

STUDIES ON THE FAUNA OF CURAÇAO AND OTHER
CARIBBEAN ISLANDS: No. 203

ASCIDIANS FROM CARIBBEAN SHALLOW WATER
LOCALITIES

by

IVAN GOODBODY

(Zoology Dept., University of the West Indies, Mona, Kingston 7, Jamaica)

Between 1930 and 1973 PIETER WAGENAAR HUMMELINCK of the Zoölogisch Laboratorium of the State University of Utrecht made nine collecting trips to the Caribbean. While most collecting was undertaken in the territories of the Netherlands Antilles, visits were also made to several other West Indian islands and to Southern Florida. Dr. HUMMELINCK was particularly interested in the biology of coastal lagoons and salt ponds so that his collections are representative of these environments but do not contain much material from other important marine environments such as coral reefs and open water sea grass beds. At the invitation of Dr. HUMMELINCK I have examined all of the Ascidiacea (Tunicata) in these collections containing several thousand animals. A high proportion of the material came from two lagoons in Curaçao and Bonaire and I have reported separately on this material (GOODBODY, 1984) as it provides an opportunity to compare the ascidian fauna of two contrasting environments. The remaining material comes from fifty different localities in nineteen territories in the West Indies and Florida.

The ascidian fauna of the Caribbean is well known as a result of the work of VAN NAME (1921, 1924, 1930, 1945), MILLAR (1962), VAN DER SLOOT (1969), MILLAR & GOODBODY (1974) and a recent series of papers on the ascidians of Guadeloupe by CLAUDE MONNIOT (1983) and FRANÇOISE MONNIOT (1983). The material from HUMMELINCK's collections presents no taxonomic problems and is all referable to well known species. It is of interest as a contribution to our knowledge of the distri-

bution and ecology of ascidians in the Caribbean. Dr WAGENAAR HUMMELINCK was meticulous in describing the localities from which specimens were collected and this information has been separately published (1977). We thus have information not only on the regional distribution of ascidians but also on the type of environment in which each species may be found. The information contained here is by itself insufficient on which to base positive conclusions but is necessary source material on which to draw later for discussion of the habitat distribution of Caribbean ascidians. For this reason it is presented here solely as tabular material without further discussion.

TABLE I provides a list of species recorded in the collections; TABLE II shows for each species the territories and localities in which each species has been collected; TABLE III gives detailed information on each collecting station abstracted from WAGENAAR HUMMELINCK (1977). The location of the different West Indies islands is shown in Fig. 43.

Descriptions of the ascidian species are to be found in VAN NAME (1945) except for *Polycarpa arnoldi* for which see VAN DER SLOOT (1969) and the various species of *Didemnum*. The taxonomy of West Indian didemnids is still uncertain and for comments on the species mentioned the reader is referred to GOODBODY (1984), MILLAR (1962) and F. MONNIOT (1983a). The remaining nomenclature follows that of VAN NAME (1945) except as indicated in the footnote to Table I.

I am grateful to Dr. P. WAGENAAR HUMMELINCK for providing me with the opportunity to examine these collections and for his friendship and assistance during my visits to Utrecht. I also extend my thanks and appreciation to Mrs. C. H. E. WAGENAAR HUMMELINCK for her kind and courteous hospitality. A grant from the Royal Society Browne Research Fund assisted my visit to Utrecht in 1979.

All the specimens have been deposited in the Zoölogisch Museum, Universiteit van Amsterdam.

REFERENCES

- GOODBODY, I., 1984. The ascidian fauna of two contrasting lagoons in the Netherlands Antilles: Piscadera Baai, Curaçao, and the Lac of Bonaire. *Studies on the fauna of Curaçao and other Caribbean islands*, vol. 67 (no. 202): 21-61.
- KOTT, P. & GOODBODY, I., 1982. The ascidians of Hong Kong. *Proceedings of the First International Marine Biological Workshop: The marine flora and fauna of Hong Kong and southern China*, 1980. (Eds. B. S. Morton & C. K. Tseng): 503-554.
- MILLAR, R. H., 1962. Some ascidians from the Caribbean. *Stud. Fauna Curaçao* 13 (59): 61-77.

