STUDIES ON THE FAUNA OF CURAÇAO AND OTHER CARIBBEAN ISLANDS: No. 171.

ROTATORIA OF THE CARIBBEAN REGION

by

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Dr. P. WAGENAAR HUMMELINCK kindly sent me part of the material he collected on his trips to The Caribbean (Fig. 47) for study of the Rotifera. There were several hundred samples, taken between 1930 and 1973, most of them with nets for zooplankton or with the metal plankton sieve of Kolkwitz. Unfortunately, both proved too coarse for the collecting of many smaller species of Rotifers, which may possibly explain the small number of species found. Moreover it must be emphasized that only part of the original samples was usually received, so there was no possibility to study the populations on a quantitative basis.

Still these samples proved to be of great interest because their study resulted in a first contribution to our knowledge of the Rotifers occurring in the Caribbean. As to the Greater Antilles we only have a publication of EDMONDSON (1933) on the Rotatoria of Haïti.

The samples containing Rotifers may be classified in three groups:

a) 127 samples containing identifiable species.

b) 28 samples containing individuals identifiable to the genus only – viz.
Asplanchna spp. from Sta. 860, 024, 1442, 1469
Cephalodella ssp. from Sta. 72, 104, 360, 640, 860, 886, 0120, 1013a, 1140, 1697
Euchlanis spp. from Sta. 50, 547, 756, 024
Filinia sp. from Sta. 44f
Limnias spp. from Sta. 008, 029
Notommata spp. from Sta. 72
Ptygura spp. from Sta. 979, 983, 096, 1691
Rotaria spp. from Sta. 679c, 007.

c) 96 samples containing Bdelloids and illoricate Digononta that proved unidentifiable owing to formol or alcohol contraction.

In this paper we only deal with the 127 first mentioned samples.

It must be pointed out that several samples from marine, brackish and fresh waters collected in 1930 in Bonaire, Curaçao and Aruba, have been sent to prof. dr. A. REMANE previously. He found many unidentifiable Bdelloids, and, in Pos Guajaká, Lima, Bonaire (ca. 0.48 g Cl'/l), *Lecane grandis* and *Synchaeta* sp. (HUMMELINCK 1933, p. 316). Unfortunately this material, as well as REMANE's notes and

drawings were lost during World War II. Moreover REMANE preferred to discontinue his work on the Rotifera of the Caribbean, so I took over the study of the present material.

Hearty thanks are due to dr. WAGENAAR HUMMELINCK who kindly let me study his material, and who assisted me throughout my research in several ways.

The area under consideration belongs to the Neotropical Region, more precisely to the Antillean Subregion. Trinidad and Tobago, as well as Margarita, should be excepted, being separated from the South American continent only in Pleistocene times. The southern part of this Antillean Subregion belongs, for the greater part to the arid regions of the World (HUMMELINCK 1940, p. 5–9).

Most of the samples were taken from small, shallow waters (depth between 0.1 and 2.0 m) with high temperatures, in which organic matter is being decomposed very rapidly. Many of these waters are artificial, other semi-natural, i.e. natural waters excavated and the wall covered with bricks or cemented. Several were non-permanent.

In most cases, there was coral-limestone in the immediate neighbourhood, which explains the high alkalinity of the samples measured on the islands of the Leeward Group. Most pH-values oscillate between 8.0 and 9.0; in only two cases (Sta. 18 and 24 situated in non-calcareous parts of Margarita) a pH of 6.7–7.1 was found.

The whole region being strongly exposed to trade winds, temperatures being high and rainfall low, evaporation is strong, which results in high concentrations of some ions in the water, e.g. hydrogen carbonate and chloride ions. In many cases, the total hardness of the water is very high: values up to 280 german degrees were noted. In a few cases, high sulphate concentrations were also measured. For more details see HUMMELINCK 1940 (p. 28), 1940a (p. 21) and 1953 (p. 32–38, 70–71).

HUMMELINCK does not say whether the high turbidity of many samples is of an anorganic or of an organic origin; nor does he give an explanation of the colouring of many waters. In any case, these properties indicate that most samples have been taken from eutrophic waters. This characteristic is stressed by the presence of an often abundant vegetation of phanerogams and algae. From the above results that periphytic Rotifer species from eutrophic biotopes are those to be expected in the first place.

In our list of samples – in which only a few data on temperature and pH are noted – the values for the chlorinity are to be considered with some caution, as in many cases they apt to vary between large limits – as may be expected from pools situated on arid islands with an erratic rainfall. For example:

a) In Pos Baca Grandi chlorinity was 0.04 g/l on 4.XII.1963 (Sta. 379g), while it had reached 2.18 on 2.IX.1949 (379d) and 2.54 on 15.VIII.1973 (379h).

b) Pos Baca had an estimated chlorinity of 1.5 g/l on 17.V.1930; the chlorinity measured was 0.23 g/l on 14.XI.1936 (Sta. 53) and 0.86 on 31.III.1937 (53a); for 16.VII.1948 (53c) and 26.III.1955 (53e) the values were respectively 2.85 and 0.71 g/l.

c) Pos Lansberg (Sta. 60) had on 26.III.1937 0.37 g/l, and on 21.IX.1948 (60b) 8.86 g/l.

The presence of a typical brackish water Rotifer in Poza Baranca on Margarita on 20.V.1936 (Sta. 12) which had a chlorinity of only 0.12 g/l, indicates that the salinity of this pool must often be considerably higher.

LOCALITIES AND SPECIES

(a few striking features in plankton composition were added by the author)

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
	KEY BISCAYNE		
694	Pond of Harbor Drive, 9.IX.1963 *Lecane arcuata* *Lecane tenuiseta*	0.06	Crowded with phanerogams, some *Chara*.
	SOUTH BIMINI		
549	Fountain of Youth, 20.VIII.1949 *Lecane aculeata*	0.47	Muddy hole in limestone with some very small algae.
	NEW PROVIDENCE		
547	Trench at Pall's Waterworks, 23.VIII.1949 *Euchlanis dilatata* *Lecane scutata*	0.30	Artificial well in limestone with *Utricularia* and masses of algae.
548	Archbold's Pond 23.VIII.1949 *Lecane aculeata*	0.02	Growth of algae, *Chara*, *Utricularia* and other phanerogams.

Station	Locality and Date	Salinity in g·Cl'/l	Characteristics
	Grand Cayman		
979	Water Ground, 18.V.1973 *Lecane grandis* *Lecane harringi* *Lecane nana* *Lecane obtusa*	0.39	Grassy pools and ditches with *Chara*, fishes and snails, many diatoms, copepods and ostracods. [Pl. IVa].
980	Well near Walkers Road, 10.VI.1973 *Colurella colurus* *Lecane grandis*	0.08	Pond in pasture with many diatoms, ostracods and nematodes, *Spirogyra*, *Phacus* and *Spirulina*.
982	Pool NE of Breakers, 27.V.1973 *Colurella obtusa*	0.37	Puddle crowded with phanerogams, diatoms, rhizopods and nematodes.
983	Pool near N.E. Point, 25.V.1973 *Lecane flexilis* *Lecane nana*	1.56	Cavern water with few algae and fish, diatoms, rhizopods, *Oscillatoria*, Chlorophyceae.
1691	Colliers Pond, 25.V.1973 *Brachionus plicatilis* *Lecane plesia* *Tripleuchlanis plicata*	12.60	*Avicennia* swamp with *Chara*, many diatoms, rhizopods, copepods and ostracods.
	Cayman Brac		
007	Deep well of Lonely Hill, 29.V.1973 *Lecane cornuta*	0.10	Artificial well near house, much *Oscillatoria*, *Closterium*, *Spirulina* and *Arcella*.
1702	South East Bay Lagoon, 3.VI.1973 *Brachionus plicatilis* *Lecane grandis*	ca 18.00	Mud flat with *Rhizophora* and *Ruppia*, *Peridinium* dominant in plankton.
	Jamaica		
024	The Flashes near Great Saltpond, 8.V.1973 *Lecane aculeata* *Lecane nana*	0.34	Grassy ditch in swampy area, with many diatoms, ostracods, insect larvae and *Centropyxis*

Station	Locality and Date	Salinity in g Cl′/l	Characteristics
029	Pool near Chapel of U.W.I. campus at Mona, Kingston, 13.V.1973 *Colurella anodonta* *Lecane aculeata* *Lecane arcuata* *Lecane hornemanni* *Lecane inermis* *Lecane luna* *Lecane nana* *Lepadella patella*	0.00	Cemented basin in garden, with phanerogams, many diatoms, ostracods, rhizopods, nematodes, *Ankistrodesmus*.
	PUERTO RICO		
708	Río Guánica, digue, 15.IX.1963 *Lecane bulla*	0.65	Near floodgate of drainage, few algae only.
	ST. CROIX		
684	Trough in garden at Canaän, 10.VI.1955 *Lecane cornuta* *Lecane lunaris*	0.27	Artificial pool with *Eichhornia*, *Cabomba*, etc.
	ANGUILLA		
544	Bedney's Spring, 18.VI.1949 *Lecane aculeata*	1.50	Very shallow pool with *Chara* and algae (pH 8.2).
055	Badcox Pond near Gauls Pond, 1.VII.1973 *Colurella colurus*	2.70	Seepage near salt flat with much *Spirogyra*, nematodes and ostracods.
055A	Same, 300 m from 055 *Colurella colurus* *Lecane luna*	ca 2.50	Seepage from limestone with much *Spirogyra*, nematodes and rhizopods.
	ST. MARTIN		
461	Old Battery, E of Philipsburg, 18.V.1949 *Brachionus trahea*	—	Leaf decay near dry cistern.

Station	Locality and Date	Salinity in g Cl′/l	Characteristics
529	Old Battery Cistern, 18.V.1949 *Brachionus quadridentatus* *Lecane closterocerca*	0.11	Dense growth of algae and duckweed (pH 8.1).
542d	Devils Hole Swamp at Corner Hill, 28.VI.1973 *Lecane furcata* *Lecane inermis* *Tripleuchlanis plicata*	10.95	Pool in limestone with *Avicennia*, algae, *Closterium*, *Pediastrum*, *Chroococcus*, many diatoms, Cyanophyta, tintinnids and nematodes. [Pl. IVb].
679c	Bloomingdale Cistern, NE shore of Great Saltpond, 21.VI.1973 *Brachionus angularis* *Brachionus calyciflorus* *Colurella adriatica* *Lecane inermis* *Lecane nana* *Lecane thalera* *Tripleuchlanis plicata*	1.11	Semi-permanent, crowded with *Chara* and *Ruppia*, many small desmids and diatoms, rhizopods, ostracods, insect larvae and nematodes.
093	Slob of Norman, E of Grand' Case, 22.VI.1973 *Brachionus angularis*	0.04	Muddy cattle pool, many insect larvae, beetles, and ostracods.
094	Slob of Belvédère, 20.VII.1973 *Brachionus rubens* *Keratella procurva*	0.08	Muddy cattle pool, abundant Cladocera and Ostracoda, flagellates and diatoms, insects. [Pl. Va].
095	Spring Garden pool at Prince's Quarter, 20.VI.1973 *Lepadella patella*	0.43	Drying mud pool of hennery, crowded with duckweed, many Cladocera.
097	Slob of Welgelegen, W of Philipsburg, 22.VII.1973 *Lepadella patella*	0.21	Muddy cattle pool, crowded with duckweed, many Cladocera, Ostracoda, *Euglena* and *Navicula*. [Pl. Vb].
098	Rock pool of Mornes Rouges, Terres Basses, 23.VI.1973 *Lecane closterocera*	0.07	Water hole in non-calcareous rock with some Chlorophyceae, many rhizopods, ostracods, diatoms, *Cosmarium* and *Vorticella*.

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
1134	Cemented trough at seepage on SE shore of Great Salt-pond, 19.V.1949 *Brachionus plicatilis* *Colurella colurus* *Lecane closterocerca* *Lecane cornuta* *Lecane grandis* *Lecane harringi* *Tripleuchlanis plicata*	46.00	Many Cyanophyta and diatoms, *Arcella*, crustaceans. (pH 8.6, 31°C). [*Stud. 4*, pl. Va].
1140	Saline de Grand'Case, canal, 20.V.1949 *Brachionus plicatilis*	87.00	Some algae, nematodes and nauplius larvae.
	TINTAMARRE		
526	Flat Island Well, 20.VI.1949 *Lecane harringi*	1.50	Small algae (shady).
0104	Small cistern, 15.VII.1973 *Lepadella patella*	0.06	No plants, many Cladocera and ostracods (in part shady).
	ST.-BARTHÉLEMY (St. Barts)		
1122	Grande Saline, pool in cemented intake *Lecane grandis* *Tripleuchlanis plicata*	34.0	Muddy algae, very abundant *Synura uvella*.
	SABA		
517	Well of Spring Bay, 28.VII.1949 *Lecane cornuta*	0.16	Excavated in andesitic rock debris, plant decay, very small algae. (pH ? 7.4).
	ST. EUSTATIUS		
506a	Manahega Well, Downtown, 8.X.1963 *Ascomorpha saltans*	1.00	Cemented hole in volcanic rock debris, some coating of algae. [*Stud. 4*, pl. IVa].

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
507	Twin Cisterns, Downtown, 7.VII.1949 *Ascomorpha saltans*	0.52	Decay of *Hippomane*. (pH? 8.0).
515a	Spout Well, Concordia, 10.X.1963 *Ascomorpha saltans*	8.91	Excavated in andesitic rock, cemented trough, few small algae.
0120	Concordia Bay Well, 11.VII.1973 *Colurella colurus* *Lecane closterocerca* *Lecane harringi*	4.06	Dug in volcanic rock debris, many diatoms and rhizopods.
	Barbuda		
675	Pool at Warden's House, Codrington Village, 5.VII.1955 *Brachionus rubens*	0.17	Muddy, small cattle pool. [Pl. VIa].
676	Village pool very near 675, 5.VII.1955 *Brachionus rubens*	0.14	Small, muddy pool.
	Montserrat		
839	Belham River, N of Plymouth, 20.VII.1967 *Colurella obtusa* *Lecane inermis*	0.10	Rivulet with pools in volcanic rock, many small diatoms.
841	Agric. Dept. Gardens at Plymouth, basin, 20.VII.1967 *Colurella anodonta* *Lecane inermis* *Mytilina mucronata*	0.10	Several phanerogams, much *Phacus*, many rhizopods.
	Marie-Galante		
751	Rivière Vieux Fort, embouchure, 31.I.1964 *Lecane obtusa*	4.93	Pond with a few *Rhizophora*, *Ruppia*, algae.

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
756	Rivière St. Louis, Les Sources, 1.II.1964 *Lecane nana*	0.06	Grassy ditch with *Chara*.
	Les Saintes		
759	Terre-de-Haut, Mare basse, 6.II.1964 *Colurella obtusa* *Euchlanis dilatata* *Lecane aculeata* *Lecane arcuata* *Lecane closterocerca* *Testudinella patina*	0.06	Muddy cattle pond, algae.
760	Terre-de-Haut, Mare haute, 6.II.1964 *Brachionus calyciflorus* *Lecane bulla* *Lecane papuana* *Lecane ungulata* *Trichocerca tigris*	0.07	Grassy cattle pond with water-lilies.
	Dominica		
848	Rupert Canal, NW Portsmouth, 15.VII.1967 *Lecane quadridentata*	1.84	Drainage in shrubby area near shore, many diatoms.
	Martinique		
767	Fossé du Baie de Tartane, Caravelle Peninsula, 9.II.1964 *Lecane bulla*	1.00	Drainage in sandy area near shore, algae flabs.
768	Rivière Monsieur, 9.II.1964 *Lepadella patella*	0.02	Rivulet in andesite rock.
770	Ruisseau de la Pagerie, 10.II.1964 *Colurella colurus* *Colurella obtusa* *Euchlanis dilatata*	0.21	Rivulet in volcanic rock of sugar plantation, few algae.

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
771	Ilet Hardy, 11.II.1964 *Asplanchna brightwelli*	1.95	Small water hole on top of rock, floating algae.
	BARBADOS		
784	Joe's River at Frizers, 16.II.1964 *Colurella colurus*	0.09	Rivulet in grassy rock detritus, algae.
	GRENADA		
659	Well of Calliste at Point Salines, 23.I.1955 *Colurella adriatica* *Colurella anodonta* *Lecane arcuata* *Lecane bulla* *Lecane closterocerca* *Lepadella patella* *Testudinella patina*	0.26	Small cattle pond in part covered by duckweed.
	MARGARITA		
12	Poza Baranca, Manglillo, Macanao, 20.V.1936 *Brachionus angularis* *Brachionus plicatilis*	0.12	Muddy pool with decay of *Mangifera*; few algae, ostracods, copepods, nauplius larvae. (30–36°C) [Pl. VIb].
18	Laguna Honda, SE of Juan Griego, 16.V.1936 *Lecane papuana*	0.15	Natural pond with *Najas* and many algae. (26–32°C, pH 6.9–7.1).
23	Río Asunción, Puente, 11.V.1936 *Ascomorpha saltans* *Lecane arcuata* *Lecane closterocera*	0.39	Slowly flowing pool in metamorphic rock; very few algae. (26–29°C, pH 7.9–8.1).
24	Poza al Sur de Los Robles, 27.V.1936 *Polyarthra remata*	0.09	Muddy pool, many *Pistia*, very few algae. (27–30°C, pH 6.7–7.1).
797	Punta Mosquito, 13.I.1964 *Lecane arcuata* *Lecane cornuta*	—	—

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
s.n.	Río del Valle at Porlamar, 13.V.1936 *Brachionus calyciflorus*	—	Pool in drying rivulet.
	Blanquilla		
38	Poza de Aguada, N of El Jaque, 22.VII.1936 *Brachionus angularis* *Brachionus plicatilis* *Hexarthra fennica*	0.97	Pond in weathered diorite behind dam, almost no vegetation. (28–35°C, pH 7.3–7.5) [Pl. VIIa].
	Los Roques		
42	Gran Roque, Pozo de la Cabecera, 26.VII.1936 *Brachionus plicatilis*	3.65	Artificial hole in amphibole rock; without vegetation; copepods, nauplius larvae. (28–30°C, pH 7.0–7.5).
	Bonaire		
44b	Pos Bronswinkel, Washington, 23.VIII.1955 *Brachionus angularis* *Lecane bulla* *Lecane thalera* *Lepadella patella*	0.56	Overflowing well, partly cemented, crowded with algae, duckweed and grasses. (28–30°C, pH 7.5–8.0) [Pl. VIIIb].
44f	The same, 16.VIII.1973 *Lepadella patella*	0.43	The same; many diatoms, ostracods.
46	Tanki Onima, 13.XI.1936 *Brachionus trahea*	0.04	Muddy pond behind dam, few algae, some grasses. (28–30°C, pH 7.6–8.0) [*Stud. I*, pl. IVb].
48c	Fontein, gutter near spring, 11.IX.1948 *Hexarthra intermedia brasiliensis*	0.43	Cemented gutter with often flowing water, many algae.
48Ac	The same, 7.VIII.1973 *Colurella colurus* *Lecane aculeata* *Lecane closterocerca* *Lepadella patella*	0.40	Many diatoms, Chlorophyceae, nematodes and rhizopods.

