycera</u> sp. | B |
| Goniadidae | |
| <u>Goniada acicula</u> | B, a |
| Hesionidae | |
| <u>Hesione picta</u> | B, a |
| <u>Ophiodromus obscurus</u> | B, a |
| Lumbrineridae | |
| <u>Lumbrineris inflata</u> | a, <u>Lumbrinereis</u> in B |
| <u>Lumbrineris</u> sp. aff. <u>latreilli</u> | y |
| <u>Lumbrineris tetraura</u> | x, y |
| Lysaretidae | |
| Lysaretid sp. | B, a |
| <u>Oenone fulgida</u> | B, a (in family Arabellidae in B) |
| Maldanidae | |
| <u>Axiothella rubrocincta</u> | x |
| Nereidae | |
| <u>Ceratonereis mirabilis</u> | B, a, + |
| <u>Neanthes galetae</u> | a, x |
| <u>Neanthes</u> n. sp. 1 | B |
| <u>Neanthes</u> sp. indet. | B, a |
| <u>Nematonereis</u> sp. | y |
| <u>Nereis callaona</u> | B, F, a, + |
| <u>Nereis panamensis</u> | a |
| <u>Nereis</u> n. sp. A | B |
| <u>Nereis riisei</u> | a, <u>risei</u> [sic] in B, x |
| <u>Nereis</u> sp. | y |
| Nereidae sp. indet. | a |

| | |
|---|------------------------------------|
| <u>Perinereis elenacasoi</u> | B, F, + |
| <u>Perinereis anderssoni</u> | a, x, y |
| <u>Perinereis</u> sp. indet. A | B |
| <u>Perinereis</u> sp. indet. B | B |
| <u>Platynereis dumerilii</u> | B, F, a, x, + |
| <u>Platynereis</u> sp. indet. | B, a |
| <u>Pseudonereis gallapagensis</u> | B, F, + |
| | |
| Onuphidae | |
| <u>Onuphis nebulosa</u> | x |
| <u>Onuphis vermillionensis</u> | B, a, x (in family Eunacidae in B) |
| <u>Onuphis</u> sp. | B (in family Eunacidae in B) |
| | |
| Opheliidae | |
| <u>Armandia bioculata</u> | x |
| | |
| Oweniidae | |
| <u>Owenia collaris</u> | B, a |
| | |
| Paraonidae | |
| <u>Aricidea suecica</u> | x |
| | |
| Phyllodocidae | |
| <u>Anaitides erythrophyllus</u> | a, <u>erythrophylla</u> [sic] in B |
| <u>Anaitides</u> sp. cf. <u>lamellifera</u> | x |
| <u>Eulalia myriacyclum</u> | B, F, a, + |
| <u>Sige orientalis</u> | B, ? in a |
| | |
| Poecilochaetidae | |
| <u>Poecilochaetus johnsoni</u> | x |
| | |
| Polynoidea | |
| <u>Halosydna leucohyba</u> | B, a, + |
| <u>Halosydna</u> sp. 1 | B, + |

| | |
|-------------------------------------|---------|
| <u>Harmothoe</u> sp. indet. | B, a |
| <u>Harmothoe</u> <u>hirsuta</u> | x |
| <u>Lepidonotus</u> <u>humilis</u> | B, a, + |
| <u>Lepidonotus</u> <u>neophilus</u> | + |
| <u>Lepidasthenia</u> <u>varius</u> | a |

Sabellariidae

| | |
|--------------------------------------|---|
| <u>Phragmatopoma</u> sp. indet. | B, a |
| <u>Sabellaria</u> <u>alcocki</u> | B, + (specimen in collection from Pacific) |
| <u>Sabellaria</u> <u>floridensis</u> | B, a, + |

Sabellidae

| | |
|--|-------------------------------|
| <u>Chone</u> sp. | B, a |
| <u>Demonax</u> <u>leucaspis</u> | ? in a |
| <u>Demonax</u> sp. | B |
| <u>Hypsicomus</u> <u>torquatus</u> | +, B, F |
| <u>Hypsicomus</u> <u>phaeotenia</u> | a |
| <u>Megalomma</u> sp. | y |
| <u>Megalomma</u> sp. aff. <u>pigmentum</u> | x |
| <u>Megalomma</u> <u>roulei</u> | x |
| <u>Megalomma</u> <u>vesiculosum</u> | a, <u>Megaloma</u> [sic] in B |
| <u>Pseudopotamilla</u> <u>reniformis</u> | B, a |
| <u>Sabella</u> <u>melanostigma</u> | B, a, + |
| <u>Sabella</u> sp. 17 | B |
| <u>Sabella</u> sp. 18 | B |
| <u>Sabella</u> sp. | y |
| Sabellidae sp. indet. | a |
| <u>Sabellastarte</u> <u>magnifica</u> | JC |

Serpulidae

| | |
|---------------------------------------|------|
| Serpulid sp. 1 | F |
| Serpulid sp. 2 | F |
| <u>Spirobranchus</u> <u>giganteus</u> | JC |
| <u>Spirorbis</u> sp. | F, y |

Sigalionidae

| | |
|-------------------------------|---------|
| <u>Psammolyce spinosa</u> | B, a, + |
| <u>Sthenelais verruculosa</u> | x |

Spionidae

| | |
|---|------|
| <u>Boccardia polybranchia</u> | x |
| <u>Malacoceros indicus</u> | x |
| <u>Nerinides cantabra</u> | x |
| <u>Prionospio cirrifera</u> | x |
| <u>Prionospio heterobranchia</u> <u>texana</u> | B, a |
| <u>Pseudopolydora antennata</u> | x |