- MILLAR, R. H. & GOODBODY, I., 1974. New species of ascidian from the West Indies. *Stud. fauna Curaçao* 45 (148): 142–161.
- MONNIOT, CLAUDE, 1983a. Ascidies littorales de Guadeloupe II. Phlébobranches. *Bulletin du Muséum National d'Histoire Naturelle*, Paris, 4e série No. 5, section A, No. 1: 51–71.
- MONNIOT, CLAUDE, 1983b. Ascidies littorales de Guadeloupe IV. Styelidae. *Bull. Mus. Natn. Hist. Nat. (4) 5*, A2: 423–456.
- MONNIOT, CLAUDE, 1983c. Ascidies littorales de Guadeloupe VI. Pyuridae et Molgulidae. *Bull. Mus. Natn. Hist. Nat. (4) 5*, A4: 1021–1044.
- MONNIOT, FRANÇOISE, 1983a. Ascidies littorales de Guadeloupe I. Didemnidae. *Bull. Mus. Natn. Hist. Nat. (4) 5*, A1: 5–49.
- MONNIOT, FRANÇOISE, 1983b. Ascidies littorales de Guadeloupe III. Polyclinidae. *Bull. Mus. Natn. Hist. Nat. (4) 5*, A2: 413–422.
- MONNIOT, FRANÇOISE, 1983c. Ascidies littorales de Guadeloupe V. Polycitoridae. *Bull. Mus. Natn. Hist. Nat. (4) 5*, A4: 999–1019.
- ROWE, F. W. E., 1966. A review of the genus *Diplosoma* Macdonald, 1859 (Ascidacea: Didemnidae) with a description of the proposed neotype of *Diplosoma listerianum* (Milne Edwards), 1841. *Annals and Magazine of Natural History (13) 9*: 457–467.
- SLOOT, C. J. VAN DER, 1969. Ascidiens of the family Styelidae from the Caribbean. *Stud. fauna Curaçao* 30 (110): 1–57.
- VAN NAME, W. G., 1921. Ascidiens of the West Indian Region and South-eastern United States. *Bulletin of the American Museum of Natural History* 44: 283–494.
- VAN NAME, W. G., 1924. Ascidiens from Curaçao. *Bijdragen tot de Dierkunde*, Amsterdam, 23: 23–32.
- VAN NAME, W. G., 1930. The ascidiens of Porto Rico and the Virgin Islands. *Scientific Survey of Porto Rico and the Virgin Islands* 10: 401–512.
- VAN NAME, W.G., 1945. The North and South American ascidiens. *Bull. Amer. Mus. N.H.* 84: 1–476.
- WAGENAAR HUMMELINCK, P., 1977. Marine localities. *Stud. fauna Curaçao* 51 (167): 1–68.

TABLE I

SPECIES OF ASCIDIAN RECORDED FROM THE WEST INDIES

in the collections of P. WAGENAAR HUMMELINCK. The list does not include species collected only in Piscadera Baai, Curaçao, or Lac of Bonaire for which see GOODBODY (1984).

-
- Polyclinum constellatum* Savigny, 1816
 + *Didemnum psammathodes* (Sluiter), 1895
 + *Didemnum conchyliatum* (Sluiter), 1898
 + *Didemnum duplicatum* F. Monniot, 1983
Didemnum vanderhorsti Van Name, 1924
 # *Diplosoma listerianum* (Milne Edwards), 1841
Eudistoma hepaticum (Van Name), 1921
Eudistoma olivaceum (Van Name), 1902
Distaplia bermudensis Van Name, 1902
Clavelina oblonga Herdman, 1880
 ○ *Perophora bermudensis* Berrill, 1932
Ecteinascidia conklini Berrill, 1932
Ecteinascidia turbinata Herdman, 1880
Ecteinascidia tortugensis Plough & Jones, 1939
Ascidia interrupta Heller, 1878
Ascidia nigra (Savigny), 1816
Ascidia sydneyensis Stimpson, 1855
Rhososoma turcicum (Savigny), 1816
Corella minuta Traustedt, 1882
Botrylloides nigrum Herdman, 1886
Symplegma viride Herdman, 1886
 * *Styela partita* (Stimpson), 1852
Styela plicata (Lesueur), 1823
Polycarpa arnoldi Michaelsen, 1915
Polycarpa spongiabilis Traustedt, 1883
Polyandrocarpa tinctoria (Van Name), 1902
Pyura vittata (Stimpson), 1852
Herdmania momus (Savigny), 1816
Microcosmus exasperatus Heller, 1878
Microcosmus helleri Herdman, 1881
Molgula occidentalis Traustedt, 1883
-

- * For a recent discussion of the synonymy of *S. partita* with *Styela canopus* Savigny, 1816, see KOTT & GOODBODY (1982).
 + For comment on the species of *Didemnum* see GOODBODY (1984)
 # *Diplosoma macdonaldi* described from the West Indies is synonymous with *D. listerianum* (See ROWE, 1966).
 ○ For discussion of the synonymy of *P. bermudensis* with *P. formosana* Oka, 1931, see C. MONNIOT (1983a).