STATION	LOCALITY and DATE	SALINITY in g Cl'/l	CHARACTERISTICS
50	Tanki di Nene George, Deenterra, 25.III.1937 *Brachionus calyciflorus* *Euchlanis dilatata* *Lecane cornuta* *Testudinella patina*	0.06	Muddy pond with algae, *Chara*, *Echinodorus* and grasses, *Oscillatoria*. (28–31°C, pH 8.9–9.1) [Pl. VIIIa].
51	Tanki Kerkhof, Kralendijk, 31.III.1937 *Hexarthra intermedia brasiliensis*	0.23	Temporary, muddy cattle pool, almost without vegetation. (28–35°C).
53c	Pos Baca, S of Kralendijk, 16.IX.1948 *Lecane grandis*	2.85	Edge of sink hole with blackish mud, upper part cemented; many algae.
53e	The same, 26.III.1955 *Lepadella persimilis*	0.71	The same.
53g	The same, 4.XII.1963 *Lepadella patella*	0.20	The same, leaf decay of *Cassia*.
60	Pos Lansberg S, Zuidpunt, 26.III.1937 *Lecane harringi* *Lecane inermis* *Lecane nana*	0.37	Muddy puddle in limestone flat, many algae, dead goat. (29–33°C, pH 8.7–8.9).
60b	The same, 21.IX.1948 *Lecane aculeata*	8.86	Puddle wit soft mud, many algae, slightly polluted.
379g	Pos Baca Grandi, S of Kralendijk, 4.XII.1963 *Lecane pyriformis*	0.04	Shallow sink hole with clayish mud, abundant *Chara* and *Heleocharis*.
379h	The same, 15.VIII.1973 *Lecane thalera* *Lecane ungulata*	2.54	Same puddle crowded with *Chara*, etc.; many Cyanophyta, few diatoms and rhizopods.
382	Salinja E of Punt Vierkant, 5.IX.1948 *Lecane nana*	3.81	Temporary sheet of water on limestone flat, few *Conocarpus* trees, small algae, fishes.
805	Tanki South of Sorobon (= Soerebon), 6.XII.1963 *Chromogaster ovalis* *Euchlanis dilatata* *Lecane grandis* *Lecane luna* *Lecane punctata* *Lecane scutata* *Lecane thalera* *Lepadella patella* *Tripleuchlanis plicata*	0.68	Semi-permanent sheet of water on limestone between *Conocarpus*, coating of small algae. [Pl. VIIb].

Station	Locality and Date	Salinity in g Cl′/l	Characteristics
884	Pos di Lac, Bacuna, 10.IX.1967 *Lecane arcuata* *Lecane closterocerca* *Lecane grandis* *Lecane nana* *Lecane thalera*	5.54	Water hole in limestone plateau.
886	Pos Garati S, Bacuna, 10.IX.1967 *Lecane closterocerca* *Tripleuchlanis plicata*	1.74	Water hole in limestone terrace.
887	Pos Garati N, Bacuna, 10.IX.1967 *Brachionus rubens* *Lecane grandis*	2.17	Water hole in limestone terrace.
901a	Pos di Salinja di Cai, 30.X.1968 *Lecane thalera*	2.85	Water hole in limestone flat, slightly polluted by goats.
932a	Washington gate cistern (2), 18.VIII.1973 *Lepadella persimilis*	0.20	Small polluted cistern, waterbloom of *Euglena*, many Ostracoda, some Cladocera.
933	Salinja Mathijs, Washington, 17.III.1970 *Brachionus plicatilis*	—	Semi-permanent pond in mud flat, with *Ruppia*; *Oscillatoria* and *Navicula*. (mesohaline).
	Klein Bonaire		
61	Pos di Cas, 15.XI.1936 *Euchlanis dilatata*	ca 0.40	Sink hole polluted by goat droppings, shady, blackish mud; abundant algae (26–29°C, pH? 8.2–8.4).
63	Tanki Calbas, 15.XI.1936 *Euchlanis parva* *Lecane bulla* *Lecane cornuta* *Lecane luna* *Lecane thalera*	0.12	Semi-permanent pool on limestone plateau with *Chara*, coating of algae. (28–32°C, pH 8.4–8.6) [*Stud. 4*, pl. IIb].
63a	The same, 23.III.1937 *Brachionus angularis*	0.85	The same but smaller in size (28–33°C, pH 8.6–8.8).

STATION	LOCALITY and DATE	SALINITY in g Cl'/l	CHARACTERISTICS
386	Crab hole near Salinja, 7.IX.1948 *Brachionus plicatilis*	1.80	Small puddle in mud, few algae; many diatoms, copepods and nauplius larvae.
	KLEIN CURAÇAO		
64	Pos N of Lighthouse, 29.VIII.1936 *Brachionus plicatilis*	0.53	Muddy hole in limestone with some algae; many copepods and nauplius larvae. (28–33°C, pH 7.9–8.2).
387	Pos N of Lighthouse, 1.X.1948 *Euchlanis dilatata* *Lecane cornuta* *Lecane thalera*	0.73	Muddy hole with considerable growth of algae. [Pl. XIIa].
1047	Pool N of Lighthouse, 1.X.1948 *Brachionus plicatilis* *Lecane aculeata* *Lecane grandis* *Lecane plesia* *Lecane ungulata*	18.0	Part of sheet of water on limestone flat with considerable growth of algae.
	CURAÇAO		
66	Tanki di Cas Klein St. Joris, 6.IX.1936 *Brachionus angularis* *Brachionus plicatilis* *Hexarthra fennica*	1.98	Large muddy pool with plant decay, few algae, Cyanophyta, diatoms, crustacean larvae. (29–34°C, pH 8.5–9.0).
75	Tanki Mamaja, Hato, 6.X.1936 *Colurella colurus* *Testudinella patina*	0.45	Pond at small spring with many algae, *Najas*, some *Chara*, *Echinodorus* and grasses (27–31°C, pH 8.6–8.8).
79c	Bron San Pedro, S., 15.X.1967 *Colurella obtusa*	0.36	Spring at limestone cliff, leaf decay of *Bontia*, few algae. (30°C).
82a	Pos Europa, Dokterstuin, 11.II.1949 *Brachionus angularis*	0.21	Muddy pool with leaf decay, overgrown with *Lemna* (31°C, pH 7.6).

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
87	Bron di Rooi Sánchez, Knip, 11.XI.1936 *Lecane arcuata* *Lecane hummelincki*	2.10	Small pools of percolating water from cherts, brushwood; algae with many rhizopods. (ca 28°C, pH 8.0–8.6) [Pl. X].
88	Pos Sjimarrón, Rooi Beroe, Savonet, 10.XI.1936 *Brachionus plicatilis*	3.50	Small pool of rivulet in cherts, somewhat polluted by goats, algae, often floating, diatoms (ca 28°C, pH 8.0–8.6).
390	Pool of Curaçaosch Museum, garden, Mundo Nobo, 25.IV.1949 *Brachionus patulus* *Colurella adriatica* *Euchlanis dilatata* *Euchlania lyra* *Lecane aculeata* *Lecane cornuta* *Lecane thalera* *Lepadella patella* *Testudinella patina* *Trichocerca brachyura*	0.73	Two months old basin of brick work, tap water with several phanerogams. (pH 8.2) [cf. Pl. IXb].
396d	Tanki di Tera Corá, Midden Curaçao, 2.III.1955 *Testudinella patina*	0.17	Temporary muddy pool, slimy algae, single *Chara*, polluted by ducks. (31°C).
297d	Tanki Martha-Koosje, Kleine Berg, 15.IV.1949 *Lecane cornuta* *Lecane harringi* *Lecane inermis* *Lecane nana* *Tripleuchlanis plicata*	0.51	Semi-permanent pool with dense growth of *Najas* and algae, *Echinodorus*, Cyanophyta. (pH ca 9.0).
822	Punta Tera, trough at pos NE of Seinpost, Fuik, 27.X.1963 *Lecane aculeata* *Lecane nana*	0.80	Cemented trough near deep well, some muddy decay.
914a	Pos da Costa, Klein St. Joris, 22.II.1970 *Lecane crenata*	2.30	Trough near well in limestone terrace.

STATION	LOCALITY and DATE	SALINITY in g Cl'/l	CHARACTERISTICS
944	Tanki di Molino, St. Kruis, 20.II.1970 *Colurella anodonta* *Lecane thalera* *Lepadella imbricata* *Lepadella persimilis*	1.90	Swampy area with pools. [Pl. IXa].
1477	Piscadera Baai, central part of inner bay, 3rd buoy, 31.X.1963 *Colurella althausae* *Lepadella acuminata*	—	From buoy, covered with sponges, ascidians, actinians, etc.
1493	Piscadera Baai, NW part, Piscadera Chikitu, 25.XI.1963 *Lepadella acuminata*	—	*Rhizophora* in muddy sand.
1504	St. Marie Baai, pool at seepage near entrance, 22.XII.1963 *Colurella colurus*	20.5	Coral debris, flaps of algae, single *Sargassum*.
s.n.	Groot St. Joris, gutter of cistern (V. H. van den Bergh coll.), 26.VII.1931 *Lecane aculeata* *Lecane inermis* *Lecane nana* *Lecane scutata*	ca 0.8	
	ARUBA		
96	Tanki Chikitoe, W of Rooi Lamoenchi, 12.II.1937 *Brachionus plicatilis*	1.57	Sink hole with clayish mud, temporary, few often floating algae. (27–35°C, pH 9.0–9.4).
97	Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936 *Brachionus quadridentatus* *Euchlanis dilatata* *Euchlanis lyra* *Hexarthra fennica* *Lecane luna* *Polyarthra vulgaris* *Testudinella patina* *Trichocerca similis* *Tripleuchlanis plicata*	0.06	Temporary pond dug in diorite detritus, decay of *Prosopis* leaves, algae, *Hyalinella* colonies. (27–32°C, pH 8.8–9.3) [*Stud. 2*, pl. IVa].

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
98	Tanki di Hofje Westpunt, 9.XII.1936 *Testudinella patina*	0.08	Temporary sheet of water on mud flat with *Coccoloba* trees, many filamentous green algae, tiny diatoms, abundant *Vorticella*, ostracods. (28–34°C, pH 8.0–8.5) [Pl. XIb].
99	Tanki di Goudmijn Tibusji, 9.XII.1936 *Brachionus quadridentatus* *Euchlanis dilatata* *Lecane luna* *Testudinella patina*	0.17	Temporary pool in non-calcareous detritus, few *Chara*, very few algae. (27–33°C, pH 8.5–9.0).
100	Tanki Leendert, 16.XII.1936 *Brachionus angularis* *Hexarthra intermedia brasiliensis*	0.04	Semi-permanent pond dug in diorite detritus, few algae, grasses. (26–30°C, pH 8.0–9.0?).
102A	Bron di Pos di Noord, 30.XII.1936 *Lecane grandis* *Lecane nana* *Lecane thalera* *Lecane ungulata*	3.25	Pools near small spring in diorite, algae. (27–30°C, pH 8.5–8.8).
103B	Rooi Bringamosa, 5.XI.1963 *Lecane closterocerca* *Lecane luna*	6.08	Pool near spring in diorite rock with algae. [cf. *Stud. 1*, pl. VIb].
104	Bron di Rooi Prins, 9.I.1937 *Lecane cornuta* *Lecane grandis*	1.30	Pool near small spring in rock debris, almost no vegetation (29°C?, pH 7.5–7.7) [*Stud. 4*, pl. VIb].
403	Tanki di Rooi Kabaai, SSW of Mira la Mar, 28.XII.1948 *Brachionus rubens*	1.86	Temporary pool excavated in non-calcareous rock debris, thin coating of algae.
638	Eagle Colony pool, 27.IV.1955 *Lecane closterocerca* *Lecane thalera*	1.72	Cemented pool in garden, crowded with phanerogams, few algae.

Station	Locality and Date	Salinity in g Cl'/l	Characteristics
640	Rooi Andicuri, 11.V.1955 *Asplanchna brightwelli* *Lecane cornuta* *Lecane grandis* *Lecane nana* *Lecane thalera*	3.13	Semi-permanent pools in volcanic rock detritus, near small spring, some algae, *Enteromorpha*. [Pl. XIa].
1012	Salinja of San José, Palm Beach, 3.I.1949 *Lecane grandis* *Lecane thalera*	ca 15.0	Temporary sheet of water on limestone, mudflat with *Ruppia*, *Oedogonium*, many diatoms, copepods and nauplius larvae.
1013a	Salinja Balashi, 1.V.1955 *Brachionus rubens* *Colurella colurus* *Euchlanis perpusilla* *Lecane harringi* *Lecane nana* *Lecane thalera* *Lecane ungulata* *Lepadella patella* *Tripleuchlanis plicata*	45.0	Salty mudflat with pools, many Cyanophyta and diatoms.
s.n.	Rooi Hoeba, 26.V.1967 *Lecane inermis* *Lecane luna* *Lecane pyriformis* *Lecane scutata* *Lecane styrax* *Lecane thalera* *Lepadella patella*		
	La Goajira (Colombian mainland)		
112	Poza del Cabo de la Vela, 22.I.1937 *Asplanchna brightwelli* *Brachionus angularis* *Brachionus calyciflorus*	0.07	Probably permanent small well in limestone and debris, some algae. (28–31°C) [Pl. XIIb].
114	Laguna del Pájaro, S of El Pájaro, 21.I.1937 *Brachionus angularis* *Brachionus calyciflorus* *Brachionus trahea* *Filinia longiseta* *Lecane bulla*	0.82	Large natural pond, few algae with *Chara* and *Najas*, grasses. (26–32°C).

STATION	LOCALITY and DATE	SALINITY in g Cl'/l	CHARACTERISTICS
s.n.	Laguna de la Rita, N of Río Hacha, 18.I.1937 *Brachionus rubens*	—	Polyhaline lake in swampy area.
	PARAGUANÁ (Venezuelan mainland)		
106	Poza de San Antonio, E of Carirubana, 16.II.1937 *Brachionus havanaensis* *Testudinella patina* *Tripleuchlanis plicata*	0.17	Semi-permanent cattle pool, muddy, some leaf decay, few algae. (28–34°C, pH 7.9–8.3).
107	Poza Supideo, E of Carirubana, 16.II.1937 *Hexarthra intermedia brasiliensis*	0.19	Semi-permanent cattle pond, muddy, few algae, *Najas*. (28–33°C, pH 7.9–8.3).
108	Estanque de Moruy, 18.II.1937 *Brachionus havanaensis*	0.05	Large permanent pond with some *Chara* and *Najas*. (28–31°C, pH 8.7–8.9).
110	Estanque de Santa Ana, 16.II.1937 *Brachionus havanaensis* *Polyarthra vulgaris*	0.11	Large permanent pond with *Najas*. (28–31°C, pH 8.2–8.4) [*Stud. I*, pl. VIIb].

SPECIES, LOCALITIES AND FREQUENCY

1. **Ascomorpha saltans** Bartsch, 1870

ST. EUSTATIUS. Sta. 506a, Manahega Well, Downtown, 8.X.1936: C. — 507, Twin Cisterns, Downtown, 7.VII.1949: R. — 515a, Spout Well trough, Concordia, 10.X.1963: CCC.
MARGARITA. Sta. 23, Río Asunción, 11.V.1936: RR.

2. **Asplanchna brightwelli** Gosse, 1850

MARTINIQUE. Sta. 771, Ilet Hardy, 11.II.1964: R.
ARUBA. Sta. 640, Rooi Andicuri, 11.V.1944: RR.
LA GOAJIRA. Sta. 112, Pozo del Cabo de la Vela, 22.I.1937: C.

3. **Brachionus angularis** Gosse, 1851

ST. MARTIN. Sta. 679c, Bloomingdale Cistern, 21.VI.1973: RR. — 093, Slob of Norman, E of Grand'Case, 22.VI.1973: RRR.
MARGARITA. Sta. 12, Poza Baranca, Macanao, 20.V.1936: C.
BLANQUILLA. Sta. 38, Poza de Aguada, 22.VII.1936: CCC.
BONAIRE. Sta. 44b, Pos Bronswinkel, Washington, 23.VIII.1955: C.
KLEIN BONAIRE. Sta. 63a, Tanki Calbas, 23.III.1937: C.
CURAÇAO. Sta. 66, Tanki di Cas Klein St. Joris, 6.IX.1936: C. — 82a, Pos Europa, Dokterstuin, 11.II.1949: RR.
ARUBA. Sta. 100, Tanki Leendert, 16.XII.1936: C.
LA GOAJIRA. Sta. 112, Pozo del Cabo de la Vela, 11.I.1937: CCC. — 114, Laguna del Pájaro, 21.I.1937: RR.

4. **Brachionus calyciflorus** Pallas, 1766

ST. MARTIN. Sta. 679c, Bloomingdale Cistern, 21.VI.1973: RR.
ILES DES SAINTES. Sta. 760, Terre de Haut, mare haute, 6.II.1964: RR.
MARGARITA. Río del Valle near Porlamar, 13.V.1936: RRR.
BONAIRE. Sta. 50, Tanki di Nene George, Entrejol, 25.III.1937: CCC.
LA GOAJIRA. Sta. 112, Pozo del Cabo de la Vela, 11.I.1937: C. — 114, Laguna del Pájaro, 21.I.1937: RR.

5. **Brachionus havanaensis** Rousselet, 1911

PARAGUANÁ. Sta. 106, Poza de San Antonio, Carirubana, 16.II.1937: CCC. — 108, Estanque de Moruy, 18.II.1937: CCC. — 110, Estanque de Santa Ana, 16.II.1937: R.

6. **Brachionus patulus** (O. F. Müller, 1786)

CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, Mundo Nobo, 25.IV.1949: R.

7. **Brachionus plicatilis** O. F. Müller, 1786

GRAND CAYMAN. Sta. 1691, Colliers Pond, *Avicennia* swamp, 25.V.1973: R.
CAYMAN BRAC. Sta. 1702, South East Bay lagoon, 3.VI.1973: RR.
ST. MARTIN. Sta. 1134, Trough on SE shore Great Saltpond, 19.V.1949: RRR. — 1140, Saline de Grand'Case, 20.V.1949: R.
MARGARITA. Sta. 12, Poza Baranca, Macanao, 20.V.1936: CCC.
BLANQUILLA. Sta. 38, Poza de Aguada, 22.VII.1936: CC.
LOS ROQUES. Sta. 42, Pozo de la Cabecera, Gran Roque, 26.VII.1936: RR.
BONAIRE. Sta. 933, Salinja Mathijs, 17.III.1970: C.
KLEIN BONAIRE. Sta. 386, Crab-hole at Salinja Ariba, 7.IX.1948: R.

KLEIN CURAÇAO. Sta. 64, Pos N of Lighthouse, 29.VIII.1936: CCC. — 1047, Salty pool, 1.X.1948: CCC.
CURAÇAO. Sta. 66, Tanki di Cas Klein St. Joris, 6.IX.1936: CCC. — 88, Bron di Rooi Beroe, 10.XI.1936: RR.
ARUBA. Sta. 96, Tanki Chikitoe, SE Spaans Lagoen, 12.II.1937: CCC.

8. **Brachionus quadridentatus** Hermann, 1783

ST. MARTIN. Sta. 529, Old Battery cistern, SE of Philipsburg, 18.V.1949: CC. — 097, Slob of Welgelegen, 22.VII.1973: C.
ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: RRR. — 99 Tanki di Goudmijn Tibusji, 9.XII.1936: CCC.

9. **Brachionus rubens** Ehrenberg, 1838

ST. MARTIN. Sta. 094, Slob of Belvédère, 20.VII.1973: RR.
BARBUDA. Sta. 675, Pool at Warden's house, 5.VII.1955: CCC. — 676, Another pool at Warden's, 5.VII.1955: CCC.
BONAIRE. Sta. 887, Pos Garati N, Bacuna, 10.IX.1967: RR.
ARUBA. Sta. 403, Tanki di Rooi Kabaai, 28.XII.1948: RR. — 1013a, Salinja Balashi, 1.V.1955: RR.
LA GOAJIRA. Laguna de la Rita, near Río Hacha, 18.I.1937: RRR.

10. **Brachionus trahea** Murray, 1913

ST. MARTIN. Sta. 461, Old Battery, E of Great Bay, leaf decay, 18.V.1949: RRR.
BONAIRE. Sta. 46, Tanki Onima, 13.XI.1936: RRR.
LA GOAJIRA. Sta. 114, Laguna del Pájaro, 21.I.1937: RR.