Syllidae

| | |
|------------------------------------|--|
| <u>Autolytus anoplos</u> | a |
| <u>Autolytus</u> n. sp. | B |
| <u>Autolytus</u> cf. <u>magnus</u> | B, F, + |
| <u>Haplosyllis spongicola</u> | B, a, + |
| <u>Langerhansia cornuta</u> | B, B, a, + |
| <u>Langerhansia mexicana</u> | B, a |
| <u>Odontosyllis</u> sp. | B |
| <u>Opisthosyllis brunnea</u> | B, F, a, + |
| <u>Pionosyllis</u> sp. indet. | a |
| Syllidae, unident. fragments | a |
| <u>Syllis longissima</u> | x |
| <u>Trypanosyllis taeniaformis</u> | x, y |
| <u>Typosyllis aciculata</u> | B, a, + (specimen in collection from Pacific) |
| <u>Typosyllis fuscoturata</u> | a |
| <u>Typosyllis</u> sp. A | B |
| <u>Typosyllis prolifera</u> | B, ? in a |
| <u>Typosyllis variegata</u> | B, a, + |

Terebellidae

| | |
|----------------------------|------------|
| <u>Eupolytmia nebulosa</u> | B, F, a, + |
|----------------------------|------------|

| | |
|--|---------|
| <u>Euthelepus pascua</u> | a |
| <u>Loimia medusa</u> | B, F, a |
| <u>Pista fasciata</u> | B, a, + |
| <u>Polycirrus</u> sp. | B, a, x |
| <u>Polycirrus</u> sp. aff. <u>haematodes</u> | x |
| <u>Streblosoma crassibranchia</u> | B, a, + |
| Terebellidae sp. indet. | a |
| <u>Thelepus setosus</u> | B, a |

Trichobranchidae

| | |
|----------------------------|---|
| <u>Trebellides stroemi</u> | x |
|----------------------------|---|

ARTHROPODA

CRUSTACEA: COPEPODA (by order)

CALANOIDA

| | |
|------------------|---|
| Unident. species | y |
|------------------|---|

CRUSTACEA: ISOPODA (by family)

Anthuridae

| | |
|-------------------------|----|
| <u>Accalathura</u> sp.? | SS |
|-------------------------|----|

Idoteidae

| | |
|----------------------------|---|
| <u>Cleantis planicauda</u> | x |
|----------------------------|---|

Cirolanidae

| | |
|-----------------------|----|
| <u>Cirolana parva</u> | SS |
|-----------------------|----|

| | |
|--------------------------|---|
| <u>Excirolana mayana</u> | x |
|--------------------------|---|

Excorallanidae

| | |
|---------------------|---|
| <u>Alcinora</u> sp. | y |
|---------------------|---|

| | |
|------------------------------|----|
| <u>Excorallana tricornis</u> | SS |
|------------------------------|----|

Ligiidae

Ligia sp. y

Limnoriidae

Limnoria sp. y

Sphaeromatidae

Paracerceis caudata SS

Stenetriidae

Stenetrium serratum SS

CRUSTACEA: AMPHIPODA (by family)

Gammaridae

Elasmopus sp. y

CRUSTACEA: DECAPODA: REPTANTIA (by family)

Porcellanidae

Clastocheilus nodosus B, JH, e
Megalobrachium poeyi B, JH, e, +
Megalobrachium roseum B, JH, e, +
Megalobrachium soriatum B, JH, e, +
Neopisosoma angustifrons e, s, +
Pachycheles chacei B, JH, e, +
Pachycheles cristobalensis B, JH, e, +
Pachycheles serratus B, JH, JS, LGA, e, +
Pachycheles susanae B, e, u, +
Petrolisthes armatus B, JH, e, +
Petrolisthes galathinus B, JH, JS, e, +
Petrolisthes jugosus B, JH, e, +

Grapsidae

Aratus pisonii EK, y

| | |
|-----------------------------------|---|
| <u>Goniopsis cruentata</u> | RHG, y |
| <u>Grapsus grapsus</u> | RHG, + |
| <u>Pachygrapsus gracilis</u> | y |
| <u>Pachygrapsus marmoratus</u> | B |
| <u>Pachygrapsus transversus</u> | B, JSG, + |
| <u>Percnon gibbesi</u> | RHG |
| <u>Plagusia depressa</u> | RHG, JPS, + |
| <u>Sesarma cinereum</u> | y |
| <u>Sesarma curacaoense</u> | y |
| | |
| Portunidae | |
| <u>Callinectes</u> sp. | JC |
| | |
| Majidae | |
| <u>Acanthonyx petiverii</u> | JSG, + <u>petriverii</u> [sic] in B |
| <u>Epialtus</u> sp. | B |
| = <u>E. ?longirostris</u> | JSG |
| <u>Macrocoeloma subparallelum</u> | B, JSG |
| <u>Microphrys bicornutus</u> | B, F, JSG, E74, E75, E76, x, y, + |
| <u>Mithrax acuticornis</u> | B, JSG |
| <u>Mithrax coryphe</u> | B, JSG, + |
| <u>Mithrax commensalis</u> | JRS, JS |
| <u>Mithrax sculptus?</u> | EK |
| <u>Mithrax spinosimus</u> | B |
| <u>Mithrax</u> sp. | B, JSG |
| <u>Mithrax verrucosus</u> | JRS, JS |
| <u>Pitho aculeata</u> | B, JSG, + |
| <u>Stenorhynchus seticornis</u> | JC |
| <u>Thoe puella</u> | B, JSG |
| | |
| Xanthidae | |
| <u>Carpilius corallinus</u> | JC |
| <u>Cataleptodius floridanus</u> | RHG, <u>Leptodium</u> in B, JSG, LGA, + |
| <u>Domecia acanthophora</u> | B, JSG |
| <u>Eriphia gonagra</u> | B, JSG |