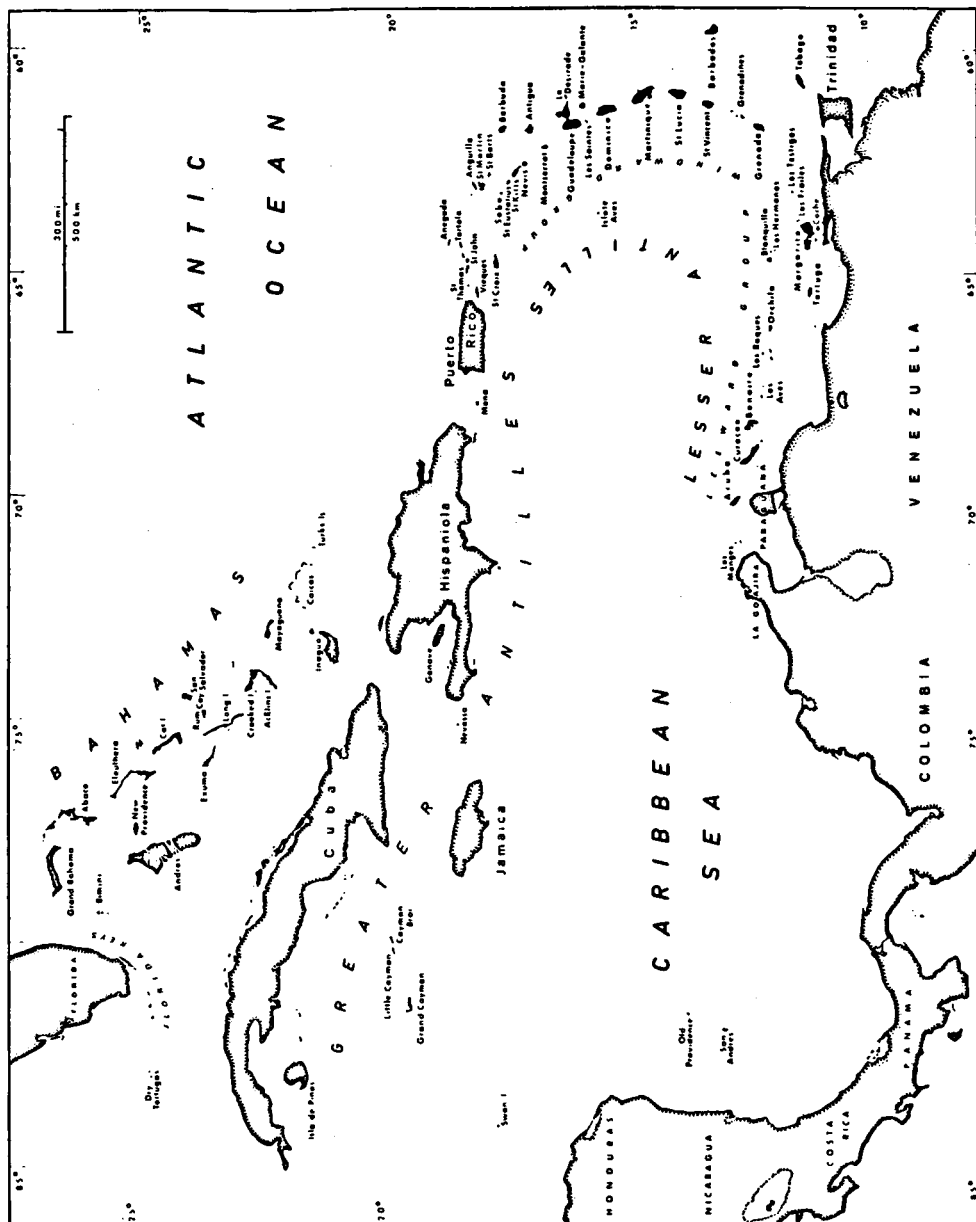


Fig. 43. Map of the CARIBBEAN and South Florida showing territories mentioned in the tables (Reproduced from WAGENAAR HUMMELINCK, 1977).

TABLE II

LOCALITIES IN THE CARIBBEAN AND FLORIDA AT WHICH DIFFERENT SPECIES OF ASCIDIAN WERE COLLECTED.

For further details see text. - Numbers of ascidians collected are quoted as number of individuals or number of individual colonies. The following abbreviations are also used: *, an unspecified number of individuals or colonies, usually referring to large clusters; +, a fragment only of a colony. - Territory refers to the Island or State in which the animal was found (see also Fig. 43). Further detail on habitats is given in Table III.