11. **Chromogaster ovalis** (Bergendal, 1892)

BONAIRE. Sta. 805, Tanki S of Sorobon, 6.XII.1963: RR.

12. **Colurella adriatica** Ehrenberg, 1831

ST. MARTIN. Sta. 679c, Bloomingdale Cistern, 21.VI.1973: RRR.
GRENADA. Sta. 659, Well of Calliste, Point Salines, 23.I.1955: RR.
CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, Mundo Nobo, 25.IV.1949: RRR.

13. **Colurella althausae** n. sp.

CURAÇAO. Sta. 1477, Piscadera Bay, central inner part, 3rd buoy, 31.X.1963: C.

14. **Colurella anodonta** Carlin, 1939

JAMAICA. Sta. 029, pool of Campus U.W.I., Mona, 13.V.1973: R.
MONTSERRAT. Sta. 841, Agricultural Department Gardens basin, 20.VII.1967: RR.
GRENADA: Sta. 659, Well of Calliste, Point Salines, 23.I.1955: RR.
CURAÇAO. Sta. 944, Tanki di Molino, St. Kruis, 20.II.1970: R.

15. **Colurella colurus** (Ehrenberg, 1830)

GRAND CAYMAN. Sta. 980, Well W of Walkers Road, 10.VI.1973: RR.
ANGUILLA. Sta. 055, Badcox Pond seepage, W of Gauls Pond, 1.VII.1973: C. — 055A, Badcox Pond, 1.VII.1973: RR.
ST. MARTIN. Sta. 1134, Trough on SE shore Great Saltpond, 19.V.1949: R.
ST. EUSTATIUS. Sta. 0120, Concordia Bay Well, 11.VII.1973: RRR.
MARTINIQUE. Sta. 770, Ruisseau de la Pagerie, 10.II.1964: R.
BARBADOS. Sta. 784, Joe's River at Frizers, 16.II.1964: RRR.
BONAIRE. Sta. 48Ac, Fontein, gutter, 7.VIII.1973: RR.
CURAÇAO. Sta. 75, Tanki Mamaja, Hato, 6.X.1936: RRR. — 1504, St. Marie Baai seepage, 22.XII.1963: RR.
ARUBA. Sta. 1013a, Salinja Balashi, 1.V.1955: C.

16. **Colurella obtusa** (Gosse, 1886)

GRAND CAYMAN. Sta. 982, Pool NE of Breakers, 27.V.1973: RR.
MONTSERRAT. Sta. 839, Belham River, 20.VII.1967: RR.
ILES DES SAINTES. Sta. 759, Terre de Haut, mare basse, 6.II.1964: RR.
MARTINIQUE. Sta. 770, Ruisseau de la Pagerie, 10.II.1964: RRR.
CURAÇAO. Sta. 79c, Bron San Pedro S, 15.X.1967: RR.

17. **Euchlanis dilatata** Ehrenberg, 1832

NEW PROVIDENCE. Sta. 547, Trench at Pall's Waterworks, 23.VIII.1949: RRR.
ILES DES SAINTES. Sta. 759, Terre de Haut, mare basse, 6.II.1964: RR.
MARTINIQUE. Sta. 770, Ruisseau de la Pagerie, 10.II.1964: RRR.
BONAIRE. Sta. 50, Tanki di Nene George, Deenterra, 25.III.1937: CCC. — 805, Tanki S of Sorobon, 6.XII.1963: R.
KLEIN BONAIRE. Sta. 61, Pos di Cas, 15.XI.1936: C.
KLEIN CURAÇAO. Sta. 387, Pos N of lighthouse, 1.X.1948: RR.
CURAÇAO. Sta. 390, Pool at Curaçaosch Museum, Mundo Nobo, 25.IV.1949: RR.
ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: RRR. — 99 Tanki di Goudmijn Tibushi, 9.XII.1936: RR.

18. **Euchlanis lyra** Hudson, 1886

CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, Mundo Nobo, 25.IV.1949: RR.
ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: RR.

19. **Euchlanis parva** Rousselet, 1892

KLEIN BONAIRE. Sta. 63, Tanki Calbas, 15.XI.1936: R.

20. **Euchlanis perpusilla** sp. n.

ARUBA. Sta. 1013a, Salinja Balashi, 1.V.1955: R.

21. **Filinia longiseta** (Ehrenberg, 1834)

LA GOAJIRA. Sta. 114, Laguna del Pájaro, 21.I.1937: RRR.

22. **Hexarthra fennica** (Levander, 1892)

BLANQUILLA. Sta. 38, Poza de Aguada, 22.VII.1936: RR.
CURAÇAO. Sta. 66, Tanki di Cas Klein St. Joris, 6.IX.1936: CC.
ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: C.

23. **Hexarthra intermedia brasiliensis** Koste, 1972

BONAIRE. Sta. 48c, Bron Fontein, 11.XI.1948: RR. — 51, Tanki Kerkhof, Kralendijk, 31.III.1937: C.
ARUBA. Sta. 100, Tanki Leendert, 16.XII.1936: RR.
PARAGUANÁ. Sta. 107, Pozo Supideo, E of Carirubana, 16.II.1937: RRR.

24. **Keratella procurva** (Thorpe, 1891)

ST. MARTIN. Sta. 094, Slob of Belvédère, 20.VII.1973: RR.

25. **Lecane aculeata** Jakubski, 1912

SOUTH BIMINI. Sta. 549, Fountain of Youth, 20.VIII.1949: RR.
NEW PROVIDENCE. Sta. 548, Archbold's Pond near Nassau, 23.VIII.1949: RR.
JAMAICA. Sta. 024, The Flashes near Great Saltpond, 8.V.1973: RR. — 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RRR.
ANGUILLA. Sta. 544, Bedney's Spring, 18.VI.1949: RR.
ILES DES SAINTES. Sta. 759, Terre-de-Haut, mare basse, 6.II.1964: RRR.
BONAIRE. Sta. 48Ac, Gutter of Fontein, 7.VIII.1973: RRR. — 60b, Pos Lansberg, 21.IX.1948: CC.
KLEIN CURAÇAO. Sta. 1047, Pos N of lighthouse, 1.X.1948: RR.
CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, 25.IV.1949: RR. — 822, Pos E of Seinpost, 27.X.1963: R. — Groot St. Joris, 26.VII.1931: RR.

26. **Lecane arcuata** (Bryce, 1892)

FLORIDA KEYS. Sta. 694, Key Biscayne, Pond near Harbor Drive, 9.IX.1963: RRR.
JAMAICA. Sta. 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RR.
ILES DES SAINTES. Sta. 759, Terre de Haut, mare basse, 6.II.1964: RR.
GRENADA. Sta. 659, Well of Calliste, Point Salines, 23.I.1955: CC.
MARGARITA. Sta. 23, Río Asunción, 11.V.1936: C. — 797, Punta Mosquito, 13.I.1964: RR.
BONAIRE. Sta. 884, Pos di Lac, Bacuna, 10.IX.1967: RRR.
CURAÇAO. Sta. 87, Bron di Rooi Sánchez, 11.XI.1936: RR.

27. **Lecane bulla** (Gosse, 1886)

PUERTO RICO. Sta. 708, Río Guánica, digue, 15.IX.1963: RR.
ILES DES SAINTES. Sta. 760, Terre de Haut, mare haute, 6.II.1964: C.
MARTINIQUE. Sta. 767, Fossé du Baie de Tartane, 9.II.1964: RRR.
GRENADA. Sta. 659. Well of Calliste, Point Salines, 23.I.1955: RRR.
BONAIRE. Sta. 44b, Pos Bronswinkel, Washington, 23.VIII.1955: RR.
KLEIN BONAIRE. Sta. 63, Tanki Calbas, 15.XI.1936: RRR.
LA GOAJIRA. Sta. 114, Laguna del Pájaro, 21.I.1937: RRR.

28. **Lecane closterocerca** (Schmarda, 1859)

ST. MARTIN. Sta. 529, Old Battery Cistern, SE of Philipsburg, 18.V.1949: RR. — 098, Pool of Mornes Rouges, Terres Basses, 23.VI.1973: RR. — 1134, Trough on SE shore Great Saltpond, 19.V.1949: R.
ST. EUSTATIUS. Sta. 0120, Concordia Bay Well, 11.VII.1973: RR.
ILES DES SAINTES. Sta. 759, Terre de Haut, mare basse, 6.II.1964: R.
GRENADA. Sta. 659, Well of Calliste, Point Salines, 23.I.1955: CCC.
MARGARITA. Sta. 23, Río Asunción, 11.V.1936: RR.
BONAIRE. Sta. 48Ac, Fontein, gutter, 7.VIII.1973: RRR. — 884, Pos di Lac, Bacuna, 10.IX.1967: CCC. — 886, Pos Garati S, Bacuna, 10.XI.1967: CCC.
ARUBA. Sta. 103c, Bron di Rooi Bringamosa, 5.XI.1963: RRR. — 638, Eagle Colony garden pool, 27.IV.1955: R.

29. **Lecane cornuta** (O. F. Müller, 1786)

CAYMAN BRAC. Sta. 007, Deep Well of Lonely Hill, Spot Bay, 29.V.1973: R.
ST. CROIX. Sta. 684, Trough at Canaän, 10.VI.1955: RR.
ST. MARTIN. Sta. 1134, Trough on SE shore Great Saltpond, 19.V.1949: RRR.
SABA. Sta. 517, Well of Spring Bay, 28.VII.1949: CCC.
MARGARITA. Sta. 797, Punta Mosquito, 13.I.1964: RRR.
BONAIRE. Sta. 50, Tanki di Nene George, Deenterra, 25.III.1937: RRR.
KLEIN BONAIRE. Sta. 63, Tanki Calbas, 15.XI.1936: RRR.
KLEIN CURAÇAO. Sta. 387, Pos N. of Lighthouse, 1.X.1948: RR.
CURAÇAO. Sta. 397d, Tanki Martha-Koosje, Kleine Berg, 15.IV.1949: RR. — 390, Pool of Curaçaosch Museum, 25.IV.1949: CC.

ARUBA. Sta. 104, Bron di Rooi Prins, 9.I.1937: RR. — 640, Rooi Andicuri, 11.V. 1944: RR.

30. **Lecane crenata** (Harring, 1913)

CURAÇAO. Sta. 914a, Pos da Costa, Klein St. Joris, 22.II.1970: RR.

31. **Lecane flexilis** (Gosse, 1889)

GRAND CAYMAN. Sta. 983. Water hole near North East Point, 25.V.1973: RR.

32. **Lecane furcata** (Murray, 1913)

ST. MARTIN. Sta. 542d, Devils Hole Swamp, 28.VI.1973: RR.

33. **Lecane grandis** (Murray, 1913)

GRAND CAYMAN. Sta. 979, Water Ground, 18.V.1973: RR. — 980, Well at Walkers Road, 10.VI.1973: RR.
CAYMAN BRAC. Sta. 1702, South East Bay lagoon, 3.VI.1973: RR.
ST. MARTIN. Sta. 1134, Trough on SE shore Great Saltpond, 19.V.1949: R.
ST. BARTS. Sta. 1123, Grande Saline, pool, 3.VI.1949: RR.
BONAIRE. Sta. 53c, Pos Baca, S of Kralendijk, 16.IX.1948: RR. — 805, Tanki S of Sorobon, 6.XII.1963: RR. — 884, Pos di Lac, Bacuna, 10.IX.1967: RRR. — 887, Pos Garati N, Bacuna, 10.IX.1967: RR.
KLEIN CURAÇAO. Sta. 1047, Pos N of lighthouse, 1.X.1948: RR.
ARUBA. Sta. 102, Bron di Pos di Noord, 30.XII.1936: RR. — 104, Bron di Rooi Prins, 9.I.1937: RR. — 640, Rooi Andicuri, 11.V.1944: RR. — 1012, Salinja near Palm Beach, 3.I.1949: C.

34. **Lecane harringi** (Ahlstrom, 1934)

GRAND CAYMAN. Sta. 979, Water Ground, 18.V.1973: CC.
ST. MARTIN. Sta. 1134, Trough on SE shore Great Saltpond, 19.V.1949: RR.
TINTAMARRE. Sta. 526, Flat Island Well, 20.VI.1949: RR.
ST. EUSTATIUS. Sta. 0120, Concordia Bay Well, 11.VII.1973: R.
BONAIRE. Sta. 60, Pos Lansberg S, Zuidpunt, 26.III.1937: CC.
CURAÇAO. Sta. 397d, Tanki Martha Koosje near Kleine Berg, 15.IV.1949: R.
ARUBA. Sta. 1013a, Salinja Balashi, 1.V.1955: R.

35. **Lecane hornemanni** (Ehrenberg, 1838)

JAMAICA. Sta. 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: R.

36. **Lecane hummelincki**, sp. n.

CURAÇAO. Sta. 87, Bron di Rooi Sánchez, Knip, 11.XI.1936: C.

37. **Lecane inermis** (Bryce, 1892)

JAMAICA. Sta. 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RR.
ST. MARTIN. Sta. 542d, Devils Hole Swamp, 28.VI.1973: RR. — 679c, Bloomingdale Cistern, 21.VI.1973: C.
MONTSERRAT. Sta. 839, Belham River, 20.VII.1967: R. — 841, Agric. Dept. Gardens basin, 20.VII.1967: R.
BONAIRE. Sta. 60, Pos Lansberg S, Zuidpunt, 26.III.1937: C.
CURAÇAO. Groot St. Joris, 26.VII.1931: R.
ARUBA. Rooi Hoeba, 26.V.1967: RRR.

38. **Lecane luna** (O. F. Müller, 1776)

JAMAICA. Sta. 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RRR.
ANGUILLA. Sta. 055A, Badcox Pond, spring, 1.VII.1973: RRR.
BONAIRE. Sta. 805, Tanki S of Sorobon, 6.XII.1963: RRR.
KLEIN BONAIRE. Sta. 63, Tanki Calbas, 15.XI.1936: C.
ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: R. — 99, Tanki di Goudmijn Tibushi, 9.XII.1936: C. — 103b, Bron di Rooi Bringamosa, pool, 5.XI.1963: RRR. — Rooi Hoeba, 26.V.1967: RR.

39. **Lecane lunaris** (Ehrenberg, 1832)

ST. CROIX. Sta. 684, Trough at Canaän, 10.VI.1955: RR.

40. **Lecane nana** (Murray, 1913)

GRAND CAYMAN. Sta. 979. Water Ground, 18.V.1973: RR. — 983, Water hole near North East Point, 25.V.1973: RRR.
JAMAICA. Sta. 024, The Flashes near Great Saltpond, 8.V.1973: RR. — 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RR.
ST. MARTIN. Sta. 679c, Bloomingdale Cistern, 21.VI.1973: RR.
MARIE-GALANTE. Sta. 756, Rivière de St. Louis, Sources, 1.II.1964: R.
BONAIRE. Sta. 60, Pos Lansberg, S, 26.III.1937: RR. — 382, Salinja Punt Vierkant, 5.IX.1948: RR. — 884, Pos di Lac, Bacuna, 10.IX.1967: RR.
CURAÇAO. Sta. 397d, Tanki Martha-Koosje, Kleine Berg, 15.IV.1949: RR. — 822, Pos E of Seinpost, 27.X.1963: C. — Groot St. Joris, 26.VII.1931: CCC.
ARUBA. Sta. 102, Bron di Pos di Noord, 30.XII.1936: R. — 640, Rooi Andicuri, 11.V.1944: R. — 1013a, Salinja Balashi, 1.V.1955: RRR.

41. **Lecane obtusa** (Murray, 1913)

GRAND CAYMAN. Sta. 979, Water Ground, 18.V.1973: R.
MARIE-GALANTE. Sta. 751, Rivière du Vieux Fort, embouchure, 31.I.1964: R.

42. **Lecane papuana** (Murray 1913),

ILES DES SAINTES. Sta. 760, Terre de Haut, mare basse, 6.II.1964: CC.
MARGARITA. Sta. 18, Laguna Honda SE of Juan Griego, 16.V.1936: C.

43. **Lecane plesia** Myers, 1936

GRAND CAYMAN. Sta. 1691, Colliers Pond, 25.VIII.1973: C.
KLEIN CURAÇAO. Sta. 1047, Pos N of lighthouse, 1.X.1948: CC.

44. **Lecane punctata** (Murray, 1913)

BONAIRE. Sta. 805, Tanki S of Sorobon, 6.XII.1963: RR.

45. **Lecane pyriformis** (Daday, 1905)

BONAIRE. Sta. 48Ac, Fontein, gutter of cistern, 7.VIII.1973: RRR. — 379g, Pos Baca Grandi, S of Kralendijk, 4.XII.1963: RR.
ARUBA. Rooi Hoeba, 26.V.1967: R.

46. **Lecane quadridentata** (Ehrenberg, 1832)

DOMINICA. Sta. 848. Rupert canal, NW Portsmouth, 15.VII.1967: RR.

47. **Lecane scutata** Harring & Myers, 1926

NEW PROVIDENCE. Sta. 547, Trench at Pall's Waterworks, 23.VIII.1949: RRR.
BONAIRE. Sta. 805, Tanki S of Sorobon, 6.XII.1963: RRR.
CURAÇAO. Groot St. Joris, 26.VII.1931: RR.
ARUBA. Rooi Hoeba, 26.V.1967: RR.

48. **Lecane styrax** Harring & Myers, 1926

ARUBA. Rooi Hoeba, 26.V.1967: CCC.

49. **Lecane tenuiseta** Harring, 1914

FLORIDA KEYS. Sta. 694, Key Biscayne, Pond near Harbor Drive, 9.IX.1963: RR.

50. **Lecane thalera** Harring & Myers, 1926

ST. MARTIN. Sta. 679c, Bloomingdale Cistern, 21.VI.1973: C.
BONAIRE. Sta. 44b, Pos Bronswinkel, 23.VIII.1955: RR. — 805, Tanki S of Sorobon, 6.XII.1963: RR. — 884, Pos di Lac, Bacuna, 10.IX.1967: RR. — 901a, Pos di Salinja di Cai, 30.X.1968: RRR. — 379h, Pos Baca Grandi, 15.VIII.1973: RR.
KLEIN BONAIRE. Sta. 63, Tanki Calbas, 15.XI.1936: CC.
KLEIN CURAÇAO. Sta. 387, Pos N of lighthouse, 1.X.1948: RR.
CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, Mundo Nobo, 25.IV.1949: CC. — 944, Tanki di Molino, St. Kruis, 20.II.1970: C.
ARUBA. Sta. 102, Bron di Pos di Noord, 30.XII.1936: RRR. — 638, Garden pool of Eagle Colony, 27.IV.1955: RR. — 640, Rooi Andicuri, 11.V.1944: R. — 1012, Salinja near Palm Beach, 3.I.1949: R. — 1013a, Salinja Balashi, 1.V.1955: C. — Rooi Hoeba, 26.V.1967: RR.

51. **Lecane ungulata** (Gosse, 1887)

ILES DES SAINTES. Sta. 760, Terre de Haut, mare haute, 6.II.1964: RR.
BONAIRE. Sta. 379h, Pos Baca Grandi, S of Kralendijk, 15.VIII.1973: RR.
KLEIN CURAÇAO. Sta. 1047, Pos N of lighthouse, 1.X.1948: RR.
ARUBA. Sta. 102, Bron di Pos di Noord, 30.XII.1936: R. — 1013a, Salinja Balashi, 1.V.1955: RRR.

52. **Lepadella acuminata** (Ehrenberg, 1834)

CURAÇAO. Sta. 1477, Piscadera Baai, inner bay, central part, buoy, 31.X.1963: RRR. — 1493, Piscadera Baai, inner bay, NW inlet 25.XI.1963: RR.