| | |
|-------------------------------|-------------------------------------|
| <u>Leptodius floridanus</u> | x |
| <u>Micropanope</u> sp. | B, JSG |
| <u>Panopeus bermudensis</u> | B, JSG, LGA |
| <u>Panopeus harttii</u> | RHG, + |
| <u>Panopeus herbstii</u> | JSG, x, y, + |
| <u>Panopeus</u> sp. | B, JSG |
| <u>Panopeus</u> sp. aff. | |
| <u>occidentalis</u> | x |
| <u>Paraliomera dispar</u> | B, JSG, LGA, + |
| <u>Pilumnus dasypodus</u> | B, JSG, + |
| <u>Pilumnus holosericus</u> | B, JSG, LGA, + |
| <u>Pilumnus lacteus</u> | B |
| <u>Pilumnus reticulatus</u> | B, JSG, + |
| <u>Pilumnus sayi?</u> | RHG, + |
| <u>Pilumnus</u> sp. | B, JSG |
| <u>Platyactaea setigera</u> | RHG, <u>Actaea</u> in B, JSG, + |
| <u>Platypodia spectabilis</u> | B, JSG, LGA, RHG, + |
| <u>Xantho denticulatus</u> | RHG, <u>Xanthodius</u> in B, JSG, + |
| | |
| Calappidae | |
| <u>Calappa</u> sp. | JC |
| | |
| Gecarcinidae | |
| <u>Cardisoma guanhumu</u> | RHG |
| | |
| Dromiidae | |
| <u>Dromidia</u> sp. | JC |
| | |
| Ocypodidae | |
| <u>Ocypode quadrata</u> | y |
| <u>Uca burgersi</u> | RHG, + |
| <u>Uca</u> sp. | y, jj |
| | |
| Palinuridae | |
| <u>Panulirus argus</u> | JC |
| <u>Panulirus guttatus</u> | JC |

Scyllaridae

Scyllarus sp. JC

Parthenopidae

Heterocrypta macrobranchia? B, RHG

Leucosiidae

Uhlias limbatus B, JSG

Paguridae

Paguristes cadenati JC

Paguristes grayi PAA, m, +

Paguristes cf tortugae PAA, m, +

Pagurus bonairensis PAA, m, +

Pagurus brevidactylus PAA, m, +

Coenobitidae

Coenobita clypeatus PAA, m, +

Diogeniidae

Calcinus tibicen PAA, JH, m, +

Clibanarius antillensis PAA, m, +

Clibanarius sp. y

Clibanarius tricolor PAA, m, +

Dardanus venosus PAA, m, +

Dardanus sp. o

Petrochirus diogenes RHG, P. bahamensis in PAA, m, +

Petrochirus sp. o

Pinnotheridae

Pinnotheres maculatus JSG

Pinnixa ?faxoni JSG

Hapalocarcinidae

Pseudocryptochirus RHG

CRUSTACEA: DECAPODA: NATANTIA (by family)

Alpheidae

| | |
|---------------------------------|---------|
| <u>Alpheus armillatus</u> | B, F, x |
| <u>Alpheus armatus</u> | JC |
| <u>Alpheus bahamensis</u> | B |
| <u>Alpheus cristulifrons</u> | B |
| <u>Alpheus floridanus</u> | x |
| <u>Alpheus formosus</u> | B |
| <u>Alpheus normanni</u> | B |
| <u>Alpheus nuttingi</u> | B |
| <u>Alpheus paracrinitus</u> | B |
| <u>Alpheus peasei</u> | B |
| <u>Alpheus ridleyi</u> | B |
| <u>Alpheus schmitti</u> | B |
| <u>Alpheus simus</u> | B |
| <u>Alpheus</u> sp. | B, F, y |
| <u>Alpheus viridari</u> | F, x |
| <u>Automate rectifrons</u> | B |
| <u>Metalpheus rostratipes</u> | B |
| <u>Salmoneus ortmanni</u> | B |
| <u>Synalpheus anasimus</u> | B |
| <u>Synalpheus brevidactylus</u> | RHG |
| <u>Synalpheus fritzmulleri</u> | B |
| <u>Synalpheus herricki</u> | B |
| <u>Synalpheus minus</u> | |
| <u>Synalpheus pandionis</u> | B |
| <u>Synalpheus</u> sp. | B |
| <u>Synalpheus tenuispina</u> | B |
| <u>Synalpheus townsendi</u> | B |
| <u>Thunor rathbunae</u> | B |

Callianassidae

| | |
|----------------------------------|---|
| <u>Callichirus acanthochinus</u> | x |
|----------------------------------|---|

Gnathophyllidae

Gnathophyllum americanum B

Hippolytidae

Hippolyte curacaoensis BLysmata intermedia BThor manningi B, x

Palaemonidae

Periclimenes americanus BStenopus hispidus yStenopus scutellatus JC

Penaeidae

Penaeus duorarum xPenaeus sp. mmSicyonia parri BTrachypenaeus similis B

Processidae

Ambidexter symmetricus B, B, x, zProcessa bermudensis BProcessa fimbriata BProcessa sp. aff. hemphilli x

CRUSTACEA: STOMATOPODA

Gonodactylus austrinus RM, B, y, +Gonodactylus bredini RM, B, y, +Gonodactylus oerstedii RM, B, y, +Gonodactylus spinulosus HD and RS, +Meiosquilla lebouri RLC and RSPseudosquilla ciliata RM, x, y, +Nannosquilla sp. x

CRUSTACEA: MYSIDACEA

| | |
|------------------------------------|----|
| <u>Siriella chierchiae</u> | dd |
| <u>Bowmaniella bracescui</u> | dd |
| <u>Bowmaniella sewelli</u> | dd |
| <u>Amathimysis cherados</u> | dd |
| <u>Amathimysis gibba</u> | dd |
| <u>Brasilomysis castroi</u> | dd |
| <u>Cubanomysis jimenezi</u> | dd |
| <u>Mysidopsis brattstroemi</u> | dd |
| <u>Mysidopsis velifera</u> | dd |
| <u>Mysidopsis arenosa</u> sp. nov. | dd |
| <u>Mysidium columbiae</u> | dd |
| <u>Mysidium gracile</u> | dd |
| <u>Mysidium integrum</u> | dd |