SPECIES	STATION No.	TERRITORY	LOCALITY	NUMBER OF SPECIMENS	
<i>Polyclinum constellatum</i>	1004A	Aruba	Lagoen Boekoeti	1	
	1409	Florida	Virginia Cay	4	
	1410A	Florida	Key Biscayne	1	
	1412	Florida	Key Biscayne	1	
	1429	St. Martin	Oyster Pond	2	
	1429A	St. Martin	Oyster Pond	1	
	1447	Margarita	Punta de Piedras	1	
	1448	Margarita	Punta de Piedras	9	
	1538	Barbuda	Great Lagoen	3	
	1555	Bonaire	Lagoen	+	
	1689	Grand Cayman	North Sound	1	
	<i>Didemnum conchylatum</i>	1037A	Curacao	Spaanse Water	1
		1447	Margarita	Punta de Piedras	1
1449		Margarita	Puente de la Restinga	1	
1548		St. Lucia	Castries	1	
1550		Grenada	Hog island	2	
1629		Curacao	Spaanse Water	1	

<i>Didemnum duplicatum</i>	1449	Margarita	Puente de la Restinga	2
	1550	Grenada	Hog Island	1
<i>Didemnum psammathodes</i>	1004A	Aruba	Lagoen Boekoeti	1
	1548	St. Lucia	Castries	1
	1549	St. Vincent	Calliaqua Bay	1
	1550	Grenada	Hog island	1
<i>Didemnum vanderhorsti</i>	1447	Margarita	Punta de Piedras	1
	1618	Curacao	Fuik Baai	1
	1629	Curacao	Spaanse water	1
<i>Diplosoma listerianum</i>	1004A	Aruba	Lagoen Boekoeti	1
	1009A	Aruba	Plaja Master	1
	1049B	Bonaire	Klein Bonaire	+
	1217A	Margarita	Laguna de las Maritas	+
	1408	Florida	Virginia Key	+
	1408A	Florida	Virginia Key	+
	1447	Margarita	Punta de Piedras	2
	1555	Bonaire	Lagoen	1
	1618	Curacao	Fuik Baai	+
	1677	Jamaica	Port Royal	+
	1447	Margarita	Punta de Piedras	*
<i>Eudistoma hepaticum</i>	1004A	Aruba	Lagoen Boekoeti	1
	1410A	Florida	Key Biscayne	*
	1412	Florida	Key Biscayne	*
	1420	Puerto Rico	Phosphorescent Bay	1
	1429A	St. Martin	Oyster Pond	+
	1446	Margarita	Punta Mangle	*
	1551	Grenada	Hog Island	3
	1551	Grenada	Hog Island	3
<i>Eudistoma olivaceum</i>	1004A	Aruba	Lagoen Boekoeti	1
	1410A	Florida	Key Biscayne	*
	1412	Florida	Key Biscayne	*
	1420	Puerto Rico	Phosphorescent Bay	1
	1429A	St. Martin	Oyster Pond	+
	1446	Margarita	Punta Mangle	*
	1551	Grenada	Hog Island	3
	1551	Grenada	Hog Island	3

1629	Curacao	Spaanse Water	4
1677	Jamaica	Port Royal	*
1678	Jamaica	Port Royal	+
1689	Grand Cayman	North Sound	1
1693	Grand Cayman	South Sound	1
1699	Little Cayman	South Hole Sound	*
<i>Distaplia bermudensis</i>			
1037A	Curacao	Spaanse Water	1
1449	Margarita	Puente de la Restinga	3
1629	Curacao	Spaanse Water	2
<i>Clavelina oblonga</i>			
1004A	Aruba	Lagoen Boekoeti	1
1217a	Margarita	Laguna de las Maritas	+
1449	Margarita	Puente de la Restinga	2
<i>Perophora bermudensis</i>			
1003b	Aruba	Lagoen Boekoeti	1
1009A	Aruba	Plaja Master	1
1411	Florida	Key Biscayne	1
1421	Puerto Rico	Phosphorescent Bay	1
1555	Bonaire	Lagoen	1
1689	Grand Cayman	North Sound	1
1693	Grand Cayman	South Sound	+
<i>Ecteinascidia conklini</i>			
1132	St. Martin	Simson Bay Lagoen	+
1410A	Florida	Key Biscayne	1
1429A	St. Martin	Oyster Pond	+
1555	Bonaire	Lagoen	1
<i>Ecteinascidia turbinata</i>			
1004A	Aruba	Lagoen Boekoeti	1
1132	St. Martin	Simson Bay Lagoen	+
1543	Guadeloupe	Rivière Salée	1
1545	Guadeloupe	Rivière Salée	1
1677	Jamaica	Port Royal	+