53. **Lepadella imbricata** Harring, 1913

CURAÇAO. Sta. 944, Tanki di Molino, St. Kruis, 20.II.1970: RRR.

54. **Lepadella ovalis** (O. F. Müller, 1786)

CAYMAN BRAC. Sta. 007, Deep well of Lonely Hill, Spot Bay, 29.V.1973: RR.

55. **Lepadella patella** (O. F. Müller, 1786)

JAMAICA. Sta. 029, Pool near Chapel of U.W.I., Mona, 13.V.1973: RR.
ST. MARTIN. Sta. 095, Spring Garden pool, Prince's Quarter, 20.VI.1973: RR. — 097, Slob of Welgelegen, 22.VII.1973: C.
TINTAMARRE. Sta. 0104, Small cistern, 15.VII.1973: CC.
MARTINIQUE. Sta. 768, Rivière Monsieur, 9.II.1964: RR.
GRENADA. Sta. 659, Well of Calliste, Point Salines, 23.I.1955: RR.

BONAIRE. Sta. 44b, Pos Bronswinkel, 23.VIII.1955: RR. — 44f, Pos Bronswinkel, 10.VIII.1973: RR. — 48Ac, Fontein, gutter, 7.VIII.1973: RRR. — 53g, Pos Baca, 16.IX.1948: RR. — 805, Tanki S of Sorobon, 6.XII.1963: RRR.
CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, 25.IV.1949: RRR.
ARUBA. Sta. 1013a, Salinja Balashi, 1.V.1955: RRR. — Rooi Hoeba, 26.V.1967: RRR.

56. **Lepadella persimilis** De Ridder, 1960

BONAIRE. Sta. 53e, Pos Baca, 26.III.1955: RR. — 932a, Gate cistern of Washington, 18.VIII.1973: C.
CURAÇAO. Sta. 944, Tanki di Molino St. Kruis, 20.II.1970: R.

57. **Mytilina mucronata** (O. F. Müller, 1773)

MONTSERRAT. Sta. 841, Agric. Dept. Gardens basin, Plymouth, 20.VII.1967: RRR.

58. **Polyarthra remata** Skorikov, 1896

MARGARITA. Sta. 24, Poza al Sur de Los Robles, 27.V.1936: RR.

59. **Polyarthra vulgaris** Carlin, 1943

ARUBA. Sta. 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: RR.
PARAGUANÁ. Sta. 110, Estanque de Santa Ana, 16.II.1937: R.

60. **Testudinella patina** (Hermann, 1783)

ILES DES SAINTES. Sta. 759, Terre de Haut, mare basse, 6.II.1964: RR.
GRENADA. Sta. 659, Well of Calliste, Point Salines, 23.I.1955: RR.
BONAIRE. Sta. 50, Tanki di Nene George, Deenterra, 25.III.1937: RRR.
CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, 25. IV. 1949: RR. — 75, Tanki Mamaja, Hato, 6.X.1936: R. — 396 d, Tanki di Tera Cora, 2.III.1955: RR.
ARUBA. Sta. 98, Tanki di Hofje Westpunt, 9.XII.1936: RRR. — 97, Tanki Mon Plaisir, E of Oranjestad, 15.XII.1936: C. — 99, Tanki di Goudmijn Tibushi, 9.XII.1936: C.
PARAGUANÁ. Sta. 106, Pozo de San Antonio near Carirubana, 16.II.1937: R.

61. **Trichocerca brachyura** (Gosse, 1851)

CURAÇAO. Sta. 390, Pool of Curaçaosch Museum, 25.IV.1949: RR.

62. **Trichocerca similis** (Wierzejski, 1893)

ARUBA. Sta. 97, Tanki Mon Plaisir, 15.XII.1936: R.

63. **Trichocerca tigris** (O. F. Müller, 1786)

ILES DES SAINTES. Sta. 760, Terre de Haut, mare haute, 6.II.1964: RR.

64. **Tripleuchlanis plicata** (Levander, 1894)

GRAND CAYMAN. Sta. 1691, Colliers Pond, 25.V.1973: CC.
ST. MARTIN. Sta. 542d, Devils Hole Swamp, 28.VI.1973: RRR. — 679c, Bloomingdale Cistern, 21.VI.1973: RRR. — 1134, Trough on SE shore of Great Saltpond, 19.V.1949: R.
ST. BARTS. Sta. 1122, Grande Saline, pool, 3.VI.1949: RR.
BONAIRE. Sta. 805, Tanki S of Sorobon, 6.XII.1963: C. — 886, Pos Garati S, Bacuna, 10.IX.1967: R.
CURAÇAO. Sta. 297d, Tanki Martha-Koosje near Kleine Berg, 15.IV.1949: RR.
ARUBA. Sta. 97, Tanki Mon Plaisir, 15.XII.1936: RR. — 1013a, Salinja Balashi, 1.V.1955: R.

ZOOGEOGRAPHICAL CONSIDERATIONS

Though the number of samples may be called considerable, they are scattered over such a large and diversified territory, including such a great number of different habitats, that it must be obvious that the results of this study do not pretent to produce a representative picture of the Rotifer-population of the Caribbean Islands – even not of those which yielded ten species or more (see Table 2). Consequently little can be said from a zoogeographical point of view, so far, without further study.

1) Most of the species (see Table 2) have no zoogeographical signification, but occur all over the world, more or less currently, mostly in shallow, eutrophic waters. These are:

Ascomorpha saltans
Asplanchna brightwelli
Brachionus angularis
Brachionus calyciflorus
Brachionus quadridentatus
Brachionus rubens
Lecane cornuta
Lecane flexilis
Lecane furcata
Lecane hornemanni
Lecane luna
Lecane lunaris

Chromogaster ovalis
Colurella adriatica
Colurella colurus
Colurella obtusa
Euchlanis dilatata
Euchlanis lyra
Euchlanis parva
Filinia longiseta
Lecane bulla
Lecane closterocerca
Lecane nana
Lecane pyriformis
Lepadella acuminata
Lepadella ovalis
Lepadella patella
Mytilina mucronata
Polyarthra remata
Polyarthra vulgaris
Testudinella patina
Trichocerca brachyura
Trichocerca tigris

All of them are known from the Neotropical faunistic area.

2) A second group of species is cosmopolitan, but more or less thermophilous; in moderate climates they are as a rule summer forms, in subtropical and tropical regions they are perennial:

Brachionus patulus
Lecane inermis (in Iceland in hot springs!)
Lecane quadridentata
Trichocerca similis

In this group, the last one is also new to the mainland of Central America.

3) Several species are characteristic for highly alkaline and saline waters, rich in mineral ions, and in such ecological conditions are cosmopolitan:

Brachionus plicatilis
Hexarthra fennica
Lecane thalera
Lepadella persimilis
Tripleuchlanis plicata

Of these five, *Lepadella persimilis* is being mentioned here for the first time for the Neotropical faunistic area.

Hence, for 38 common species the present paper fills up a gap in the pattern of their geographical distribution, as none of them had been met with before in the Caribbean Province.

4) A couple of alkaliphilous american species have a remarkable distribution pattern.

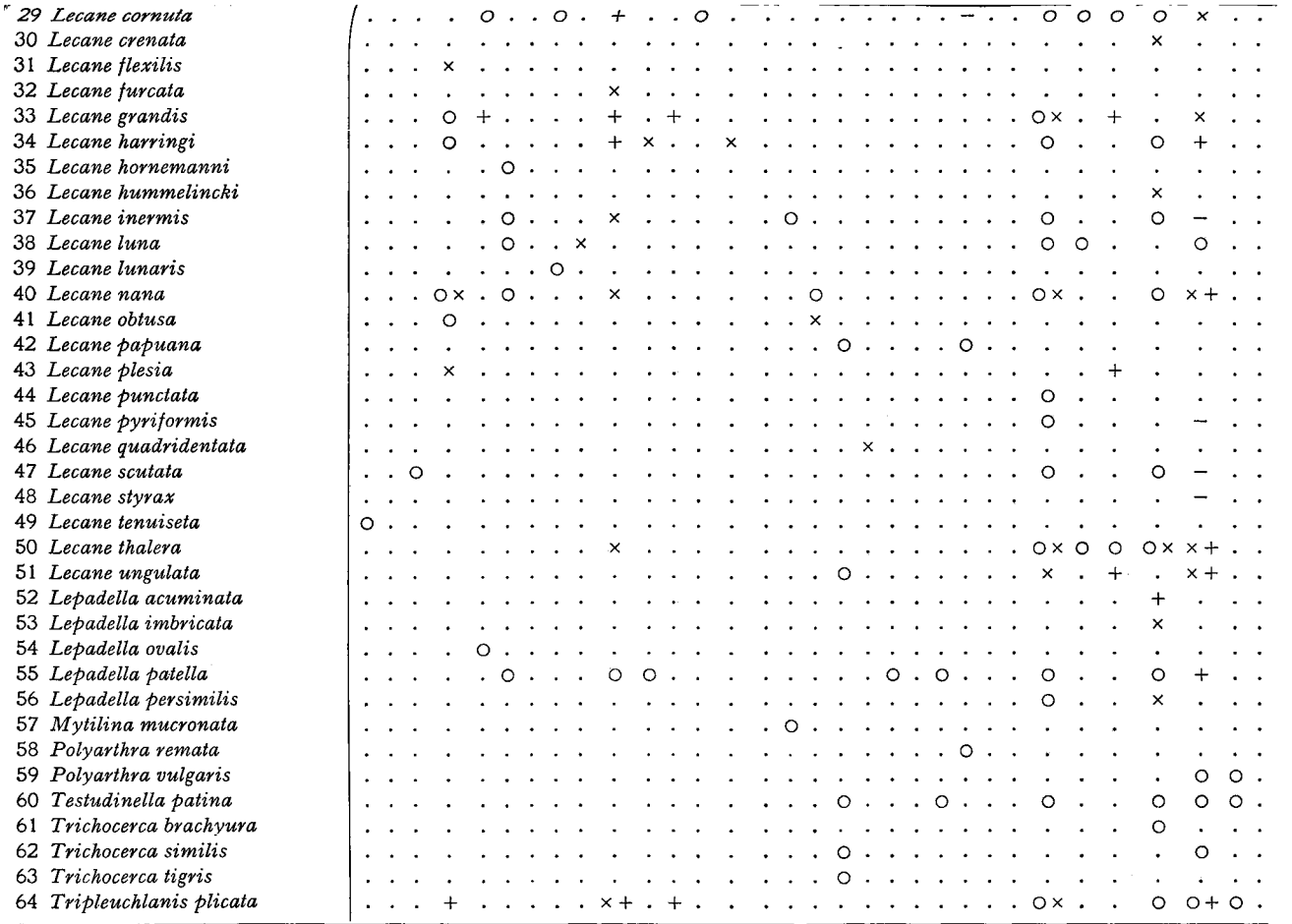
a) Brachionus havanaensis

Discovered by ROUSSELET (1911) in material from Havana, Illinois, USA; known from several regions in the USA and from British Columbia (AHLSTROM 1940). In México it was found by AHLSTROM 1932, by CARLIN-NILSSON 1935 and by TAFALL 1942. More recent data are: Gulf of Mexico Coast Rivers (WURTZ & ROBACK 1955) and Louisiana (GALLAGHER 1966). For South America we have the records of HAUER 1956 for Venezuela and 1965 for Amazonia. OLIVIER (1955) found it in several places in Argentina. LEENTVAAR (1975) mentions the species for Suriname. The peninsula Paraguaná (Venezuela) is added in the present paper. There is only one record for continental Middle-America, viz. Nicaragua (DE RIDDER 1966).

TABLE 2

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES OF ROTATORIA
according to the samples studied

Salinity o = < 1 g Cl'/l × = 1–16 g Cl'/l + = > 16 g Cl'/l – = unknown	Key Biscayne	South Bimini	New Providence	Grand Cayman	Cayman Brac	Jamaica	Puerto Rico	St. Croix	Anguilla	Sr. MARTIN	Tintamarre	St. Barts	Saba	St. Eustatius	Barbuda	Montserrat	Marie-Galante	Les Saintes	Dominica	Martinique	Barbados	Grenada	Margarita	Blanquilla	Gran Roque	BONAIRE	Klein Bonaire	Klein Curaçao	CURAÇAO	ARUBA	Paraguaná	Goajira
1 *Ascomorpha saltans*	.	.	.	.	.	.	.	.	.	.	.	.	.	o×	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.	.	.	.
2 *Asplanchna brightwelli*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	×	.	.	.	.	.	.	.	.	.	×	.	o
3 *Brachionus angularis*	.	.	.	.	.	.	.	.	.	o×	.	.	.	.	.	.	.	.	.	.	.	.	o	o	.	o	o	.	o×	o	.	o
4 *Brachionus calyciflorus*	.	.	.	.	.	.	.	.	.	×	.	.	.	.	.	.	.	o	.	.	.	.	–	.	.	o	.	.	.	.	.	o
5 *Brachionus havanaensis*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.
6 *Brachionus patulus*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	..	.	.	o	.	.	.
7 *Brachionus plicatilis*	.	.	.	×	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	o	o	×	×	×	o+	×	×	.	.
8 *Brachionus quadridentatus*	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.
9 *Brachionus rubens*	.	.	.	.	.	.	.	.	.	o	.	.	.	.	o	.	.	.	.	.	.	.	.	.	.	×	.	.	.	×+	.	×
10 *Brachionus trahea*	.	.	.	.	.	.	.	.	.	–	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	o
11 *Chromogaster ovalis*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.
12 *Colurella adriatica*	.	.	.	.	.	.	.	.	.	×	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.	o	.	.	.
13 *Colurella althausae*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.
14 *Colurella anodonta*	.	.	.	.	.	o	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	o	.	.	.	.	.	.	×	.	.	.
15 *Colurella colurus*	.	.	.	o	.	.	.	.	×	+	.	.	.	×	.	.	.	.	.	o	o	.	.	.	.	o	.	.	o+	+	.	.
16 *Colurella obtusa*	.	.	.	o	.	.	.	.	.	.	.	.	.	.	.	o	.	o	.	o	.	.	.	.	.	.	.	.	o	.	.	.
17 *Euchlanis dilatata*	.	.	o	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	o	.	.	.	.	.	o	o	o	o	o	.	.
18 *Euchlanis lyra*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	o	.	.
19 *Euchlanis parva*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.
20 *Euchlanis perpusilla*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.
21 *Filinia longiseta*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o
22 *Hexarthra fennica*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	.	×	o	.	.
23 *Hexarthra intermedia bras.*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	o	o	.
24 *Keratella procurva*	.	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
25 *Lecane aculeata*	.	o	o	.	.	o	.	.	×	.	.	.	.	.	.	.	.	o	.	.	.	.	.	.	.	o×	.	+	o	.	.	.
26 *Lecane arcuata*	o	.	.	.	.	o	.	.	.	.	.	.	.	.	.	.	.	o	.	.	.	o	o	.	.	×	.	.	×	.	.	.
27 *Lecane bulla*	.	.	.	.	.	.	o	.	.	.	.	.	.	.	.	.	.	o	.	×	.	o	.	.	.	o	o	.	.	.	.	o
28 *Lecane closterocerca*	.	.	.	.	.	.	.	.	.	o+	.	.	.	×	.	.	.	o	.	.	.	o	o	.	.	o×	.	.	.	×	.	.


29 Lecane cornuta
30 Lecane crenata
31 Lecane flexilis
32 Lecane furcata
33 Lecane grandis
34 Lecane harringi
35 Lecane hornemanni
36 Lecane hummelincki
37 Lecane inermis
38 Lecane luna
39 Lecane lunaris
40 Lecane nana
41 Lecane obtusa
42 Lecane papuana
43 Lecane plesia
44 Lecane punctata
45 Lecane pyriformis
46 Lecane quadridentata
47 Lecane scutata
48 Lecane styrax
49 Lecane tenuiseta
50 Lecane thalera
51 Lecane ungulata
52 Lepadella acuminata
53 Lepadella imbricata
54 Lepadella ovalis
55 Lepadella patella
56 Lepadella persimilis
57 Mytilina mucronata
58 Polyarthra remata
59 Polyarthra vulgaris
60 Testudinella patina
61 Trichocerca brachyura
62 Trichocerca similis
63 Trichocerca tigris
64 Tripleuchlanis plicata
Totals
2 1 3 10 4 8 1 2 3 19 2 2 1 4 1 4 2 11 1 6 1 7 9 3 1 28 8 8 28 28 5 7

b) Brachionus trahea

Discovered in Brazil by MURRAY and described in 1913, this species has been met with in several places in South America: Brazil, Argentina (AHLSTROM 1940); NE Brazil (the steppic "acudas", HAUER 1953); Venezuela (HAUER 1956). In Nicaragua, the two species overlap (DE RIDDER 1966). For a long time, *B. trahea* was unknown from N. America, till it was discovered in México by AHLSTROM 1932, by UENO 1939 and by TAFALL 1942. In recent times, GALLAGHER (1966) has added Louisiana to the list of records. In the present paper we add records from St. Martin, Bonaire and Colombia (La Goajira peninsula).

COMMENTS ON SOME INTERESTING SPECIES

In the following paragraphs for 17 less common species the distribution on a world-wide scale and the ecology are discussed, while – in addition – comments are given on two common species of *Brachionus* and *Tripleuchlanis*.

(4) **Brachionus calyciflorus** Pallas, 1766

This species was met with in samples from Iles des Saintes (Sta. 760, 6.II.1964), Margarita (s.n., 13.V.1936), Bonaire (50, 25.III. 1937) and La Goajira (112, 22.I.1937; 114, 21.I.1937). The frequency was variable.

In Sta. 112 it was common. All specimens found in this sample had large postero-lateral spines: body length 105 μm with spine-length 52 μm to body length 90 μm with spine length 90 μm. In this sample, *Asplanchna brightwelli* was also common. As known, the latter is a predator on the above cited species and releases a substance which, according to GILBERT 1967, should induce the formation of postero-lateral spines in *Brachionus calyciflorus*. Our results are in accordance with the laboratory experiments of GILBERT. This author worked with *A. sieboldi* and *A. girodi*. Our observations make it clear, that the spine-induction is general throughout the genus *Asplanchna*.

(13) **Colurella althausae**, sp. n. Fig. 27

The species is much alike *C. monodactylos* Althaus, 1957, as well for its morphology as for its ecology. ALTHAUS found her unique specimen in the psammon of the Bay of Varna (Black Sea, Bulgaria). We found our specimens in the inner part of Piscaderabaai, Curaçao, in a sample containing a lot of sand and probably the upper layer of the psammon of the spot. The dimensions also agree, although in our specimens the lorica seems to be proportionally more oblong. This is shown in the following table (measurements in μm):

	1	*2*	*3*	*4*	*mean*	ALTHAUS
length of lorica	74	70	80	82	*76*	73.5
height of lorica	35	35	38	36	*36*	39
length of toe	19	18	20	20	*19.5*	19.5
breadth of toe	6	5	5	6	*5.5*	6–6.5

The general morphology is very similar to that of *C. monodactylos:* ventral side of the lorica almost straight, dorsal side of the lorica wavy, toe cuneiform, more or less distinctly striped, joints of the foot hidden between the valves of the lorica.

If we choose not to consider our specimens as conspecific with *C. monodactylos* Althaus, our choice is based on modern biogeographical and cladistic arguments. Indeed, it is impossible to explain the distribution of the taxon if we consider all the specimens as conspecific. Transport by wind or by birds seems to be excluded, in respect of the huge distance (about 8500 km) between the two localities, and in view of the fact that the Antillean province, from which our specimens are coming, lay far outside of the normal migration routes of palearctic birds. We have no doubt to do with populations of a different origin; the great similarity between individuals from the Old and from the New World can be easily explained by the effect of VAVILOV's universal rule (parallel variations in related groups of organisms).