CRUSTACEA: CIRRIPIEDIA

| | |
|---------------------------------|----|
| <u>Balanus</u> sp. | jj |
| <u>Balanus trigonus</u> | gg |
| <u>Balanus venustus</u> | hh |
| <u>Chthamalus angustitergum</u> | ll |
| <u>Chthamalus bisinuatus</u> | ll |
| <u>Chthamalus rhizophorae</u> | ll |
| <u>Chthamalus</u> sp. | y |
| <u>Newmanella radiata</u> | gg |
| <u>Tetraclita stalactifera</u> | ll |

PYCNOGONIDA

| | |
|-----------------------------------|---|
| <u>Achelia sawayai</u> | B, kk, + |
| <u>Anoplodactylus allotrius</u> | kk |
| <u>Anoplodactylus batangensis</u> | <u>batangense</u> in B, kk |
| <u>Anoplodactylus evelinae</u> | B, kk, + (specimen in collection from Pacific) |

| | |
|--|---|
| <u>Anoplodactylus</u> <u>galetensis</u> | kk |
| <u>Anoplodactylus</u> <u>insigniformis</u> | kk |
| <u>Anoplodactylus</u> <u>jonesi</u> | kk |
| <u>Anoplodactylus</u> <u>monotrema</u> | kk |
| <u>Anoplodactylus</u> <u>multiclavus</u> | kk |
| <u>Anoplodactylus</u> <u>pectinus</u> | kk |
| <u>Anoplodactylus</u> spp. | B, kk |
| <u>Anoplodactylus</u> <u>stri</u> | kk |
| <u>Anoplodactylus</u> <u>trispinosus</u> | kk |
| <u>Anoplodactylus</u> <u>viridintestinalis</u> | kk |
| <u>Ammothella</u> <u>appendiculata</u> | B, kk, + |
| <u>Ammothella</u> <u>exornata</u> | kk, + |
| <u>Ammothella</u> <u>marcusi</u> | kk |
| <u>Ammothella</u> <u>rugulosa</u> | kk |
| <u>Ammothella</u> spp. | B |
| <u>Ammothella</u> <u>spinifera</u> | kk |
| <u>Ascorhynchus</u> <u>castellioides</u> | B, kk, + |
| <u>Ascorhynchus</u> <u>latipes</u> | B, kk, + |
| <u>Callipallene</u> <u>emaciata</u> | kk |
| <u>Callipallene</u> sp. | B |
| <u>Endeis</u> <u>spinosa</u> | kk |
| <u>Eurycyde</u> <u>gorda</u> | kk |
| <u>Eurycyde</u> <u>raphiaster</u> | B, kk, + |
| <u>Eurycyde</u> sp. | B |
| <u>Nymphon</u> <u>floridanum</u> | CAC, kk, + |
| <u>Nymphopsis</u> <u>duodorsospinosa</u> | B, kk, + (specimen in collection from Pacific) |
| <u>Pallenopsis</u> <u>schmitti</u> | kk |
| <u>Pigrogromitus</u> <u>timsanus</u> | B, kk, + |
| <u>Rhynchothorax</u> <u>architectus</u> | kk |
| <u>Rhynchothorax</u> sp. | B |
| <u>Tanystylum</u> <u>birkelandi</u> | kk |
| <u>Tanystylum</u> <u>geminum</u> | kk |
| <u>Tanystylum</u> <u>isthmiacum</u> | |
| <u>difficile</u> | kk |
| <u>Tanystylum</u> sp. | B, kk |

MOLLUSCA

SCAPHOPODA

| | |
|-----------------------------|--------|
| <u>Dentalium gouldi</u> | KBM, + |
| <u>Dentalium antillarum</u> | x |

POLYPLACOPHORA

| | |
|------------------------------------|---|
| <u>Acanthochitona hemphilli</u> | B |
| <u>Acanthochitona interfissa</u> | B |
| <u>Acanthochitona pygmaea</u> | B |
| <u>Acanthochitona spiculosus</u> | B |
| <u>Acanthochitona unident. sp.</u> | y |
| <u>Acanthopleura granulata</u> | B |
| <u>Calloplax janeirensis</u> | B |
| <u>Chiton viridis</u> | B |
| <u>Choneplax lata</u> | B |
| <u>Ischnochiton papillosus</u> | B |
| <u>Ischnochiton pectinatus</u> | B |
| <u>Ischnochiton purpurascens</u> | B |
| <u>Lepidochitona liozonis</u> | B |

GASTROPODA: PROSOBRANCHIA

| | |
|-------------------------------|-----------|
| <u>Acmaea antillarum</u> | B |
| <u>Acmaea pustulata</u> | B, f |
| <u>Alvania aberrans</u> | CB, + |
| <u>Anachis catenata</u> | CB, B, + |
| <u>Anachis crassilabris</u> | F |
| <u>Anachis obesa</u> | JR, CB, + |
| <u>Antillophos sp. 1</u> | CB, + |
| <u>Architectonica nobilis</u> | KBM, + |
| <u>Arene cruentata</u> | CB, B, + |
| <u>Arene tricarinata</u> | B |