<i>Ecteinascidia tortugensis</i>	1003b	Aruba	Lagoen Boekoeti	1
<i>Ascidia interrupta</i>	1008a	Aruba	Spaans Lagoen	3
	1008A	Aruba	Spaans Lagoen	15
	1008Aa	Aruba	Spaans Lagoen	27
	1304	Aruba	Bucuti Reef	1
	1447	Margarita	Punta de Piedras	1
	1449	Margarita	Puente de la Restinga	1
	1677	Jamaica	Port Royal	2
	1038	Curacao	Fuik Baai	1
	1408	Florida	Virginia Key	2
	1409	Florida	Virginia Key	5
<i>Ascidia nigra</i>	1410A	Florida	Key Biscayne	1
	1429	St. Martin	Oyster Pond	1
	1429B	St. Martin	Oyster Pond	5
	1447	Margarita	Punta de Piedras	2
	1449	Margarita	Punta de Piedras	4
	1550	Grenada	Puente de la Restinga	2
	1629	Curacao	Hog Island	4
	1634	Curacao	Spaanse Water	4
	1674	St. Thomas	Spaanse Water	7
	1677	Jamaica	Benner Bay	2
<i>Ascidia sydneyensis</i>	1706	Bonaire	Port Royal	2
			Pekelmeer	1
	1550	Grenada	Hog Island	1
	1618	Curacao	Fuik Baai	1
	1704	Anguilla	Crocus bay	1
<i>Rhodossoma turcicum</i>	1036A	Curacao	Spaanse Water	1
<i>Corella minuta</i>	1704	Anguilla	Crocus Bay	2
	1705	Saba	Fort Bay	80

<i>Botrylloides nigrum</i>	1009A	Aruba	Piaja Master	1	
	1132	St. Martin	Simson Bay Lagoon	+	
	1449	Margarita	Puente de la Restinga	2	
	1689	Grand Cayman	North Sound	1	
<i>Symplegma viride</i>	1409	Florida	Virginia Key	3	
	1545	Guadeloupe	Rivière Salée	1	
	1550	Grenada	Hog Island	1	
	1677	Jamaica	Port Royal	1	
	1689	Grand Cayman	North Sound	*	
<i>Styela partita</i>	1008A	Aruba	Spaans Lagoon	5	
	1036A	Curaçao	Spaanse Water	1	
	1304	Aruba	Bucuti Reef	10	
	1410	Florida	Key Biscayne	1	
	1449	Margarita	Puente de la Restinga	3	
	1543	Guadeloupe	Rivière Salée	4	
	1547	Martinique	Anse de Trois Rivières	*	
	1550	Grenada	Hog Island	*	
	1674	St. Thomas	Benner Bay	54	
	1677	Jamaica	Port Royal	2	
	1706	Bonaire	Pekelmeer	6	
	<i>Styela plicata</i>	1409	Florida	Virginia Key	1
		1449	Margarita	Puente de la Restinga	10
<i>Polycarpa arnoldi</i>	1618	Curaçao	Fuik Baai	14	
	1629	Curaçao	Spaanse Water	2	
	1705	Saba	Fort Bay	17	
<i>Polycarpa spongiabilis</i>	1541	Antigua	Dickinson Bay	1	

<i>Polyandrocampa tincta</i>	1629	Curaçao	Spaanse Water	1	
<i>Pyura vittata</i>	1550	Grenada	Hog Island	11	
	1634	Curaçao	Spaanse Water	1	
<i>Herdmania momus</i>	1409	Florida	Virginia Key	2	
	1439	Martinique	Anse de l'Ane	1	
	1550	Grenada	Hog Island	2	
	1038A	Curaçao	Fuik Baai	2	
<i>Microcosmus exasperatus</i>	1301	Aruba	Malmok	1	
	1409	Florida	Virginia Key	10	
	1447	Margarita	Punta de Piedras	3	
	1448	Margarita	Punta de Piedras	1	
	1449	Margarita	Puente de la Restinga	30	
	1548	St. Lucia	Castries	1	
	1550	Grenada	Hog Island	3	
	1629	Curaçao	Spaanse Water	1	
	1634	Curaçao	Spaanse Water	6	
	1644	Curaçao	Fuik Baai	1	
	1674	St. Thomas	Benner Bay	15	
	1677	Jamaica	Port Royal	3	
	<i>Microcosmus helleri</i>	1409	Florida	Virginia Key	1
		1439	Martinique	Anse de l'Ane	7
		1541	Antigua	Dickinson Bay	3
1548		St. Lucia	Castries	2	
1618		Curaçao	Fuik Baai	2	
1644		Curaçao	Fuik Baai	3	
1214		Los Frailes	Isla Real	1	
<i>Molgula occidentalis</i>	1629	Curaçao	Spaanse Water	2	
	1644	Curaçao	Fuik Baai	2	

TABLE III

LOCALITIES IN THE CARIBBEAN AND FLORIDA FROM WHICH ASCIDIANS WERE COLLECTED

excluding Piscadera Baai (Curaçao) and Lac (Bonaire). From WAGENAAR HUMMELINCK, 1977; see also MILLAR, 1962.