We consequently consider our specimens as belonging to a new

species, which we have pleasure to name after the excellent german Rotifer specialist, Dr. BRIGITTE ALTHAUS: *Colurella althausae.*

(14) **Colurella anodonta** Carlin, 1939 Fig. 28

Described in 1939 by CARLIN from lakes around Aneboda (Sweden) and collected in S. Sweden by BERZINS in 1955. Further data are: THOMASSON 1956 in Swedish-Lapland; DE RIDDER at several stations in Iceland (1966, 1967 and 1969) and in Lotharingia, Moselle Dept., France (1969a).

In Nearctis, it was found in Pennsylvania by MYERS 1942. Although it was formerly sometimes considered a species of acid waters, later data proved *Colurella anodonta* to be eurytopic, being met with in a pH-range between 4 and 10, and at temperatures between 5°C and 24°C. As to other ecological factors, the species is bound to vegetation: it is common between algae and mosses in shallow stagnant and running waters (these are precisely the ecological conditions of the samples 659, 841, 944 and 029).

In our Caribbean material, *C. anodonta* was easily to discern from *C. obtusa*, from which it has been separated by CARLIN.

Although PEJLER (1962: 354–356) after studying material from Lapland, proposes to lump both species together, we prefer to follow CARLIN in separating them, because they are easily distinguishable in our material. Dimensions of a few specimens (in μm):

Colurella	*anodonta*				*obtusa*		
	1	*2*	*3*	*4*	*1*	*2*	*3*
length of carapace	60	62	62	60	68	72	65
height of carapace	35	30	30	30	35	38	35
length of toes	16	20	18	19	18	20	18

In se, C. anodonta is somewhat larger in moderate and subtropical-tropical milieus than in subarctic circumstances: the mean length of the carapace for Icelandic individuals is 57 μm. To settle definitively the problem *C. obtusa-C. anodonta*, measurements on a more abundant material are required.

(20) **Euchlanis perpusilla**, sp. n. Fig. 43

The body is oblong, the width being about $\frac{3}{4}$ of the length. The dorsal plate has two half-circular projections anteriorly, joined by a straight midden portion. It has a shallow U-shaped notch behind. The ventral plate is slightly widened anteriorly, forming small edges on both sides; it is rounded posteriorly. The foot is two-jointed, the first joint being somewhat indistinct. The toes are relatively long and sharply pointed. Unfortunately, we had no opportunity of making a cross section of the lorica. We have no sketches of the mastax, so that this description must remain incomplete.

The species is much smaller than all the others known in the genus, as may be deduced from following measurements (in μm):

	1	*2*	*3*
total length	135	135	126
length of dorsal plate	110	105	105
length of ventral plate	84	86	84
width of dorsal plate	68	72	75
width of ventral plate	60	60	58
depth of posterior notch	6	5	6
length of toes	45	35	35

We met the species in a sample from Aruba (Sta.1013a) taken in the Salinja Balashi on 1.V.1955; the chlorinity of the water was 45 g/l. *Euchlanis perpusilla* seems to be a salt water species.

It does not resemble any other species of the genus, although in the anterior part of the lorica there is some analogy to *E. lyra*. Moreover, its small size distinguishes it from all other species of the genus.

(23) **Hexarthra intermedia brasiliensis** Koste, 1972 Fig. 29

Hexarthra intermedia has been described by WISZNIEWSKI (1929) from material collected in Poland. It has been found afterwards in Czechoslowakia, the RSR,

Germany, the USSR and Belgium. In all those countries with moderate climate it is a summer form.

Hexarthra insulana Hauer, 1937 is a synonym of the above named species (HAUER 1941): under this name the species occurs also in Java, Sumatra, Wallacea and the Philippines (Luzon). It appears to be widespread. The distribution pattern is completed by following records:
Palearctic region: Egypt (HAUER 1963).
Ethiopic region: Lake Edward (BEAUCHAMP 1932), Lake Tchad (POURRIOT 1968), and Sudan (ABU GIDEIRI 1969).
Eastern region: India (NOVOTNA-DVORAKOVA 1963, MICHAEL 1968, RAI 1974), and Nepal (DAEMS & DUMONT 1974).
Australian region: Mayor Island, New Zealand (RUSSELL 1960).
Neotropical region: Suriname (LEENTVAAR 1975).

In 1953, HAUER described a *forma brasiliensis* of *Hexarthra intermedia*, with asymmetrical caudal appendices, but the mastax not different from that of the nominate form. In 1956, he called it in the same publication "*f. bras.*" (p. 304) and "*var. bras.*" (p. 280), and in 1965, he only mentioned "*var. bras.*" (p. 355).

KOSTE (1972) found in Amazonia the same "form" as HAUER, but called it subspecies. It seems to be a constant variant, probably fixed on a genetic base. It has therefore almost been proved, that a subspecies has been formed in the Neotropical region. It has to be referred to as *Hexarthra intermedia brasiliensis* Koste. That writer called it *H.i.b.* HAUER, but HAUER's name "*bras.*" was given to an infraspecific variant, without any taxonomical status. KOSTE must accordingly be considered as the first describer of the subspecies, and the name "*brasiliensis*" is to be attributed to him. The subspecies occurs in Brasil, Venezuela, Colombia and the Caribbean province.

It is this subspecies that has been met with by GILLARD (1967) in material from Amazonia and that we found in samples from Bonaire, Aruba and the Paraguaná Peninsula (Venezuela). The waters involved are alkaline (pH 7.9–9.0), warm (26–35°C) and slightly oligohaline (Cl' 0.035–0.425 g/l). The species was abundant only in one sample from Bonaire. The individuals were rather small, as is indicated by the measurements of one specimen: body length 145 μm, length of ventral arm 152 μm, length of caudal appendices 20 μm.

Hexarthra intermedia brasiliensis is the only genuine planktonic species found in our Caribbean material.

(24) **Keratella procurva** (Thorpe, 1891)

This species was described by THORPE in 1891 from the island of Ascension, where he collected it in a cattle trough. He called it *Anuraea procurva*.

In his revision of the genus *Keratella*, AHLSTROM (1943) considered it the variety *procurva* of the species *Keratella valga*; he found it in a sample from Sohawa, Punjab, India. Before him, EDMONDSON & HUTCHINSON (1934) and HAUER (1937/38) had described it under the name *Keratella valga valga*, from North India and Sumatra respectively.

In 1953, BERZINS described his findings from W. Australia, and raised *K. procurva* (Thorpe) again to the specific rank; in 1955, he mapped all the data known up to then: all appeared to be situated in the tropical and subtropical zones. BERZIN's new data from Taylor's Lake, Victoria, Australia (1963) did not bring any change to this distribution pattern.

Our data also fit in the scheme: we found the species in Sta. 094 from St. Martin, in a temporary pool polluted by cattle: this implies the same ecology as for THORPE's specimens. Apparently, *K. procurva* is a species from all sorts of eutrophic waters.

We only found a few individuals, which were in a rather bad condition, so that we were not able to make a sketch of them. For a figure, we refer to BERZINS 1955, p. 552, fig. 6.

The individuals we met with had a pustulated lorica. Moreover, they were very small, in fact smaller than any specimens found up to now. Dimensions of one individual (in μm): total length 114, body length 87, max. body width 60, width at base of anterior spines 50, width at base of posterior spines 38, length of anterior spines 14–13–16, length of posterior spines 7 (L) and 13 (R).

According to BERZINS (1953: 8) *K. procurva* is subjected to important variations in function of the temperature of the water wherein it is found. In agreement with his statement, our sample must have had very warm water.

(25) **Lecane aculeata** Jakubski, 1912 Fig. 30

This species was described by JAKUBSKI in 1912 from the Usangu steppe, in the present-day Tanzania. In 1914, HARRING described his *Lecane arcula* from the Panama Canal Zone. It was found afterwards that the characteristics of both species overlap largely and that there is no distinction in their distribution pattern. As a conclusion, we can only distinguish one species. For the same reason, it is also im-

possible to distinguish two subspecies as did WISZNIEWSKI (1954). Its correct name, according to the international rules of zoological nomenclature, is *Lecane aculeata*. It appears to be a widespread form, known from all over the world, but as a rule not very abundant.
Palearctic region: Belgium (VAN OYE 1952, SCHEPENS 1960), Germany (HAUER 1935, KOSTE 1962), Italy (MOLA 1928), Spain (WISZNIEWSKI 1932), Hungary (VARGA 1943, ZANKAI 1968), R.S.R. (GODEANU e.a. 1973), Poland (PAWLOWSKI 1958), Sweden (CARLIN 1939), Czechoslowakia (BARTOS 1950), U.S.S.R. (KUTIKOWA 1970), Japan (YAMAMOTO 1954).
Ethiopic region: Gold Coast (RUSSELL 1956), Zaire (EVENS 1949), Tanzania (JAKUBSKI 1912), Rhodesia (WULFERT 1965).
Eastern region: Kashmir, India (EDMONDSON & HUTCHINSON 1934), Indonesia (HAUER 1937/38), Nepal (DAEMS & DUMONT 1974).
Australian region: Sidney (MURRAY 1913), New Zealand (RUSSELL 1952).
Neotropical region: Brazil, Chili, Argentina (MURRAY 1913), Panama Canal Zone (HARRING 1914), Amazonia (HAUER 1965, KOSTE 1972, 1974 and 1974a).

In our Caribbean material, we found *Lecane aculeata* in samples from Jamaica, New Providence, South Bimini, Anguilla, Iles des Saintes, Bonaire, Klein Curaçao and Curaçao. In most samples it was rare. These samples had from fresh to very saline water and as a rule a well developed vegetation. The dimensions agree very well with those given by other authors. Here follow the measurements of three specimen (in μm):

	1	*2*	*3*
total length	97	94	100
length of carapace	75	70	72
width of carapace	49	52	50
width of anterior spines	40	42	42
length of toes	20	20	20
length of claw	8	6	8

(26) **Lecane arcuata** (Bryce, 1892) Fig. 31

This is a typical species of submerse algae and mosses, common in running waters (acid, neutral and alkaline), much rarer in stagnant ones. It has been described in 1891 by BRYCE from Epping Forest (U.K.) and has been found all over the world.

Palearctic region, in subarctic and cold-moderate countries, but more common in warmer regions: Iceland (DE RIDDER 1972), The Netherlands (DE GRAAF 1957). Germany D.B.R. (HAUER 1924, 1935, 1938, 1952, KOSTE 1962, 1965), D.D.R. (PAX & WULFERT 1941), Austria (DONNER 1970), Czechoslowakia (DONNER 1954), Poland (PAWLOWSKI 1960), U.S.S.R. Caucasus (TARNOGRADSKI 1961, 1961a, KUTIKOWA 1970), Spain (WISZNIEWSKI 1932), Hungary (VARGA 1937, NOGRADI 1962, ZANKAI 1968), R.S.R. (MIRON 1960, GODEANU 1963, 1969, 1970, GODEANU e.a. 1973), Black Sea (GODEANU 1970a), Japan (SUDZUKI 1964, YAMAMOTO 1956), China (YAMAMOTO 1953, WULFERT 1968), Manchuria, Korea (YAMAMOTO 1953).
Ethiopic region: Ethiopia (BRYCE 1931), Zaire (EVENS 1949, GILLARD 1957), Cape Province, Rep. of S. Africa (ROUSSELET 1910).
Nearctic region: Washington, DC (HARRING 1914), Ohio (AHLSTROM 1933), Florida (AHLSTROM 1934).
Neotropical region: Brazil (MURRAY 1913, HAUER 1953).
Eastern region: Indonesia (HAUER 1937/38), India (WULFERT 1966), Thailand (DE RIDDER 1971).
Australian region: New Zealand (RUSSELL 1953, 1960).

WULFERT (1968) wonders whether *L. arcuata* is not synonymous with *L. hamata*. The different incision on the anterior margin and the lesser length of the foot provide, however, sufficient ground for specific distinction.

In our Caribbean material, we met *L. arcuata* in samples from Florida, Jamaica, Iles des Saintes, Grenada, Margarita, Bonaire and Curaçao. The waters involved were fresh (Cl' 0.00 and 0.06 g/l), oligohaline (0.25 and 0.36 g/l) and polyhaline (2.10 and 5.54 g/l). In two of these cases it was known that the waters were alkaline (pH 7.9–8.6).

Lecane arcuata is a rather small species, subject to some variation, as may be seen from the following measurements (in μm):

	Caribbean	*Thailand*	HARRING & MYERS
total length	106–114	98	90
length of dorsal plate	70– 70	70	60
length of ventral plate	74– 75	74	68
width of dorsal plate	54– 55	52	54
width of ventral plate	46– 45	44	44
width of anterior margin	28– 30	30	24–36
length of toe	30– 35	23	24

(30) **Lecane crenata** (Harring, 1913) Fig. 32

Lecane crenata is a widely distributed species, recorded from all over the world, with apparently a slight preference for acid biotopes in moderate and subarctic climates.
Palearctic region: Belgium (GILLARD 1950), The Netherlands (DE GRAAF 1956, 1960), Sweden (THOMASSON 1952), Hungary (VARGA 1939, NOGRADI 1962, ZANKAI 1968), R.S.R. (GODEANU 1969, 1970, GODEANU e.a. 1973), Poland (PAWLOWSKI 1958), U.S.S.R. (KUTIKOWA 1970), Esthonian rep. (RIJKOJA 1933, Caucasus (TARNOGRADSKI 1961a), Korea, Japan, China, Manchuria (YAMAMOTO 1953), periphytic in acid and non-acid waters in Japan (YAMAMOTO 1956, 1959).
Eastern region: Kashmir, India (EDMONDSON & HUTCHINSON 1934), Indonesia (HAUER 1937/38).
Nearctic region: Washington, DC (descr. from there, HARRING 1914), Texas (HARRING 1914), Florida, New Jersey, Wisconsin, Maine, Great Lakes, Arkansas, Mississippi, Louisiana (HARRING & MYERS 1926), FLORIDA (AHLSTROM 1934), N. Carolina (AHLSTROM 1938), Pennsylvania (MYERS 1942), Canada, arctic regions (HARRING 1921), Ontario (CHENGALATH & MULAMOOTTIL 1974).
Neotropical region: Haiti (EDMONDSON 1933), Amazonia (HAUER 1965, GILLARD 1967, KOSTE 1974, 1974a).
Australian region: Sidney, Australia (HARRING & MYERS 1926), New Zealand (RUSSELL 1945).

We met this species only once, in a few specimens, from a Curaçao locality (Sta. 914) with a chlorine content of 2.30 g/l. A pH-value was not given; in comparable circumstances however, these waters are alkaline. The measurements of our specimens agree with those given by HARRING & MYERS 1926.

(33) **Lecane grandis** (Murray, 1913) Fig. 33

Lecane grandis has been described by MURRAY in 1913 from a brackish lagoon near Rio de Janeiro. Afterwards it proved to be a stenohaline species, common in brackish or salt tide pools and occurring also in salt inland waters. The species has a widely scattered distribution, in Arctogaea as well as in Neogaea.
Palearctic region: Sweden, Baltic Sea (THANE-FENCHEL 1968), U.S.S.R., Novorossiisk, Black Sea (FADEEW 1925 fide RODEWALD 1939), Caucasus (TARNOGRADSKY 1961, KUTIKOWA 1970), R.S.R. (NEAGU e.a. 1968), Iran (LÖFFLER 1959).
Nearctic region: New Jersey (MYERS 1936), N. Carolina (AHLSTROM 1938), Massachusetts (EDMONDSON 1948).
Neotropical region: Haiti (EDMONDSON 1933), Bonaire (HUMMELINCK 1933), Brazil (MURRAY 1913, HAUER 1953), Chili (MURRAY 1913a).

In our material *L. grandis* occurred in samples from Grand Cayman, Cayman Brac, St. Martin, St. Barts, Bonaire, Klein Curaçao and Aruba. All from presumably alkaline waters (known pH 7.5–8.5) with high salinities (2.17–46.0 g Cl'/l), with a single exception (0.67 g/l). In all but one samples the species was rare. In some specimens the lorica was granulated all over. Our specimens are rather large, as can be deduced from the following measurements (in μm).

	1	*2*	*3*	*4*	MURRAY	HARRING & MYERS
total length	270	260	290	235	±220	240
length of dorsal plate	180	170	195	150	180	165
length of ventral plate	180	180	195	150	—	175
width of lorica	165	150	170	125	160	140
width ant. margin dors.	100	90	100	85	120	100
width ant. margin ventr.	130	120	120	108		118
length of toe without claw	52	60	70	60	—	60
length of toe with claw	—	—	—	—	80	—
length of claw	20	20	20	15	—	12

(34) **Lecane harringi** (Ahlstrom, 1934) Fig. 34

HARRING & MYERS 1926 described this species after material from salt ponds and tide pools near Atlantic City, N.J., USA, and thought it be conspecific with MURRAY's form from Rio de Janeiro, so they called it *L. punctata*. AHLSTROM (1934: 263) distinguished the two species, and called the second one *Monostyla harringi*. It is a small species, living in biotopes with high salinity, and with a widely scattered distribution. We found following records (those by RUSSELL 1957, TARNOGRADSKY, 1961, and KUTIKOWA, 1970, erroneously referred to as "*M. punctata*").

Palearctic region: Spain (WISZNIEWSKI 1932), U.S.S.R., Daghestan near Caspian Sea (TARNOGRADSKI 1961, KUTIKOWA 1970).
Nearctic region: New Jersey (HARRING & MYERS 1926, MYERS 1936), N. Carolina (AHLSTROM 1938).
Eastern region: India, Rajasthan (NAYAR 1965), Gujerat (first mention for fresh water, WULFERT 1966).
Neotropical region: Venezuela (HAUER 1956).
Australian region: Teaoraerke Islet, Gilbert Islands, and Tutuba, New Hebrides (RUSSELL 1957).

The specimen in our Caribbean material are a little smaller than those mentioned by other authors, and the lorica has no surface markings whatever. The following table gives a detailed comparison of measurements (in μm).

	Caribbean (5 spec.)	HARRING & MYERS	WISZNIEWSKI	HAUER	WULFERT
total length	90–100	110	—	117	110
length of dorsal plate	60– 68	76	81	76	70
width of dorsal plate	60– 68	70	70	71	70
length of ventral plate	59– 70	80	83	84	80
width of dorsal plate	48– 54	55	65	57	53
width of anterior margin	20– 27	36	38	34	32
length of toe without claw	18– 20	24	27	24	—
length of toe with claw	—	—	—	—	27
length of claw	5– 7	6	5	5	—

We found *L. harringi* in only a few samples from Grand Cayman, St. Martin, Tintamarre, St. Eustatius, Bonaire, Curaçao and Aruba, most of them in strongly alkaline waters (pH 8.6–8.9), in two cases from very high salinities (45 and 46 g Cl'/l). All samples were rich in phanerogamic and cryptogamic vegetation.

(36) **Lecane hummelincki,** sp. n. Fig. 35

This small *Lecane* has an almost circular form. The dorsal plate has a straight anterior margin, which is sometimes indented by three shallow notches. It is rounded posteriorly. The ventral plate has a deep anterior sinus, and is narrower and longer than the dorsal one. Only one foot joint, the second, has been observed; it is subquadrate. Its posterior margin coincides with the posterior margin of the ventral plate. The toe is relatively long and cuneiform, without claw.

Measurements of three individuals (in μm):

	1	2	3
total length	82	80	78
length of dorsal plate	52	48	47
length of ventral plate	58	55	54
width of dorsal plate	51	48	47
width of ventral plate	43	40	—
depth of ventral sinus	10	11	10
length of toe	26	30	26

We have pleasure in dedicating this beautiful little species to Dr. P. WAGENAAR HUMMELINCK, who entrusted us with the study of his interesting Caribbean material.

We met *Lecane hummelincki* in a sample taken in the spring of Rooi Sánchez, Curaçao, 11.XI.1936, in alkaline water (pH 8.1–8.6) containing 2.1 g Cl'/l.