| | |
|---------------------------------|--|
| <u>Astraea caelata</u> | DLW, B, + |
| <u>Astraea phoebia</u> | KBM, IT, B, + |
| <u>Bailya intricata</u> | B, F |
| <u>Bailya parva</u> | KBM, + |
| <u>Balcis intermedia</u> | B |
| <u>Balcis sp. 1</u> | B |
| <u>Batillaria minima</u> | KBM, D, F, f, y, + |
| <u>Bittium varium</u> | B |
| <u>Bursa cubaniana</u> | B |
| <u>Bursa granularis</u> | KBM, + |
| <u>Caecum sp.</u> | y |
| <u>Calliostoma jujubinum</u> | KBM, + |
| <u>Cantharus auritulus</u> | F |
| <u>Cantharus tinctus</u> | B |
| <u>Cerithiopsis emersoni</u> | F |
| <u>Cerithium eburneum</u> | KBM, B, f, x, + |
| <u>Cerithium litteratum</u> | KBM, B, JR, f, x, y, + [cf. <u>C litteratum</u> (Young) by CB in +] |
| <u>Cerithium variabile</u> | B, D |
| <u>Charonia variegata</u> | B, o, + |
| <u>Cheilea equestris</u> | B, <u>Cheila</u> [sic] in B |
| <u>Cittarium pica</u> | B |
| <u>Columbella mercatoria</u> | KBM, + |
| <u>Conus daucus</u> | o |
| <u>Conus mus</u> | B |
| <u>Coralliophila abbreviata</u> | KBM, + |
| <u>Coralliophila aberrans</u> | CB, + |
| <u>Coralliophila caribaea</u> | B |
| <u>Crassispira fuscescens</u> | KBM, + |
| <u>Crassispira leucocyma</u> | CB, + |
| <u>Crassispira nigrescens</u> | JR |
| <u>Crassispira tampaensis</u> | x |
| <u>Crepidula plana</u> | B |
| <u>Crucibulum auricula</u> | KBM, f, + |
| <u>Cyclostremiscus beauvi</u> | B |

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|-----------------------------------|---------------------------------------|
| <u>Cymatium muricinum</u> | KBM, + |
| <u>Cymatium nicobaricum</u> | KBM, B, + |
| <u>Cymatium pileare</u> | KBM, B, o, + |
| <u>Cyphoma gibbosum</u> | KBM, b, + |
| <u>Cypraea cinerea</u> | KBM, + |
| <u>Cypraea zebra</u> | KBM, B, o, + |
| <u>Cypraecassis testiculus</u> | KBM, B, E76, k, o, + |
| <u>Daphnella lymneiformis</u> | CB, B, + |
| <u>Diodora cayenensis</u> | CB, B, + |
| <u>Diodora dysoni</u> | CB, B, JR, + |
| <u>Diodora cf. minuta</u> | KBM, B, JR, + |
| <u>Diodora variegata</u> | B |
| <u>Drillia albinodata</u> | RS |
| <u>Drillia sp. 1</u> | CB, JR, + |
| <u>Drupa nodulosa</u> | B, D, <u>Morula nodulosa</u> KBM, + |
| <u>Emarginula phrixodes</u> | B |
| <u>Emarginula pumila</u> | B |
| <u>Engina turbinella</u> | CB, + |
| <u>Epitonium candeanum</u> | B |
| <u>Epitonium lamellosum</u> | B |
| <u>Epitonium occidentale</u> | B |
| <u>Epitonium sp. 1</u> | B |
| <u>Fasciolaria tulipa</u> | KBM, B, o, x, + |
| <u>Fissurella angusta</u> | B |
| <u>Fissurella barbadensis</u> | B |
| <u>Heliacus bisulcatus</u> | B |
| <u>Heliacus cylindricus</u> | B |
| <u>Heliacus infundibuliformis</u> | B, <u>infunibuliformis</u> [sic] in F |
| <u>Hemitoma octoradiata</u> | JR, DLW, + |
| <u>Hemitoma sp.</u> | B |
| <u>Hipponix antiquatus</u> | CB, B, f, + |
| <u>Hipponix subrufus</u> | B |
| <u>Hyalina albolineata</u> | B |
| <u>Hyalina avena</u> | KBM, B, F, x, + |
| <u>Hyalina tenuilabra</u> | B |

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|-------------------------------------|--|
| <u>Janthina janthina</u> | KBM, + |
| <u>Latirus carniferus</u> | RB, KBM, JR, +, <u>carnifera</u> [sic] in B |
| <u>Latirus distinctus</u> | y |
| <u>Latirus infundibulum</u> | o |
| <u>Leucozonia nassa</u> | RB, + |
| <u>Leucozonia ocellata</u> | KBM, B, + |
| <u>Littorina angulifera</u> | KBM, y, + |
| <u>Littorina angustior</u> | JC, (KBM, + as <u>L. lineata</u>) |
| <u>Littorina lineolata</u> | B, D |
| <u>Littorina meleagris</u> | D |
| <u>Littorina nebulosa</u> | KBM, y, + |
| <u>Littorina tessellata</u> | KBM, + |
| <u>Littorina ziczac</u> | KBM, D, + |
| <u>Lucapina suffusa</u> | KBM, + |
| <u>Mangelia fusca</u> | B, + |
| <u>Marginella gracilis</u> | x |
| <u>Melongena melongena</u> | KBM, x, + |
| Melongenidae sp. | o |
| <u>Mitra nodulosa</u> | KBM, + |
| <u>Mitra</u> sp. | B |
| <u>Modulus modulus</u> | KBM, B, f, + |
| <u>Morula nodulosa</u> | see <u>Drupa nodulosa</u> |
| <u>Morum oniscus</u> | KBM, o, + |
| <u>Murex dilectus</u> | KBM, + |
| <u>Murex pomum</u> | KBM, KBM, o, + |
| <u>Murex recurvirostris rubidus</u> | KBM, G, GLH, + |
| cf. <u>Murex woodringi</u> | KBM, + |
| <u>Nassarius vibex</u> | KBM, F, x, + |
| <u>Neosimnia acicularis</u> | CB, + |
| <u>Nerita fulgurans</u> | KBM, D, + |
| <u>Nerita peloronta</u> | KBM, D, + |
| <u>Nerita tessellata</u> | KBM, D, y, + |
| <u>Nerita versicolor</u> | KBM, D, + |
| <u>Neritina virginea</u> | DLW, KBM, JR, f, x, y, +, <u>virgines</u> [sic] in F, <u>virginica</u> [sic] in f |