STATION No.	DATE	TERRITORY	LOCALITY	HABITAT
1003b	20.XII.36	Aruba	Lagoen Boekoeti	Sandy Mud; 0.5-1 m.
1004A	29.XII.48	Aruba	Lagoen Boekoeti	<i>Rhizophora</i> ; <i>Thalassia</i> ; 0-1 m.
1008a	24.III.70	Aruba	Spaans Lagoen	Rock and mud near <i>Rhizophora</i> ; 0.25-1 m.
1008A	1.1.49	Aruba	Spaans Lagoen	On <i>Rhizophora</i> ; 0-1 m.
1008Aa	24.III.70	Aruba	Spaans Lagoen	On <i>Rhizophora</i> in mud; 0-1 m.
1009A	2.1.49	Aruba	Plaja Master	On <i>Rhizophora</i> in sand; 0-1 m.
1036A	10.IV.49	Curaçao	Spaanse Water	<i>Rhizophora</i> with <i>Isognomon</i> and sponges; mud; 0-1 m.
1037A	21.IV.49	Curaçao	Spaanse Water	Sandy beach with a few <i>Rhizophora</i> ; <i>Isognomon</i> and balanids; 0-1.5 m.
1038	2.III.49	Curaçao	Fuik Baai	Rocky shore with sandy mud; some <i>Thalassia</i> ; near <i>Rhizophora</i> ; 0-1.5 m.
1038A	2.III.49	Curaçao	Fuik Baai	<i>Rhizophora</i> in mud; 0-1 m.
1049B	13.IX.48	Bonaire	Klein Bonaire	Reef debris on sandy beach; 0-1.5 m.
1127	16.V.49	St. Martin	Great Bay	Rocky beach with sandy debris; some <i>Thalassia</i> ; 0.5-1 m.
1132	8.VI.49	St. Martin	Flamingo Pond	Rocky shore of muddy lagoon; much <i>Batophora</i> ; on <i>Rhizophora</i> and <i>Avicennia</i> ; 0-1 m.
1214	18.VI.36	Los Frailes	Simson Bay Lagoen	Sandy debris of igneous rock; 3-4 m deep.
1217a	13.I.64	Margarita	Laguna de las Maritas	Shallow border of large lagoon; extensive <i>Rhizophora</i> ; almost isolated pool with muddy sand and mud; 0.25-1 m.
1301	14.VIII.55	Aruba	Malmok, Arasji	Rocky beach with sand and diorite boulders; <i>Thalassia</i> flat with <i>Porites</i> ; 0-1 m.