L. hummelincki is very much like *L. pyriformis*, from which it differs in the conspicuous sinus of the ventral plate.

(41) **Lecane obtusa** (Murray, 1913) Fig. 36

This species was discovered by MURRAY in a pond near Rio de Janeiro and described in 1913. No particulars on ecological conditions of the finding-place were given. Afterwards, *L. obtusa* was considered to be a species of acid waters and bogs, but the records of STEINECKE (1916) and HAUER (1924), both from sphagnum, belong in fact to *L. subulata* Harring & Myers (HAUER 1929). Two valid records for Europe (WISZNIEWSKI 1932, lake near Valencia, Spain, and 1934, lake Wigry in Poland) refer to fresh water localities, the first, however, with several relict forms from brackish water. *L. obtusa* is also recorded for the U.S.S.R. by KUTIKOWA 1970.

Most other records are from the New World, mostly from fresh or brackish water. Nearctic region: Louisiana, Massachusetts (HARRING & MYERS 1926), Florida (AHLSTROM 1934), N. Carolina (AHLSTROM 1938), Pennsylvania (HARRING 1940), México (RIOJA 1942).
Neotropical region: Panamá (HARRING 1914), Amazonia (KOSTE 1972, 1974a).
Ethiopic region: Bangweulo Lake, Rhodesia (THOMASSON 1960, WULFERT 1965)
Eastern region. Indonesia (HAUER 1937/38 as *L. acanthinula*).

In the Caribbean material, the species had no spines on the edges of the anterior margin of the lorica. This peculiarity had already been remarked by OPARINA (1928) and by WISZNIEWSKI (1934). KOSTE (1972) however found specimens with stout anterior spines. As for the dimensions of the species from various parts of the world, our specimens are the largest and have the greatest width of the lorica (meas. in μm):

	Caribbean	MURRAY	HARRING & MYERS	WISZNIEWSKI	HAUER	KOSTE
total length	130	—	115	—	—	112
length dorsal plate	80	70	76	78	67	—
length ventral plate	84	—	80	82	—	—
width dorsal plate	72	70	70	73	67	68
width ventral plate	64	55	58	62	55	—
width anterior margin	75	50	58	—	57	52
length toe without claw	25	—	32	34	28	36
length toe with claw	—	30–35	—	—	—	—
length of claw	18	—	7	6	9	8

We found *L. obtusa* in samples from Grand Cayman (Sta. 979) and Marie-Galante (Sta. 751); in both it was rare. The first was oligohaline, the second strongly mesohaline and rich in vegetation.

(42) **Lecane papuana** (Murray, 1913) Fig. 37

This species has been described by MURRAY 1913 after a single specimen collected in New Guinea. It turned out to be an alkaliphilous, subtropical and tropical species; its distribution was for the first time given by HARRING & MYERS 1926. HUTCHINSON e.a. (1932) added several finding-places in South Africa. EDMONDSON & HUTCHINSON (1934) found *L.papuana* in India and drew up a first distribution map. The distribution area seems to be limited by the mean annual isotherms of 15°C. All recent records fit in the framework sketched above. A list of them is given by DE RIDDER 1971. Later records are the following: Thailand (DE RIDDER 1971) and Amazonia (KOSTE 1972).

For the Caribbean province, we found *L. papuana* in a sample from Iles des Saintes, where it was very common, and in another from Margarita, where it was common. The samples have fresh resp. oligohaline water with much phanerogamic and algal vegetation; pH 6.9–7.1.

The measurements of our specimens agree largely with the dimensions given by HARRING & MYERS 1926; only the toes are shorter (25–30 μm versus 38 μm) and the claw is larger (13–15 μm versus 9 μm). The lorica of many individuals is finely granulated.

(43) **Lecane plesia** Myers, 1936, char. emend. Fig. 44

The lorica is broadly ovate; the width is somewhat variable, but reaches nearly ¾ of the length. The sides of both ventral and dorsal plates coincide wholly or partially. There are no lateral sulci. The coxal plates are large, but hardly observable. The anterior dorsal margin is slightly convex and the ventral one nearly straight or slightly concave. This anterior margin bears two short lateral spines. The posterior margin of the dorsal plate is rounded. The ventral plate is either rounded or truncated in a semi-square manner. In some individuals, the dorsal plate has a characteristic facetting, as indicated in Fig. 44d. The first foot joint is broadened behind, the second is polygonous and projects mostly with half its length or more beyond the lorica. The toes are short, and have the typical spearshape as indicated by MYERS.

Measurements of a few individuals (in μm):

	1	2	3	4	5
total length	131	125	122	120	122
length of dorsal plate	85	82	80	82	75
length of ventral plate	87	85	88	85	80
width of lorica	55	60	55	58	58
width of anterior margin	40	55	—	53	50
length of toe with claw	28	30	28	32	27
length of claw	15	15	15	16	17

We came across this species in a sample from Grand Cayman (Sta. 1694, 12.6 g Cl'/l) and in one from Klein Curaçao (Sta. 1047, 18.0 g Cl'/l). In both samples the species was abundant. Its ecology agrees with the indications given by MYERS 1936 ("Brackish water ditches, Mullica River, New Jersey" – "found to be common"). It is the second record for this species.

(44) **Lecane punctata** (Murray, 1913) Fig. 38

Discovered in a salt-water lagoon in Rio de Janeiro in 1912, this species was described by MURRAY in 1913. It is a typical brackish water species, redescribed by AHLSTROM in 1934 (p. 262, pl. 26 fig. 1–3). Two forms exist: the typical one (figured by MURRAY) which is narrower, and a form with a wide dorsal plate.

In our Caribbean material, we only found the second form. Our specimens are larger than those of MURRAY, but a little smaller than those of AHLSTROM. The claw of the toe however was not distinctly formed in some individuals. The measurements (in μm) are:

	Caribbean	MURRAY	AHLSTROM
total length	146	122	157
length of dorsal plate	100	85	106
length of ventral plate	107	90	118
width of dorsal plate	103	75	103
width of ventral plate	70	—	77
length of toe without claw	35	—	32
length of toe with claw	—	30	—
length of claw	6	—	6.5

We found *L. punctata* only once, in a few individuals, in a sample from Bonaire (Sta. 805, 0.675 g Cl'/l).

The form described as *L. punctata* by HARRING & MYERS 1926 is not the species discussed above. Owing to this confusion, there may be some incertitude as to its distribution. There seems only to be certainty for Florida (AHLSTROM 1934), Bonaire (our specimens) and Brazil (MURRAY), all other records referring to *L. harringi.*

(47) **Lecane scutata** Harring & Myers, 1926 Fig. 39

This species was described by HARRING & MYERS (1926) from Ottman Lake, Wisconsin, U.S.A. Following these authors, it is very rare in American lakes and everywhere else. However, it has been recorded from all over Arctogaea and Neogaea, but it seems restricted to moderate, subtropical and tropical climates and is likely mainly bound to sphagnum and other mosses and to psammon.

Its distribution pattern is as follows:

Palearctic region: Sweden (CARLIN-NILSSON 1934), Germany (WISZNIEWSKI 1934, HAUER 1935), The Netherlands (SCHROEVERS 1966), Belgium (GILLARD 1950, SCHEPENS 1960), Poland (WISZNIEWSKI 1934, PAWLOWSKI 1958, 1960, KIIMOWICZ 1956, RADWAN 1968, 1969), U.S.S.R. (KUTIKOWA 1970), Hungary (NOGRADI 1962, ZANKAI 1968), Greece, Macedony (WISZNIEWSKI 1935).

Nearctic region: Wisconsin (HARRING & MYERS 1926), Pennsylvania (MYERS 1942) Gulf of Mexico Coast rivers (WURTZ & ROBACK 1955).

Neotropical region: Haiti (EDMONDSON 1933), Venezuela (HAUER 1956), Amazonia, Brazil (KOSTE 1972, 1974a).

Eastern region: Indonesia (HAUER 1937/38).

We found *L. scutata* in single samples from New Providence, Bonaire, Curaçao and Aruba. In all cases the species was rare to very rare. Little is known about the chemical properties of the involved waters: from two of them (New Providence and Bonaire) it is reported that they have a chlorinity of respectively 0.30 and 0.675 g/l and that they were rich in vegetation (*Utricularia* and other phanerogams; also *Chara*; coating of algae). *L. scutata* seems to be one of those species, for which periphytism is more important than the acidity of the water.

Our specimens agree with those of HARRING & MYERS 1926; however, the toe is shorter, as can be deduced from the measurements (in μm):

	New Providence	HARRING & MYERS
total length	105	100
length of dorsal plate	78	62
width of dorsal plate	64	65
length of ventral plate	72	70
width of ventral plate	50	50
width of anterior margin	44	44–48
length of toe without claw	18	28
length of claw	5	5

(48) **Lecane styrax** Harring & Myers, 1926 Fig. 40

As for the distribution of the species, only a few localities are recorded, most of them in the subtropical and tropical zones:
Nearctic region: Wisconsin, Maine, New Jersey (HARRING & MYERS 1926).
Eastern region: Malaya (RUSSELL 1958).
Australian region: Fiji Islands (RUSSELL 1957), New Zealand (RUSSELL 1959).
Neotropical region: Haiti? (EDMONDSON 1933).
Palearctic region: U.S.S.R. (KUTIKOWA 1970).

HARRING & MYERS emphasize its relationship to *L. bulla*. HARRING (1940) records it for Pennsylvania as *L. bulla* f. *styrax*. As its taxonomical status seems to be not quite clear, it may be suspected that in many cases it was overlooked or recorded as *L. bulla*.

Lecane styrax was abundant in a sample from Rooi Hoeba, Aruba, 26.V.1967 (nature of the water not known). Our specimens are a little smaller than those of HARRING & MYERS, whilst the claw is more developed. Measurements (in μm):

	Aruba	HARRING & MYERS
total length	185	200
length of lorica	95	124–128
width of lorica	75	90
length of toe without claw	45	52
length of claw	40	24

(49) **Lecane tenuiseta** Harring, 1914 Fig. 41

Lecane tenuiseta has been described from Panamá by HARRING (1914). In the beginning (cfr. HAUER, 1924) it was considered a species from sphagnum pools and bogs. HARRING & MYERS (1926) widened its ecological spectrum to weedy freshwater ponds and indicated its presence all over the U.S.A. VOIGT (1957) stressed its tolerance for brackish water and KLIMOWICZ (1961) pointed out that he found the species in a polluted canal in Egypt. ZANKAI (1968) reported it from the psammon. The ecological tolerance of *L. tenuiseta* has thus been proved to be very broad. The acidophil character seems to be restricted to waters in cold-moderate climates.

L. tenuiseta seems to have its main distribution in Arctogaea. There are no records from Notogaea.

Palearctic region: The Netherlands (DE GRAAF 1956, 1957, 1960), W. Germany (HAUER 1924, 1936, KOSTE 1962, 1965, 1966), D.D.R. (ALTHAUS 1957, KOCH-ALTHAUS 1963), Sweden (CARLIN 1939, THOMASSON 1952), Finland (GODSKE-ERIKSEN 1969), Hungary (ZANKAI 1968), R.S.R. (GODEANU e.a. 1973), U.S.S.R. (FADEEW 1925, OPARINA-CHARITONOWA 1928, TARNOGRADSKY 1961, KUTIKOWA 1970), N. Iran (LÖFFLER 1961).

Ethiopic region: Egypt (KLIMOWICZ 1961, 1962).

Nearctic region: D.C., Texas (HARRING 1914), Ohio, Wisconsin, Maine (AHLSTROM 1933), Florida (AHLSTROM 1934), Pennsylvania (MYERS 1937, 1942), N. Carolina (AHLSTROM 1938).

Neotropical region: Panamá (HARRING 1914), Venezuela (HAUER 1956).

We only met *L. tenuiseta* in a freshwater sample (Cl' 0.06 g/l) from Key Biscayne, Florida, in a few specimens. These agree in general morphology with the figures in HARRING & MYERS, 1926, pl. 31 fig. 3–4. The ventral plate of the lorica however has no ridges whatever. Moreover, our specimens are a little smaller. Measurements of one specimen (in μm):

	Key Biscayne	HARRING & MYERS
total length	102	106
length of dorsal plate	56	64
length of ventral plate	68	73
width of lorica	52	56
width of anterior margin	48	45
length of toe without claw	20	20
length of claw	12	13

(51) **Lecane ungulata** (Gosse, 1887) Fig. 45

Lecane ungulata was described by GOSSE from Woolston Pond, G.B. It has been recorded from most faunistic regions, except Notogaea, as a rule in small numbers. The species is not exacting, ecologically speaking, and pH-tolerant.

The existing records are as follows:

Palearctic region: Belgium (GILLARD 1950, SCHEPENS 1960), Great Britain (GOSSE 1887), France (DE RIDDER 1960), Germany D.B.R. (KOSTE 1962, 1963, 1968), D.D.R. (KOCH-ALTHAUS 1963), Norway (VARGA 1937), Iceland (BARTOS 1951), Spain (SELGA 1952), Italy (TATICCHI 1968), Hungary (ZANKAI 1968), R.S.R. (NEAGU e.a. 1968, GODEANU 1970, RUDESCU 1970, GODEANU e.a. 1973), Poland (STEINECKE 1916, PAWLOWSKI 1960, RADWAN 1969), Czechoslowakia (KUBICEK 1958, DVORAKOVA 1960), U.S.S.R. (HILLBRICHT-ILKOWSKA 1964, KUTIKOWA 1965, 1970, TARNOGRADSKY 1961).

Ethiopic region: Egypt (KLIMOWICZ 1961, HAUER 1963), White Nile (MONAKOW 1969), Lake Tchad (POURRIOT 1968), Nigeria (GREEN 1960), Tanzania (JAKUBSKI 1912), Rhodesia (ROUSSELET 1906), Tanganyika (ROUSSELET 1910), African Lakes (CUNNINGTON 1920), Rep. of South Africa (HUTCHINSON 1932), Syria (BARROIS & DADAY 1894).

Eastern region: Madras (MICHAEL 1968), Gujerat, India (WULFERT 1966), Indonesia (HAUER 1937/38).

Nearctic region: Lake Erie, Ohio (JENNINGS 1900), Washington D.C. (HARRING 1914), California (ALLEN 1920), Lake Winnipeg (BAJKOW 1933), Ohio, Lake St. Clair, Wisconsin, Maine, Oklahoma (AHLSTROM 1933), Florida (AHLSTROM 1934), N. Carolina (AHLSTROM 1938), Pennsylvania (MYERS 1942), Ontario (CHENGALATH & MULLAMOOTTIL 1974), Arctic (HARRING 1921).

Neotropical region: Panamá (HARRING 1914), Amazonia (HAUER 1965, KOSTE 1974, 1974a).

In our Caribbean material we found the species in samples from Les Saintes, Bonaire, Klein Curaçao and Aruba, in alkaline waters which was fresh in one of the samples (0.06 g Cl′/l) and strongly haline (3.2–45.0 g Cl′/l) in the remaining. *L. ungulata* was never common in these samples.

Our specimens were rather small and formed rather heterogenous populations. For comparison the measurements by HARRING & MYERS 1926, HAUER 1953 and WULFERT 1966 are given (in μm).

	Caribbean samples		HARRING & MYERS	HAUER	WULFERT
	760	*102*	*102*		
total length	200	240	250	285	—	—
length of dorsal plate	120	165	170	220	204–217	136–138
width of dorsal plate	110	140	140	180	155–173	96–108
length of ventral plate	154	175	180	255	255–260	—
width of ventral plate	105	120	—	195	184–191	—
width of anterior margin	72	80	90	135	115–128	—
length of toes without claw	50	70	80	75	77– 79	34– 37
length of claw	15	15	20	45	36– 38	8

(53) **Lepadella imbricata** Harring, 1913 Fig. 42

The species was discovered in Panamá by HARRING (1914) and the type was described from the U.S.A., D.C. In both localities the ecological conditions were about the same: the species is periphytic. Recent records chiefly came from the neotropical region. In all cases *Lepadella imbricata* appears to be rare.
Palearctic region: U.S.S.R. (KUTIKOWA 1970), Japan (YAMAMOTO 1950).
Ethiopic region: Malaya (RUSSELL 1958).
Nearctic region: District of Columbia (type locality, HARRING 1914).
Neotropical region: Guatemala (HARRING 1916), Colombia (HAUER 1952), Venezuela (HAUER 1956), Amazonia (HAUER 1965), KOSTE 1974).

Lepadella imbricata proved to be very rare in our material, being met with in a single sample from Curaçao which had brackish water (Sta. 944, 1.9 g Cl'/l). The dimensions agree with those given by several authors, as indicated in the following table (measurements in μm):

	Caribbean	HARRING	HAUER
total length	125	128	125
length of lorica	84	86	92
width of lorica	48	54	55
width of anterior margin	31	29	29
depth of ventral sinus	15	18	15
length of foot groove	22	25	28
width of foot groove	12	15	13
length of foot	30	32	—
length of last joint	15	15	15
length of toes	28	27	26

(64) **Tripleuchlanis plicata** (Levander, 1894) Fig. 46

This species occurred in several samples, viz. from Grand Cayman, St. Martin, St. Barts, Bonaire, Curaçao and Aruba. The measurements of specimens from Bonaire, Curaçao and Aruba are quite near the upper limit of the dimension-curve known for the species (length dorsal plate 130 μm, width of same 104 μm, length of toes 35 μm, cf. MYERS, 1930 and VOIGT, 1957). The specimens of St. Martin (Sta. 1124) and St. Barts (Sta. 1122) are much larger (in μm):

	1	*2*	*3*
length of dorsal plate	145	150	180
length of ventral plate	155	160	190
width of dorsal plate	148	135	185
width of ventral plate	115	115	170
length of toes	25	28	55

We do not know the exact taxonomic value of this form, as the chlorinity in all the samples involved is in the same category, and the other ecological data also are much alike, as far as was noted (pH, abundance of vegetation). The form, described by RODEWALD

(1940) in lake Razelm, near the Danube delta, and found afterwards in the Wolga delta (KUTIKOWA, 1970) seems to be a good local race. It is larger than the nominal form (length of dorsal plate 140 μm, length of ventral plate 110 μm), and its measurements show much similarity with those of our "smaller" specimens. However, as long as the material available is not completed, we prefer abstaining from giving the large form a taxonomic status.

SUMMARY

1. In this paper, a study of Rotifers has been made of extensive material, collected in the Caribbean province by Dr. P. WAGENAAR HUMMELINCK, between 1930 and 1973.

2. 64 species of Rotifers have been found. For 19 of these, particulars are given on their morphology, ecology and biogeographical distribution.

3. *Lecane plesia* MYERS 1936 has been redescribed; the taxonomical status of *Hexarthra intermedia brasiliensis* has been discussed.

4. Three new species have been described: *Colurella althausae, Euchlanis perpusilla* and *Lecane hummelincki*.

5. Comments are given on *Brachionus calyciflorus* with large postero-lateral spines and on a giant form of *Tripleuchlanis plicata*.