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|----------------------------------|-------------------------------------|
| <u>Nitidella nitida</u> | B |
| <u>Nitidella</u> sp. 2 | B |
| <u>Nodilittorina tuberculata</u> | KBM, D, + |
| <u>Oliva reticularis</u> | KBM, + |
| <u>Olivella petiolita</u> | DLW, + |
| <u>Opalia crenata</u> | CB, B, + |
| <u>Opalia pumilio</u> | B, <u>pumilo</u> [sic] in B |
| <u>Petalococonchus</u> sp. | |
| cf. <u>erectus</u> | y |
| <u>Pisania pusio</u> | KBM, + |
| <u>Planaxis lineatus</u> | CB, D, F, + |
| <u>Planaxis nucleus</u> | D, F |
| <u>Polinices hepaticus</u> | o, x |
| <u>Polinices lacteus</u> | KBM, B, + <u>lactens</u> [sic] in f |
| <u>Prunum guttatum</u> | KBM, JR, + |
| <u>Psarostola monilifera</u> | B |
| <u>Purpura patula</u> | KBM, B, o, + |
| <u>Risomurex muricoides</u> | KBM, B, JR, + |
| <u>Risomurex roseus</u> | JR, + |
| <u>Risomurex</u> sp. | JR, CB, + |
| <u>Rissoina bryerea</u> | B |
| <u>Rissoina decussata</u> | KBM, B, F, f, + |
| <u>Rissoina multicostata</u> | KBM, + |
| <u>Smaragdia viridis</u> | +, <u>S. viridis</u> in KBM, B |
| <u>Strombus gigas</u> | x |
| <u>Strombus pugilis</u> | JRY, f, + |
| <u>Strombus raninus</u> | B, f, x, + |
| <u>Tectarius muricatus</u> | KBM, D, + |
| <u>Tegula fasciata</u> | KBM, B, JR, f, + |
| <u>Thais deltoidea</u> | B, JR, o, + |
| <u>Thais haemastoma</u> , var A | CB, B, D, JR, + |
| <u>Thais haemastoma</u> | o |
| <u>Thais rustica</u> | o |
| <u>Tonna maculosa</u> | KBM, + |
| <u>Tricolia adamsi</u> | DLW, KBM, B, + |

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|------------------------------|------------------|
| <u>Tricolia bella</u> | KBM, CB, B, F, + |
| <u>Tricolia thalassicola</u> | KBM, + |
| <u>Trivia quadripunctata</u> | DLW, KBM, JR, + |
| <u>Turritella exoleta</u> | KBM, + |
| <u>Vasum muricatum</u> | DLW, B, + |
| Vermetidae | y |
| <u>Voluta musica</u> | DLM, + |

GASTROPODA: OPISTHOBRANCHIA (by order)

Anaspidea

| | |
|---------------------------------|------------|
| <u>Aplysia dactylomela</u> | EK, KBM |
| <u>Aplysia parvula</u> | KBM |
| <u>Aplysia</u> sp. | KBM |
| <u>Bursatella leachii pleii</u> | EK, y, KBM |
| <u>Dolabrifera dolabrifera</u> | KBM |
| <u>Petalifera ramosa</u> | KBM |
| <u>Phyllaplysia engeli</u> | KBM |
| <u>Stylocheilus longicauda</u> | KBM |

Cephalaspidea

| | |
|----------------------------|-------------|
| <u>Aglaja evelinae</u> | KBM |
| <u>Alys riiseana</u> | x |
| <u>Bulla occidentalis</u> | KBM, x |
| <u>Bulla striata</u> | KBM, f, + |
| <u>Chelidonura</u> spp. | KBM |
| <u>Haminoea antillarum</u> | x |
| <u>Haminoea elegans</u> | KBM |
| <u>Ildica</u> sp. | KBM |
| <u>Micromelo undata</u> | DS, SW, KBM |

Sacoglossa

| | |
|--------------------------------|-----|
| <u>Bosellia marcusii</u> | KBM |
| <u>Bosellia memetica</u> | KBM |
| <u>Caliphylla mediterranea</u> | KBM |

| | |
|------------------------------|--------|
| <u>Cyerce antillarum</u> | KBM |
| <u>Elysia ornata</u> | KBM |
| <u>Elysia papillosa</u> | KBM |
| <u>Elysia picta</u> | KBM |
| <u>Elysia tuca</u> | KBM |
| <u>Lobiger souverbii</u> | KBM |
| <u>Oxynoe antillarum</u> | KBM |
| <u>Placida dendritica</u> | KBM |
| <u>Phyllobranchillus</u> sp. | KBM |
| <u>Stiliger</u> sp. | KBM |
| <u>Tridachia crispata</u> | KBM, + |

Notaspidea

| | |
|---------------------------------|--------|
| <u>Berthella tupala</u> | c |
| <u>Berthellina quadridens</u> | KBM |
| <u>Pleurobranchus areolatus</u> | v, KBM |

Nudibranchia

| | |
|--------------------------------|--------|
| <u>Aegires sublaevis</u> | h, KBM |
| <u>Aphelodoris antillensis</u> | h |
| <u>Berghia coerulescens</u> | KBM |
| <u>Berghia creutzbergi</u> | KBM |
| <u>Bornella calcarata</u> | KBM |
| <u>Cadlina rumia</u> | j |
| <u>Catriona tina</u> | KBM |
| <u>Chromodoris clenchi</u> | h, KBM |
| <u>Chromodoris kempfi</u> | h, KBM |
| <u>Chromodoris</u> sp. | y |
| <u>Coryphella dushia</u> | KBM |
| <u>Dendrodoris krebsii</u> | KBM |
| <u>Discodoris evelinae</u> | h |
| <u>Discodoris mortenseni</u> | j |
| <u>Dondice occidentalis</u> | KBM |

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|---------------------------------|--------|
| <u>Doriopsilla nigrolineata</u> | h |
| <u>Doto divae</u> | KBM |
| <u>Felimare bayeri</u> | h, KBM |
| <u>Glaucus atlanticus</u> | KBM |
| <u>Godiva rubolineata</u> | KBM |
| <u>Hexabranchnus sanguineus</u> | h, KBM |
| <u>Hypselodoris ruthae</u> | h, KBM |
| <u>Okenia evelinae</u> | h, KBM |
| <u>Phidiana lynceus</u> | KBM |
| <u>Phyllidiopsis molaensis</u> | h |
| <u>Platydorid angustipes</u> | h |
| <u>Scyllaea pelagica</u> | KBM |
| <u>Spurilla neopolitana</u> | KBM |
| <u>Tambja oliva</u> | h, KBM |
| <u>Tritonia bayeri</u> | KBM |
| <u>Tritonia wellsi</u> | KBM |