1304	6.V.55	Aruba	Bucuti Reef	Small shallow pool in sand, in connection with sea at high tide; 0-0.75 m.
1408	4.IX.63	Florida	Virginia Key	Sandflat with <i>Syringodium</i> and <i>Thalassia</i> beds; 0.5-1.5 m.
1408A	4.IX.63	Florida	Virginia Key	Sea grass with pieces of coral, <i>Syringodium</i> and concrete; 1-2 m.
1409	1.IX.63	Florida	Virginia Key	Concrete and wooden poles in muddy water with tidal flow; balanids, sponges, hydroids, ascidians; 0-2 m.
1410	1.IX.63	Florida	Key Biscayne	Sandflat with dense <i>Syringodium</i> & <i>Thalassia</i> ; 0.5-1.5 m.
1410A	1.IX.63	Florida	Key Biscayne	Single <i>Rhizophora</i> amongst <i>Thalassia</i> ; <i>Isognomon</i> & balanids; 0-1 m.
1411	7.IX.63	Florida	Key Biscayne	Sandy beach with mangrove; rock; tidal pools with <i>Zoanthus</i> , <i>Tetracitta</i> , <i>Thalassia</i> & <i>Halodule</i> ; 0-1 m.
1412	31.VIII.63	Florida	Key Biscayne	Drainage canal in mangrove c. 6 m. wide; poor <i>Rhizophora</i> & <i>Avicennia</i> ; 0.5-1.5 m.
1420	17.IX.63	Puerto Rico	Phosphorescent Bay	Sandy mud with <i>Thalassia</i> & <i>Halodule</i> ; <i>Rhizophora</i> with <i>Isognomon</i> ; 0-0.5 m.
1421	17.IX.63	Puerto Rico	Phosphorescent Bay	Muddy sand with <i>Thalassia</i> , <i>Halodule</i> , <i>Syringodium</i> ; <i>Rhizophora</i> with <i>Isognomon</i> ; 0-1 m.
1429	13.X.63	St. Martin	Oyster Pond	Sandy part of lagoon with some <i>Rhizophora</i> ; patches of <i>Thalassia</i> , <i>Syringodium</i> and <i>Halimeda</i> ; 0-1.5 m.
1429A	13.X.63	St. Martin	Oyster Pond	Rock shore near <i>Rhizophora</i> ; 0-0.5 m.
1429B	13.X.63	St. Martin	Oyster Pond	Sandy mud with <i>Thalassia</i> and <i>Halodule</i> ; 0.5-1.5 m.
1439	10.II.64	Martinique	Anse de L'Âne	Sand beach; rock debris; some <i>Thalassia</i> ; 0-1 m.
1446	11.I.64	Margarita	Punta Mangle	Very muddy lagoon with <i>Rhizophora</i> & <i>Avicennia</i> ; 0-1 m.
1447	12.I.64	Margarita	Punta de Piedras	Poles in muddy sand; <i>Thalassia</i> ; 0-1 m.
1448	12.I.64	Margarita	Punta de Piedras	<i>Rhizophora</i> and dead branches with balanids; sponges, ascidians; in narrow entrance to lagoon; 0-1.5 m.
1449	11.I.64	Margarita	Punta de la Restinga	Concrete & rock debris in entrance of large lagoon; <i>Rhizophora</i> with ascidians & sponges; 0-1 m.
1538	21.VII.67	Barbuda	Great Lagoon	Poles of small pier in muddy sand with debris, some <i>Batophora</i> , sponges & ascidians; 0-1.5 m.

1541	1541	1541	1541	Dickinson Bay	Wooden poles in sand; 0-1.25 m.
1543	1543	1543	1543	Rivière Salée	<i>Rhizophora</i> in muddy sand with shell debris; 0-1 m.
1545	1545	1545	1545	Rivière Salée	<i>Rhizophora</i> with <i>Isonomon</i> in sandy mud; 0-0.5 m.
1547	1547	1547	1547	Anse de Trois Rivières	<i>Rhizophora</i> , mud & sand; with <i>Thalassia</i> ; 0-1 m.
1548	1548	1548	1548	Port Castries	<i>Rhizophora</i> and wreck with sheet iron in soft mud; slightly polluted area; 0-1.5 m.
1549	1549	1549	1549	Calliaqua Bay	Sandy shore with pebbles; single <i>Conocarpus</i> ; some <i>Thalassia</i> ; 0-1 m.
1550	1550	1550	1550	Hog Island	<i>Rhizophora</i> in mud; <i>Isonomon</i> and ascidians; 0-1.5 m.
1551	1551	1551	1551	Hog Island	<i>Rhizophora</i> in sandy mud; numerous balanids; 0-0.5 m.
1555	1555	1555	1555	Bonaire	Sheet of water in <i>Aicennia</i> grove; 0-0.25 m.
1618	1618	1618	1618	Fuik Baai	<i>Rhizophora</i> in mud; 0-0.5 m.
1629	1629	1629	1629	Spaanse Water	Rocky with <i>Rhizophora</i> in mud; 0-1 m.
1634	1634	1634	1634	Spaanse Water	On buoy in 2 m deep muddy water; 0-0.5 m.
1644	1644	1644	1644	Fuik Baai	Muddy rock debris near <i>Rhizophora</i> ; 2 m.
1674	1674	1674	1674	Benner Bay	<i>Rhizophora</i> in sandy mud; 0-1 m.
1677	1677	1677	1677	Kingston Harbour	Muddy sand and coral debris decaying wood; <i>Rhizophora</i> ; 0-0.5 m.
1678	1678	1678	1678	Fort Rocky Lagoon	<i>Rhizophora</i> in mud; muddy sand with <i>Halodule</i> ; 0-1 m.
1689	1689	1689	1689	Kingston Harbour	
				Small channel	
1693	1693	1693	1693	North Sound	Wooden poles of decaying jetty in muddy area; <i>Rhizophora</i> ; 0-1 m.
1699	1699	1699	1699	South Sound	Sandy bay with <i>Rhizophora</i> ; 0-1.5 m.
1704	1704	1704	1704	South Hole Sound	Wooden piling on sandy flat with dense <i>Halodule</i> ; 0-1 m.
1705	1705	1705	1705	Croesus Bay	Limestone and igneous rock near sandy beach; 0-1 m.
1706	1706	1706	1706	Fort Bay	Wooden poles recently constructed; 0-1 m.
				Pekelmeer	Debris near waterline; very weak brine.
				South of Witte Pan	

APPENDIX

The following list of species treated by MILLAR (1962) is given here for completeness sake.