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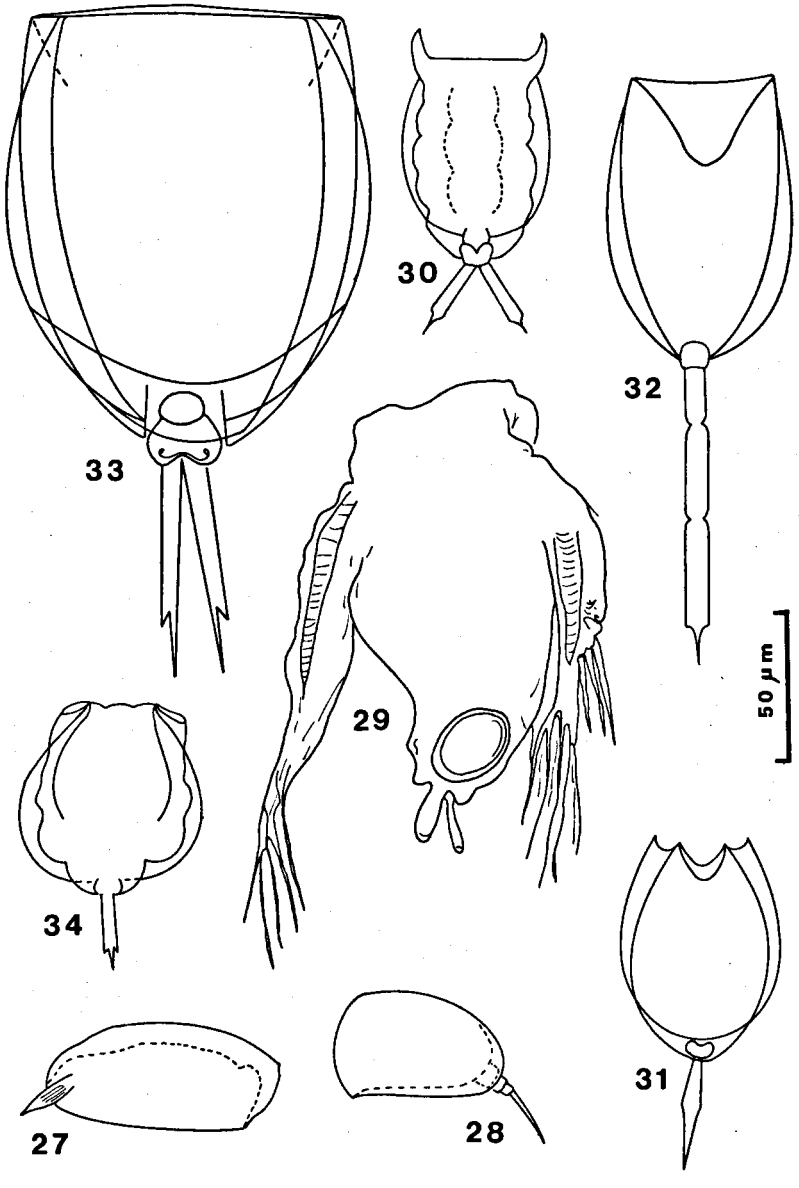


Fig. 27. *Colurella althausae*, sp. n.
Fig. 28. *Colurella anodonta* Carlin.
Fig. 29. *Hexarthra intermedia brasiliensis* Koste.
Fig. 30. *Lecane aculeata* Jakubski.
Fig. 31. *Lecane arcuata* (Bryce).
Fig. 32. *Lecane crenata* (Harring).
Fig. 33. *Lecane grandis* (Murray).
Fig. 34. *Lecane harringi* (Ahlstrom).

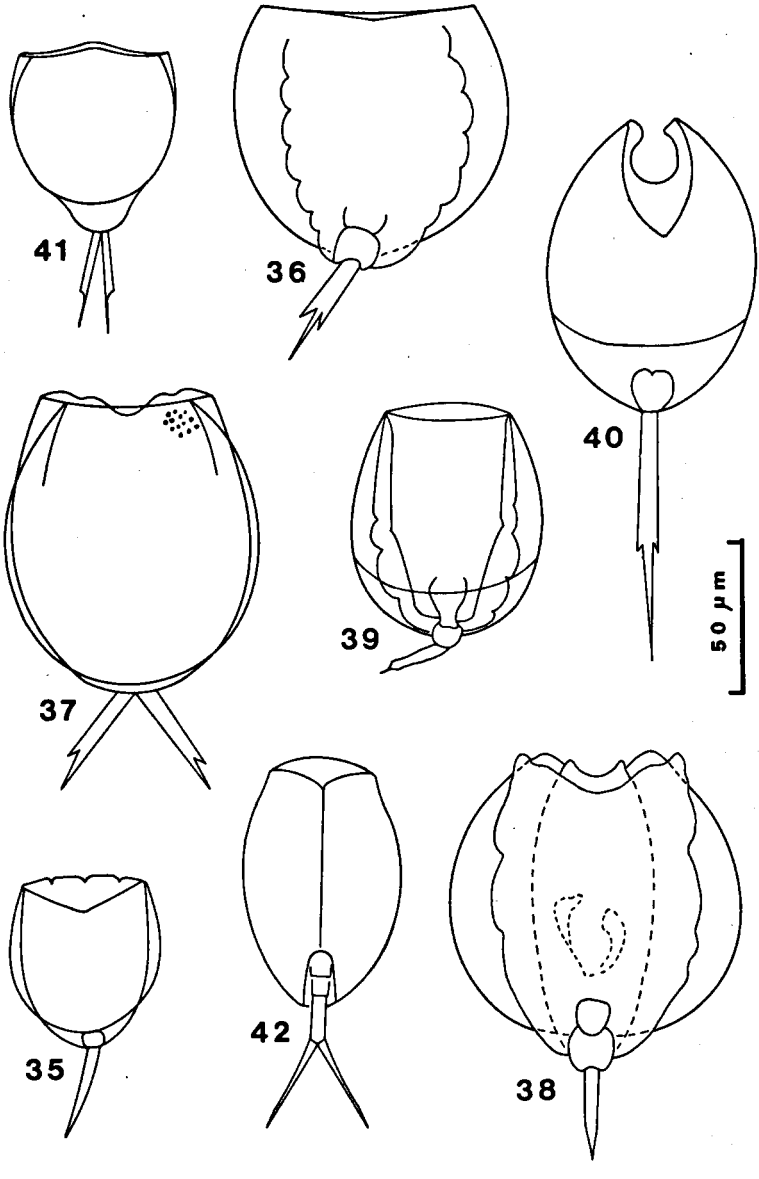


Fig. 35. *Lecane hummelincki*, sp. n.
Fig. 36. *Lecane obtusa* (Murray).
Fig. 37. *Lecane papuana* (Murray).
Fig. 38. *Lecane punctata* (Murray).
Fig. 39. *Lecane scutata* (Murray).
Fig. 40. *Lecane styrax* Harring & Myers.
Fig. 41. *Lecane tenuiseta* Harring.
Fig. 42. *Lepadella imbricata* Harring.

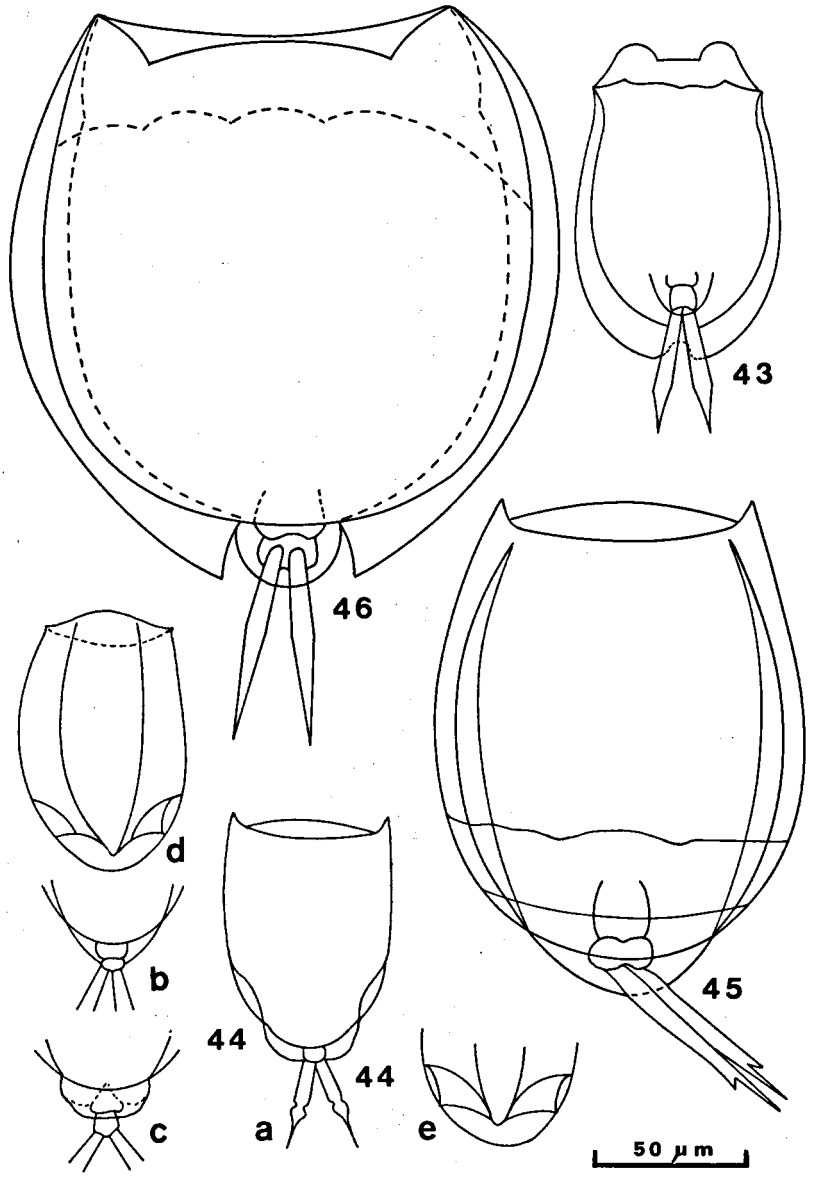


Fig. 43. *Euchlanis perpusilla*, sp. n.
Fig. 44. *Lecane plesia* Myers. – a: general aspect of the lorica; b and c: other variants of rear end of lorica; d: facetting of dorsal plate; e: variant in facetting.
Fig. 45. *Lecane ungulata* (Gosse).
Fig. 46. *Tripleuchlanis plicata* (Levander).

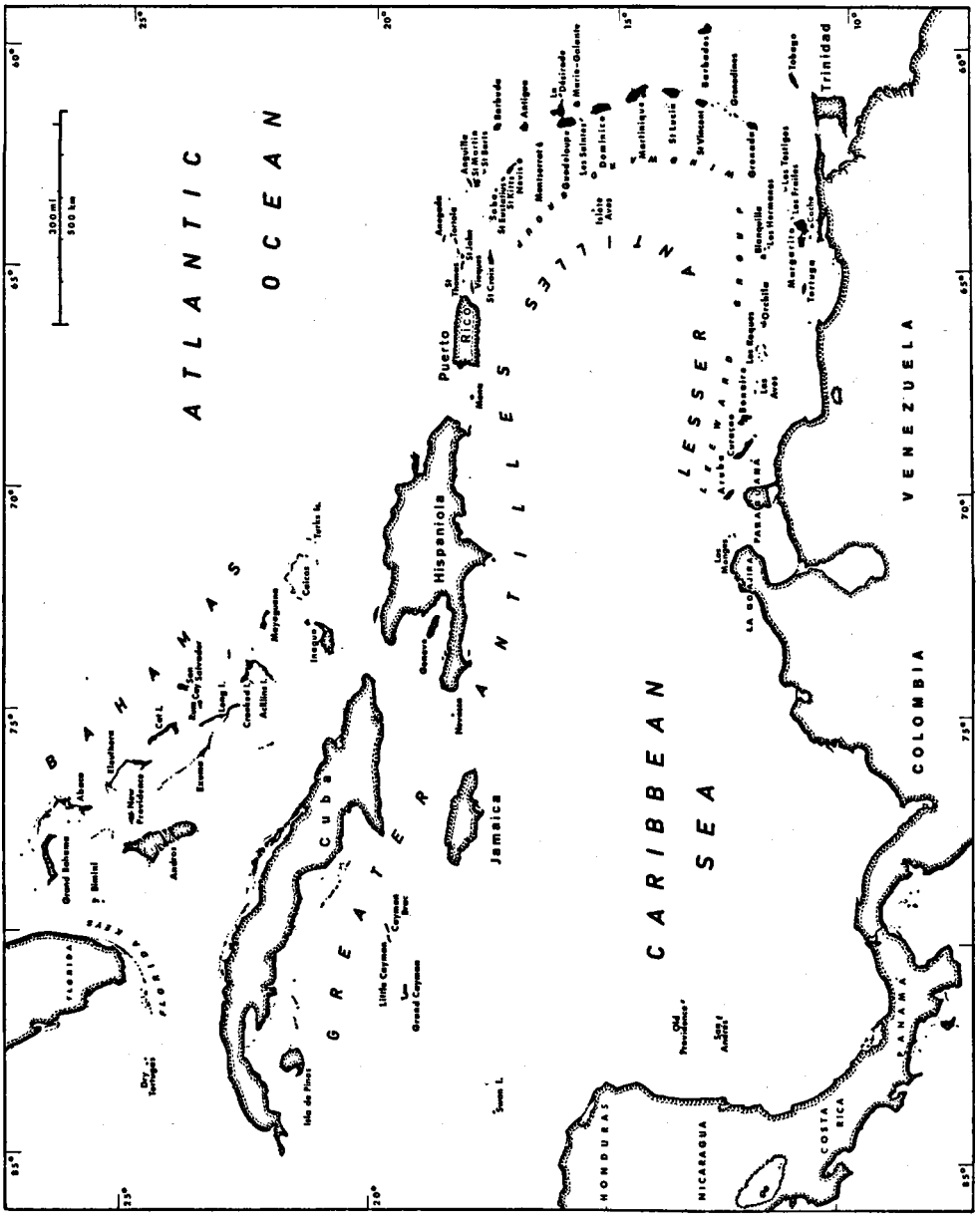
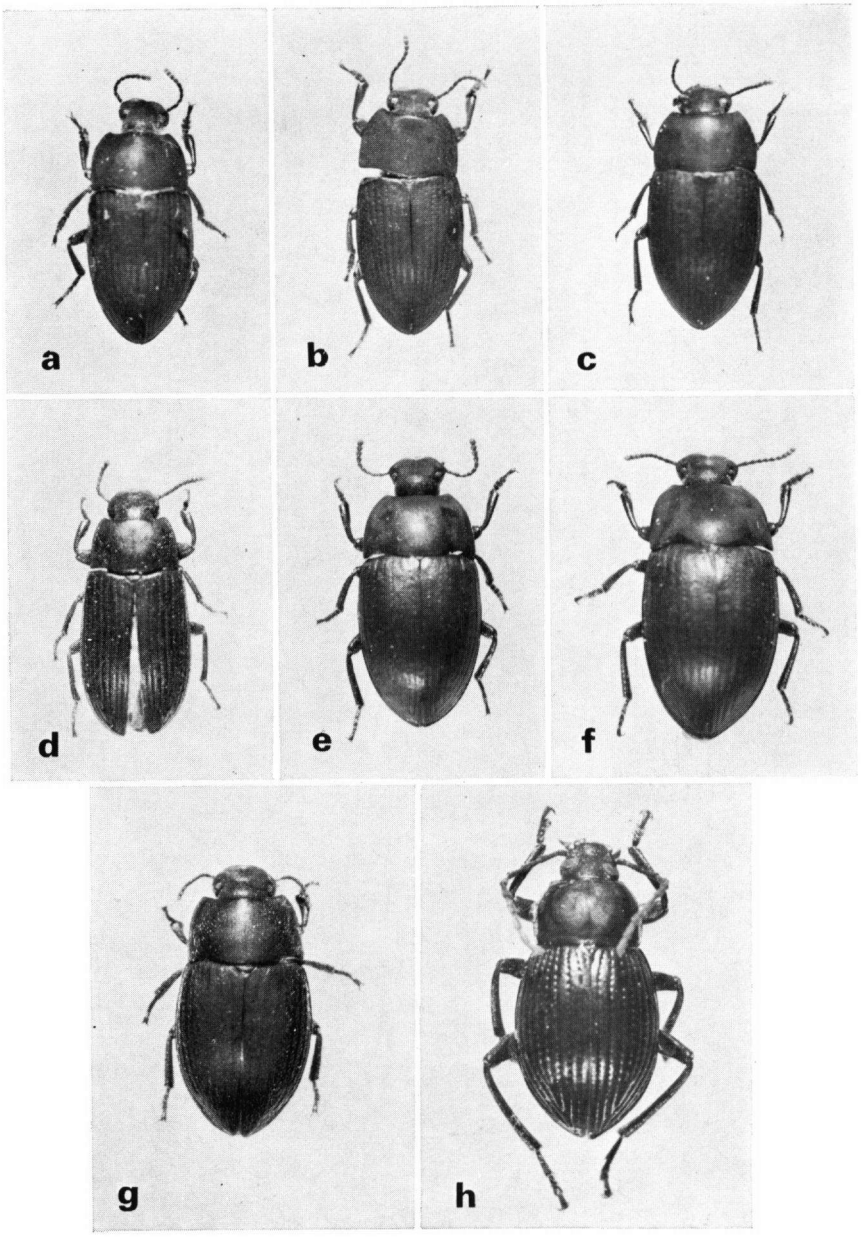
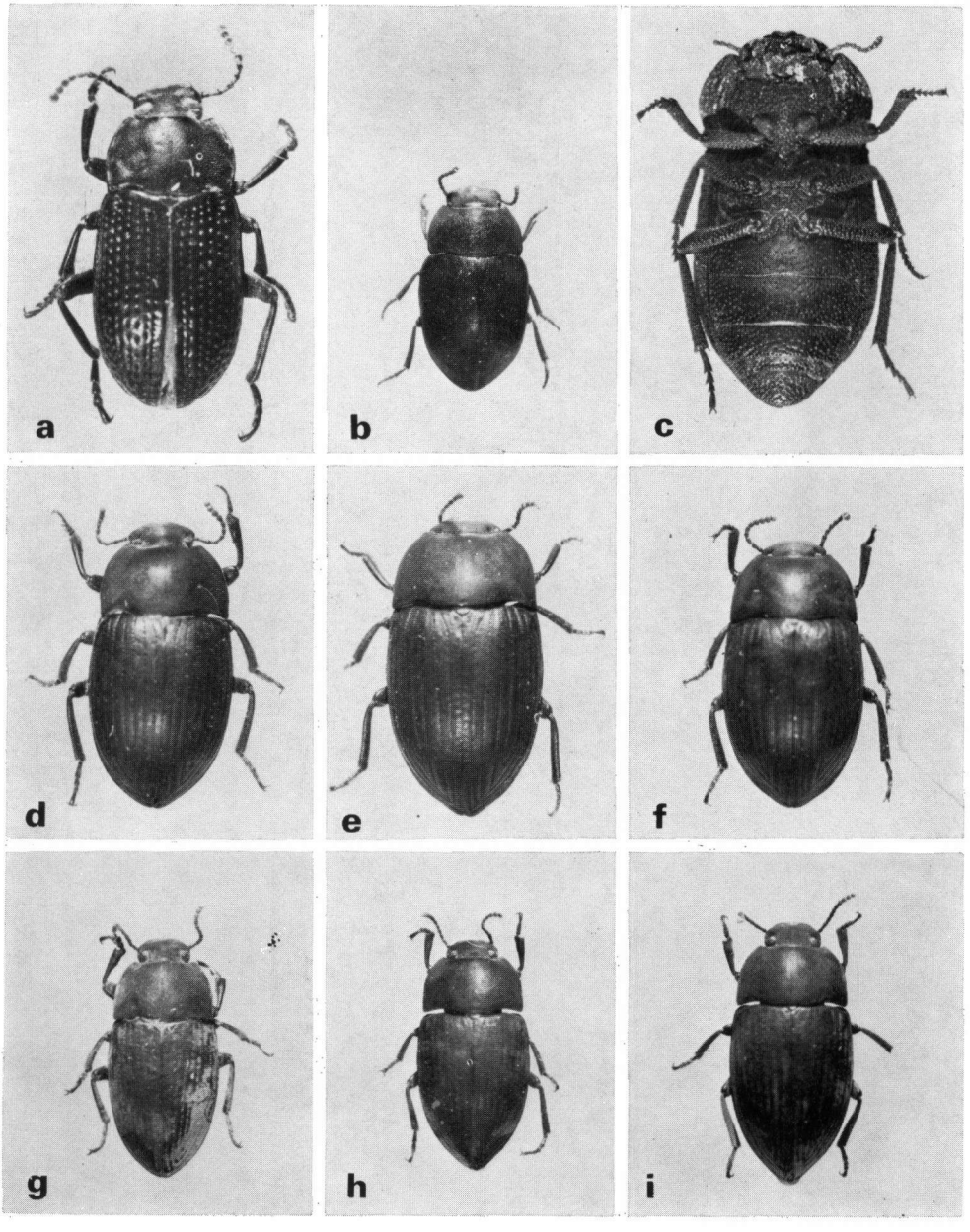


Fig. 47. Sketch-map of the CARIBBEAN REGION.