GASTROPODA: PULMONATA

| | |
|-------------------------|--------|
| <u>Melampus coffeus</u> | KBM, + |
|-------------------------|--------|

BIVALVIA

| | |
|------------------------------|-----------------------------------|
| <u>Americardia media</u> | x |
| <u>Anodontia pectinata</u> | x |
| <u>Anomia simplex</u> | DLW, JR, + |
| <u>Arca imbricata</u> | IT, KBM, B, x, + |
| <u>Arcopsis adamsi</u> | IT, B, F, f, x, + |
| <u>Asaphis deflorata</u> | KBM, + |
| <u>Barbatia domingensis</u> | CB, B, + |
| <u>Barbatia tenera</u> | BM, B, + |
| <u>Brachidontes modiolus</u> | JR |
| <u>Brachidontes citrinus</u> | B |
| <u>Brachidontes exustus</u> | F, <u>exhustus</u> [sic] in ii, y |
| <u>Brachidontes recurvus</u> | B |

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|---------------------------------------|--|
| <u>Brachidontes</u> sp. | jj |
| <u>Chama macerophylla</u> | KBM, B, + |
| <u>Chione cancellata</u> | x |
| <u>Chlamys imbricata</u> | + |
| <u>Codakia costata</u> | B, f |
| <u>Codakia orbicularis</u> | B, F, x |
| <u>Codakia orbiculata</u> | B, F, f, x, (as <u>Ctena</u> in ii), + |
| <u>Codakia pectinella</u> | x |
| <u>Coralliophaga coralliophaga</u> | B, f, + |
| <u>Corbula caribaea</u> | x |
| <u>Corbula contracta</u> | B, x |
| <u>Corbula cubaniana</u> | x |
| <u>Crassinella martinicensis</u> | JR, + |
| <u>Crassinella lunulata</u> | ii |
| <u>Crassostrea rhizophorae</u> | y |
| <u>Crassostrea</u> sp. | jj |
| <u>Ctena orbiculata</u> | ii |
| <u>Cumingia antillarum</u> | JR, B, x, + |
| <u>Cyathodonta semirugosa</u> | CB, + |
| <u>Diplodonta punctata</u> | B, F, x |
| <u>Diplodonta semiaspera</u> | JR, + |
| <u>Donax denticulatus</u> | CB, + |
| <u>Echinochama arcinella</u> | CB, + |
| <u>Erycina emmonsi</u> | B |
| <u>Erycina periscopiana</u> | B |
| <u>Gastrochaena hians</u> | B, f |
| <u>Gouldia cerina</u> | x |
| <u>Gregariella coralliophaga</u> | B |
| <u>Isognomon alatus</u> | CB, y, + |
| <u>Isognomon bicolor</u> | CB, B, F, + |
| <u>Isognomon radiatus</u> | CB, B, D, + |
| <u>Laevicardium laevigatum</u> | DLW, + |
| <u>Lima pellucida</u> | B |
| <u>Lima scabra</u> | DLW, + |
| <u>Lima scabra</u> form <u>tenera</u> | DLW, + |

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| <u>Lioberus castaneus</u> | B |
| <u>Lithophaga antillarum</u> | KBM, f, + |
| <u>Lithophaga bisulcata</u> | B, F, f |
| <u>Lithophaga nigra</u> | B, F, f |
| <u>Lucina leucocyma</u> | x |
| <u>Lucina pensylvanica</u> | B |
| <u>Macoma constricta</u> | x |
| <u>Macoma tenta</u> | B |
| <u>Modiolus americanus</u> | KBM, B, + |
| <u>Musculus lateralis</u> | JR, f, + |
| <u>Ostrea equestris</u> | DLW, JR, + |
| <u>Phacoides muricatus</u> | x |
| <u>Phacoides pectinatus</u> | KBM, CB, B, F, ii, + |
| <u>Pinctada radiata</u> | KBM, B, F, + |
| <u>Pinna carnea</u> | JR, + |
| <u>Pseudochama arcinella</u> | B |
| <u>Pteria colymbus</u> | DLW, KBM, JR, + |
| <u>Sphenia antillensis</u> | B, + |
| <u>Spondylus americanus</u> | SW |
| <u>Solemya sp. aff. occidentalis</u> | x |
| <u>Strigilla sp.</u> | B |
| <u>Tellina alternata</u> | ii |
| <u>Tellina exerythra</u> | x |
| <u>Tellina fausta</u> | DLW, JR, f, x, + |
| <u>Tellina listeri</u> | x |
| <u>Tellina nitens</u> | x |
| <u>Tellina promera</u> | ii |
| <u>Tellina versicolor</u> | x |
| <u>Tellina vespusiana</u> | x |
| <u>Teredo sp.</u> | y |
| <u>Trachycardium muricatum</u> | DLW, + |
| <u>Venericardia sp. aff. tridentata</u> | x |

CEPHALOPODA

| | |
|--------------------|--------|
| <u>Octopus sp.</u> | E75, K |
|--------------------|--------|

ECTOPROCTA (BRYOZOA)

| | |
|-------------------------------------|-----------|
| <u>Arborella dichotoma</u> | JD, + |
| <u>Bugula</u> sp. | y |
| <u>Caberea carabaoda</u> | JD, + |
| <u>Caulibugula dendrograpta</u> | JD, + |
| <u>Celleporaria albirostris</u> | JD, + |
| <u>Chlidonia pyriformis</u> | JD, + |
| <u>Gemillipora</u> sp. | y |
| <u>Gemelliporida multilamellosa</u> | JD, aa, + |
| <u>Lichenopora buskiana</u> | JD, + |
| <u>Retoporelliria evelinae</u> | JD |
| <u>Steganoporella magnilabris</u> | JD, aa, + |
| <u>Stylopoma informata</u> | JD, + |
| <u>Trematooecia aviculifera</u> | JD, aa, + |
| <u>Trematooecia turrita</u> | JD, aa, + |
| <u>Tubucellaria cereoides</u> | JD, + |