- Polyclinum constellatum* – CURAÇAO 1037A, Spaanse Baai. BONAIRE 1070A, Lagoen. ST. MARTIN 1128Aa, Great Bay. JAMAICA 1148, Kingston Harbour.
- Didemnum vanderhorsti* – CURAÇAO s.n., St. Joris Baai.
- Didemnum conchylitatum* – CURAÇAO 1028A, s.n., Piscadera Baai.
- Trididemnum solidum* – CURAÇAO 1037A, Spaanse Baai; s.n. Valentijn Baai.
- Trididemnum orbiculatam* – CURAÇAO s.n., Piscadera Baai (doubtful).
- Lissoclinum fragile* – CURAÇAO 1037A, Spaanse Baai; 1337a, Spaanse Water; s.n., St. Joris Baai.
- Eudistoma olivaceum* – CURAÇAO 1037A, Spaanse Baai. BONAIRE 1064a, 1064b, 1064c, Lac; 1070A, Lagoen. ST. MARTIN 1132, Simson Bay Lagoen. ST. CROIX 1404, Krausse Lagoen. NORTH BIMINI 1151, Laboratory Dock.
- Eudistoma clarum* – BONAIRE 1064a, Lac (doubtful).
- Distaplia bermudensis* – CURAÇAO 1037A, Spaanse Baai.
- Clavelina oblonga* – CURAÇAO s.n.
- Perphora bermudensis* – LA GOAJIRA 1201, Puerto López. ARUBA 1003, 1006, Bucuti; 1008A, Spaans Lagoen. KLEIN BONAIRE 1049B, East coast. BONAIRE 1056Ba, Playa Lechi; 1064c, 1064A, 1066b, Lac; 1070c, Lagoen. ISLOTE AVES 1114, N.shore. ANTIGUA 1393, Deep Bay. BARBUDA 1396, Great Lagoen. ST. KITTS 1397, Frigate Bay. ST. CROIX 1404, 1406, Krausse Lagoen.
- Ecteinascidia turbinata* – ARUBA 1008A, Spaans Lagoen. ST. MARTIN 1128A, Great Bay; 1130, 1131, 1132, Simson Bay. ST. CROIX 1404, 1405, Krausse Lagoen.
- Ecteinascidia conklini* – CURAÇAO 1337a, Spaanse Baai. BONAIRE 1064b, 1065, 1066b, Lac. BARBUDA 1396, Great Lagoen. ST. MARTIN 1131, 1132, Simson Bay.
- Ecteinascidia tortugensis* – BONAIRE 1064, 1064c, Lac. TRINIDAD 655, Gasparo Grande cave. ST. CROIX 1406, Krausse Lagoen. SOUTH BIMINI 1150, 1150A, Massy Creek.
- Ascidia nigra* – CURAÇAO 1037A, Spaanse Baai; s.n., Spaanse Water; 1038Aa, s.n., Fuik Baai.
- Ascidia interrupta* – ARUBA 1008A, Spaans Lagoen. CURAÇAO 1020C, Boca Lagoen.
- Ascidia curvata* – ARUBA 1008A, Spaans Lagoen. BONAIRE 1068a, Lac.
- Rhodosoma turcicum* – CURAÇAO s.n.
- Botrylloides nigrum* – BONAIRE 1064, 1064A, 1064Ab, Lac. ST. MARTIN 1132, Simson Bay Lagoen.
- Symplegma viride* – CURAÇAO s.n., Piscadera Baai.
- Polycarpa crossogonima* (= *arnoldi*) – BONAIRE 1068a, Lac. ST. MARTIN 1127, Great Bay.
- Polycarpa cartilaginea* – CURAÇAO s.n.
- Pyura vittata* – CURAÇAO 1019, Plaja Djerimi; 1029A, Piscadera Baai; 1037A, Spaanse Baai; 1039, 1039A, Fuik Baai; s.n. KLEIN BONAIRE 1049B, East coast. BONAIRE 1053, Kralendijk; 1068a; Lac; s.n., Oranjepan.
- Microcosmus exasperatus* – CURAÇAO 1028A, s.n., Piscadera Baai; 1037A, Spaanse Baai; s.n.
- Microcosmus helleri* – CURAÇAO 1036A, Spaanse Water; 1039A, Fuik Baai.
- Molgula occidentalis* – CURAÇAO 1039A, Fuik Baai. BONAIRE 1064b, Lac. ARAYA s.n., Chacopata.