BRACHIOPODA

| | |
|----------------------------|---|
| <u>Discinisca strigata</u> | B, + (specimen in collection from Pacific) |
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ECHINODERMATA

(by class)

ECHINOIDEA

| | |
|-----------------------------|---------------------------------|
| <u>Arbacia punctulata</u> | DLM, + |
| <u>Brissopsis elongata</u> | DLM, + |
| <u>Brissus unicolor</u> | DLM, B, E76, k, + |
| <u>Diadema antillarum</u> | B, E74, E75, E76, k, o. v, x, : |
| <u>Echinometra lucunter</u> | B, E74, E75, E76, k, o, x |

| | |
|--------------------------------|--|
| <u>Echinometra viridis</u> | B, E74, E75, E76, k, o |
| <u>Echinoneus cyclostomus</u> | B, E76, k, + |
| <u>Eucidaris tribuloides</u> | DLM, B, E76, k, o, y, + |
| <u>Halodeima floridana</u> | x |
| <u>Lytechinus variegatus</u> | DLM, B, E74, E75, E76, k, o, p, x, y, + |
| <u>Lytechinus williamsi</u> | DLM, + |
| <u>Meoma ventricosa</u> | DLM, + |
| <u>Paraster floridiensis</u> | DLM, E76, k, + |
| <u>Plagiobrissus grandis</u> | DLM, + |
| <u>Tripneustes ventricosus</u> | DLM, E76, k, v, x, +, <u>T. esculentus</u> in B |

ASTEROIDEA

| | |
|-------------------------------|-----------|
| <u>Ophidiaster guildingii</u> | B |
| <u>Oreaster reticulatus</u> | DLM, B, + |

OPHIUROIDEA

| | |
|------------------------------------|--------------|
| <u>Amphiodia repens</u> | B |
| <u>Amphiodia</u> sp. L | B |
| <u>Amphipholis</u> sp. A | B |
| <u>Amphipholis</u> sp. | B |
| <u>Amphipholis gracillima</u> | x |
| <u>Amphiura (Monamphiura)</u> sp. | B |
| <u>Amphiura (Nullamphiura)</u> sp. | B |
| <u>Axiognathus squamata</u> | B |
| <u>Ophiactis savignyi</u> | DLM, B, x, + |
| <u>Ophiocantha ophiactoides</u> | B |
| <u>Ophiocoma echinata</u> | DLM, B, + |
| <u>Ophiocoma pumila</u> | DLM, B, + |
| <u>Ophiocoma</u> sp. | y |
| <u>Ophiocoma wendti</u> | DLM, B, + |
| <u>Ophioderma appressum</u> | DLM, B, y, + |

| | |
|--------------------------------------|---|
| <u>Ophioderma brevicaudum</u> | DLM, B, + |
| <u>Ophioderma brevispinum</u> | DLM, B, + |
| <u>Ophioderma cinereum</u> | DLM, B, + |
| <u>Ophioderma rubicundum</u> | DLM, + |
| <u>Ophiolepis paucispina</u> | DLM, B, F, + |
| <u>Ophiomyxa flaccida</u> | DLM, + |
| <u>Ophionereis reticulata</u> | DLM, B, + |
| <u>Ophiothrix angulata</u> | DLM, B, + |
| <u>Ophiothrix</u> cf. <u>lineata</u> | DLM, + |
| <u>Ophiothrix suensonii</u> | DLM, + |
| <u>Ophiozona impressa</u> | DLM, + |
| <u>Ophiozonoida</u> (?) sp. | B (this may be new genus; EK, pers. comm.) |

CRINOIDEA

| | |
|--|--------|
| <u>Comactinia echinoptera</u> | DLM |
| <u>Comactinia echinoptera</u> : | |
| cf. var. <u>valida</u> | cc |
| <u>Comactinia echinoptera</u> cf. var. | |
| <u>meridionalis</u> | cc |
| <u>Comactinia meridionalis</u> | DLM, + |
| <u>Nemaster rubiginosa</u> | cc |
| <u>Nemaster discoidea</u> | cc |

HOLOTHUROIDEA

| | |
|---------------------|----|
| <u>Euapta lappa</u> | JC |
| Holothuriid sp. | JC |

CHORDATA

ASCIDICEA

| | |
|---------------------------|----|
| <u>Ascidia interrupta</u> | DS |
|---------------------------|----|

| | |
|--|---------------|
| <u>Clavelina</u> sp. | y |
| <u>Clavelina picta</u> | RHM |
| <u>Cystodytes dellechiaiei</u> | RHM |
| <u>Didemnum</u> spp. | DS |
| <u>Didemnum</u> sp. B | RHM |
| <u>Didemnum</u> sp. C | RHM |
| <u>Didemnum</u> sp. D | RHM |
| ? <u>Didemnum</u> sp. E | RHM |
| <u>Distaplia</u> (? <u>bermudensis</u>) | RHM |
| <u>Ecteinascidia conklini</u> var. | |
| <u>minuta</u> | DS |
| <u>Ecteinascidia turbinata</u> | RHM |
| <u>Eudistoma</u> sp. A | RHM |
| <u>Eudistoma</u> sp. B | RHM |
| <u>Pyrua vittata</u> | DS |
| <u>Polysyncraton</u> (? <u>amethysteum</u>) | RHM |
| <u>Rhopalaea abdominalis</u> | RHM |
| <u>Trididemnum cyanophorum</u> | |
| (= <u>T. solidum</u>) | RHM, RO, v, w |
| <u>Trididemnum</u> sp. A | RHM |

NOTE: RHM identifications are provisional.

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