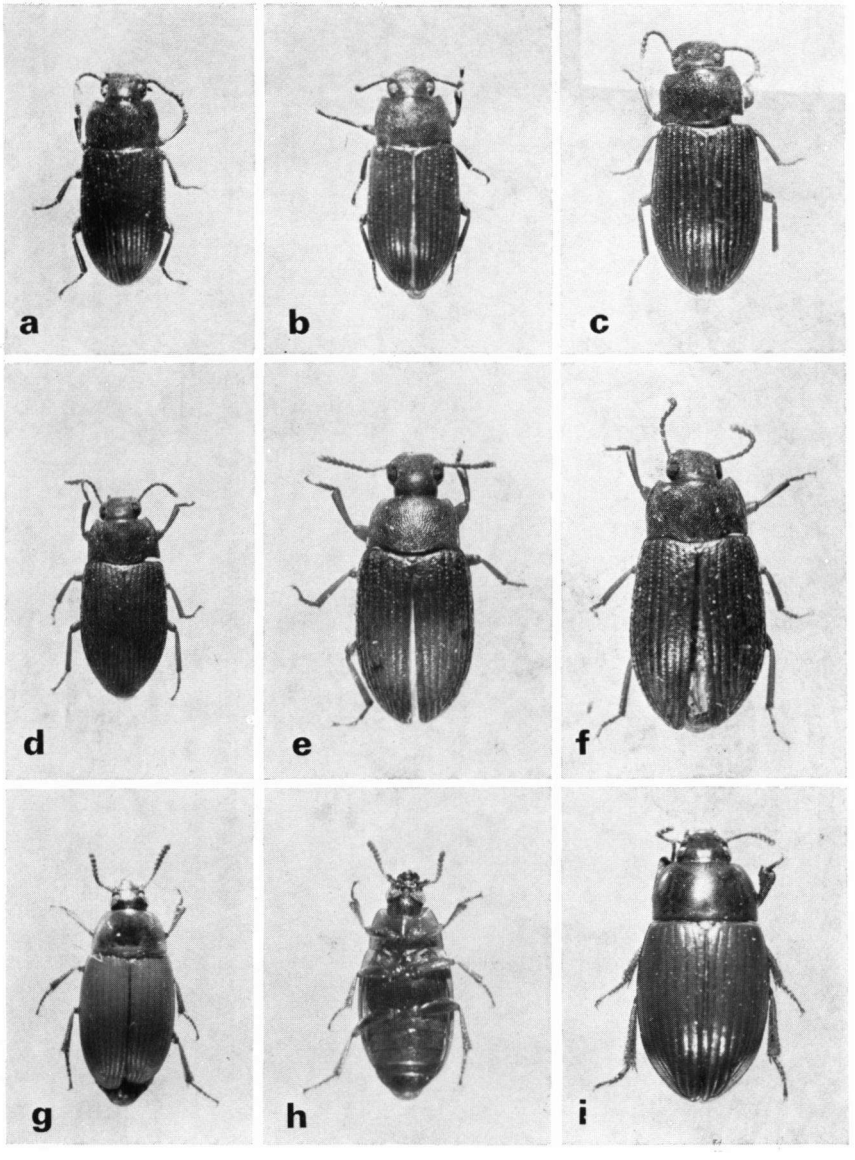


I. — a: *Opatrinus puertoricensis* n. sp., JAMAICA, Mona (Sta. 016), 6.V.1973. — b: *Trientoma kochii* n. sp., CAYMAN BRAC, South East Bay (s.n.), 30.V.1973. Holotype — c: *Branchus jamaicensis* n. sp., JAMAICA, Hellshire Hills (Sta. 011), 8.V.1973. Holotype. — d–f: *Diastolinus caymanensis* n. sp., CAYMAN BRAC; d, Stake Bay (Sta. 001), 1.VI.1973, ♂; e, Tibbett's Turn (Sta. 003), 29.V.1973, ♂; f, the same, ♀. — g–i: *Diastolinus dentipes* n. sp., GRAND CAYMAN, South Sound Road (Sta. 961), 20.V. 1973; g, ♂; h, ♀.

PLATE II

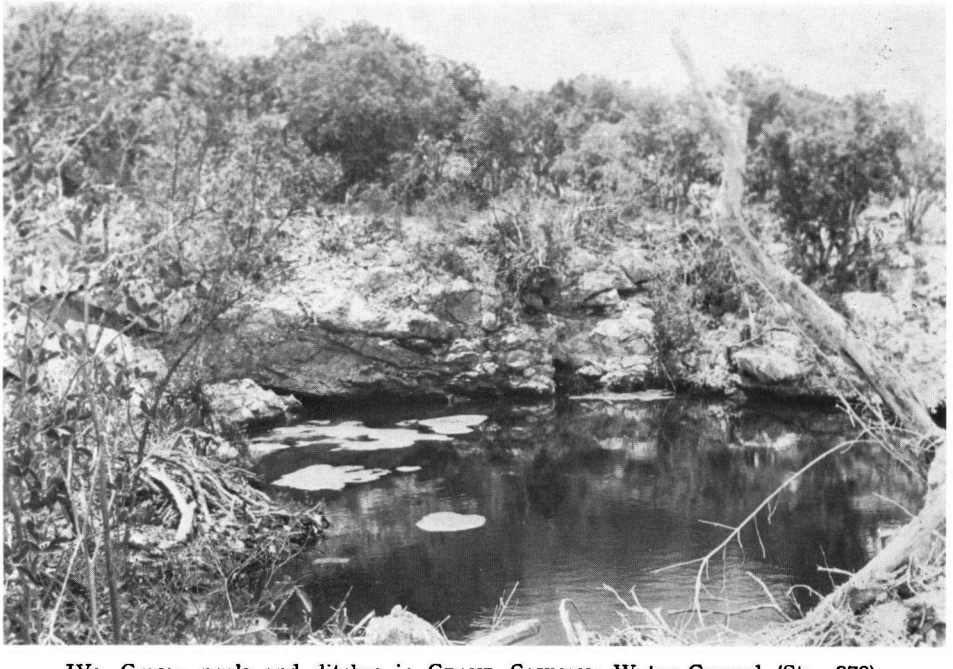


II. — *Diastolinus diformis* n. sp., GRAND CAYMAN; a–b: Walkers Road (Sta. 959), 20.V.1973; a, ♂; c, Water Ground (Sta. 979), 18.V.1973, ♀. — d: *Diastolinus inflatitibia* n. sp., JAMAICA, Arawak Museum (Sta. 012), 11.V.1973. — e–f: *Diastolinus minor* n. sp., LITTLE CAYMAN, Callabash Spot (Sta. 987), 5.VI.1973; e, ♀; f, ♂. — g: *Blapstinus opacus martinensis* n. subsp., ST. MARTIN, Grande Case (Sta. 057), 22.VI. 1973, ♀. — h: *Cyrtosoma jamaicensis* n. sp., JAMAICA, Arawak Museum (Sta. 012), 11.V.1973. Holotype.



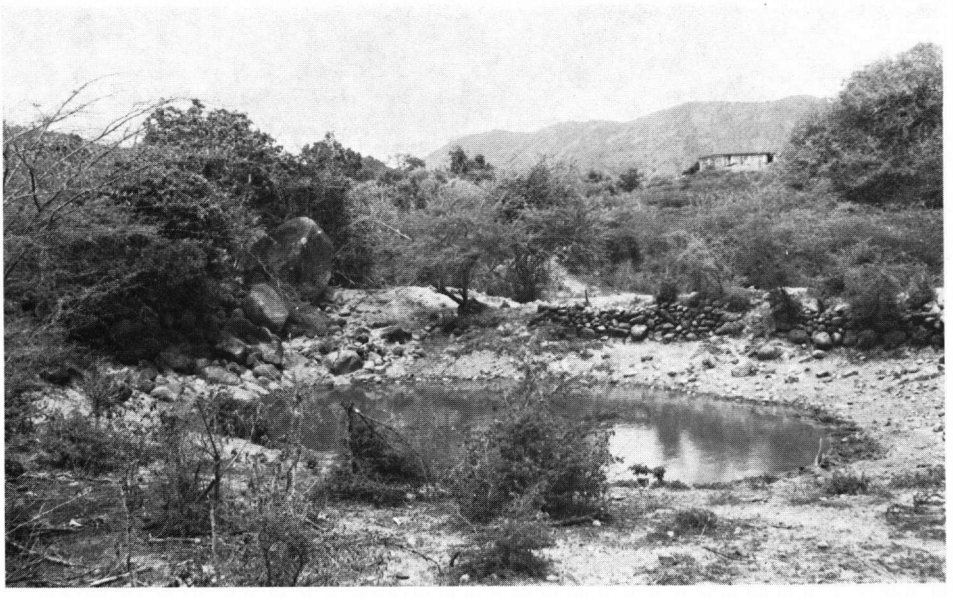
III. — a–b: *Blapstinus cubanus* Marcuzzi, GRAND CAYMAN; a, Botabano (Sta. 953), 18.V.1973, ♂; b, Air strip (Sta. 962), 21.V.1973, ♀. — c: *Blapstinus kulzeri* n. sp., JAMAICA, Yallahs (Sta. 020), 6.V.1973. — d–f: *Blapstinus* prope *sulcipennis* Champion, GRAND CAYMAN; d & f, Savannah Village (Sta. 967), 23.V.1973; f, ♀; e. Lower Valley (Sta. 968), 23.V.1973, ♂. — g–h: *Phaleria caymanensis* n. sp., GRAND CAYMAN, Boddentown (Sta. 970), 23.V.1973. — i: *Phaleria jamaicensis* n. sp., JAMAICA, Drunkemans Key (Sta. 023), 15.VI.1973. Holotype.

PLATE IV



IVa. Grassy pools and ditches in GRAND CAYMAN: Water Ground (Sta. 979), 18.V.1973.

IVb. Saline pool with tidal movements in the coastal limestone rocks along Simson Bay, recently "cleared" for recreation purposes, in ST. MARTIN: Devils Hole Swamp (Sta. 542d), 28.VI.1973.



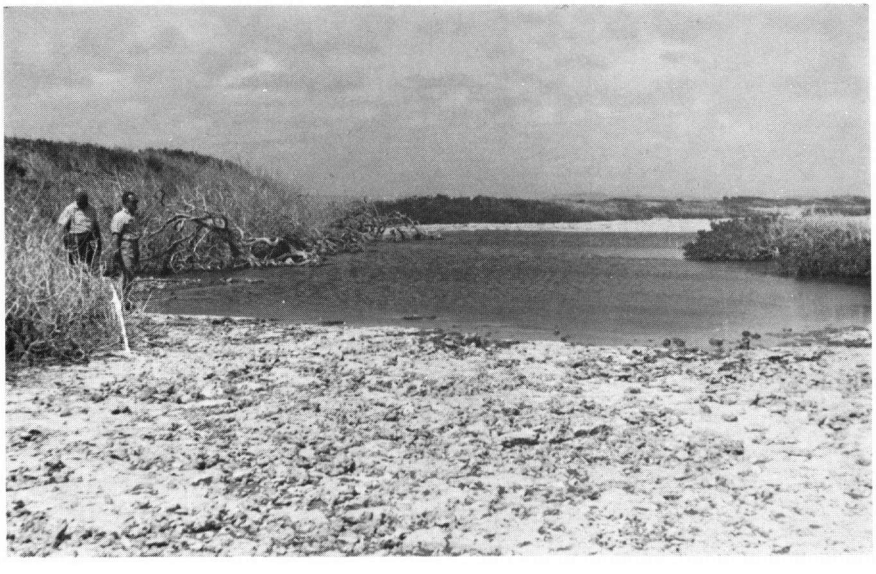
Va. Muddy, temporary cattle pool without vegetation on St. Martin: Slob of Belvedère (Sta. 094), 20.VII.1973.

Vb. Muddy, temporary cattle pool covered with duckweed near Philipsburg, St. Martin: Slob of Welgelegen (Sta. 097), 22.VII.1973.

PLATE VI

VIa. Muddy pools in a low-lying limestone terrace near Codrington, BARBUDA: Pools near Warden's House (Sta. 675/6), 5.VII.1955.

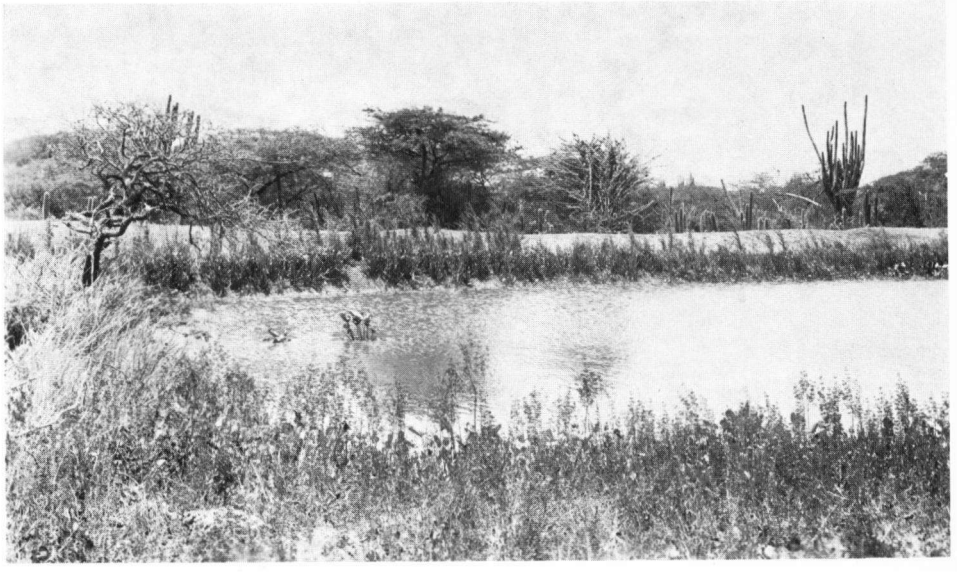
VIb. Muddy pool bordered by Mango trees in western MARGARITA: Poza Baranca (Sta. 12), 20.V.1936.



VIIa. Shallow pool in the barren diorite landscape of BLANQUILLA: Pozo de Aguada (Sta. 38), 22.VII.1936.

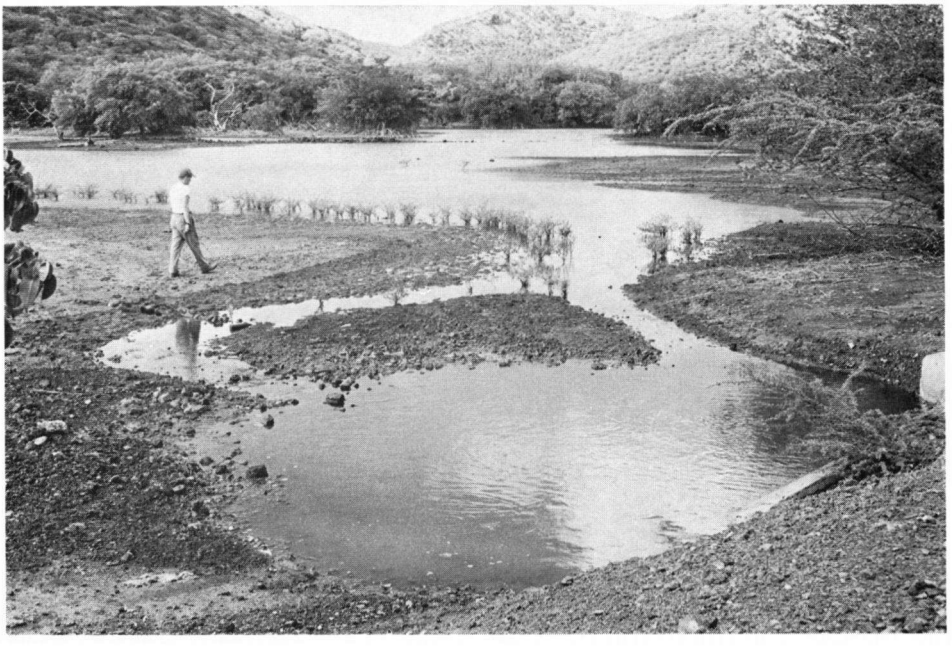
VIIb. Sheet of water on a low-lying limestone terrace, between trees of *Conocarpus erecta*, BONAIRE: Tanki south of Sorobon (Sta. 805), 6.XII.1963.

PLATE VIII



VIIIa. Semi-permanent pond constructed in a detritus-flat northeast of Kralendijk, BONAIRE: Tanki di Nene George (Sta. 50), 25.III.1937.

VIIIb. Overflowing, permanent well crowded with algae and phanerogams, in northwestern BONAIRE: Pos Bronswinkel (Sta. 44b), 23.VIII.1955.



IXa. Salina of St. Kruis, western CURAÇAO, inundated after rains, and connected with a semi-permanent swampy pool to the right of the photograph: Tanki di Molino S. Cruz (Sta. 944), 20.II.1970.

IXb. Pool in the garden of the CURAÇAO Museum, six years after its construction: Pool of Curaçaosch Museum (cf. Sta. 390), 31.VII.1955.

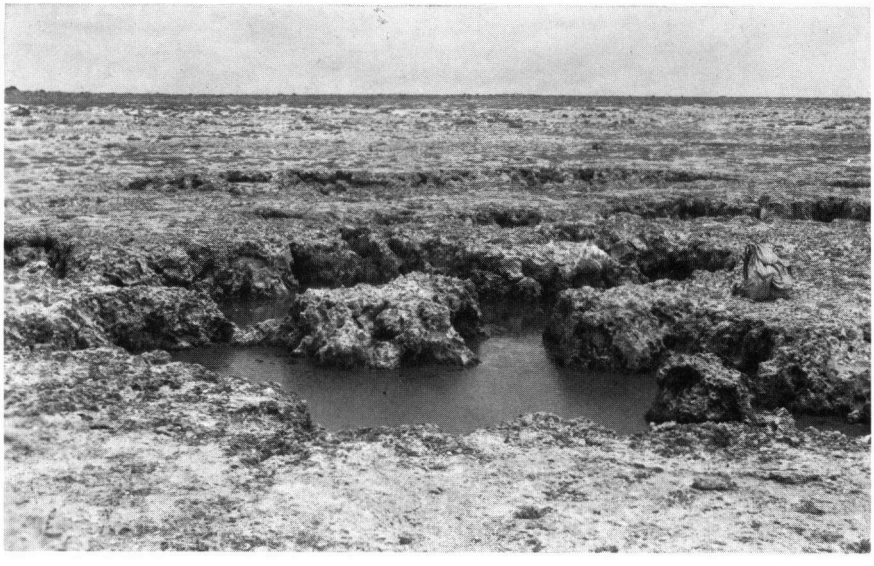
PLATE X

X. Semi-permanent gully with percolating brackish water, in a fairly well-wooded part of northwestern CURAÇAO: Rooi Sánchez (Sta. 87), 11.XI.1936.

XIa. Semi-permanent pools of brackish water on a mud flat along the north coast of ARUBA: Rooi Andicuri (Sta. 640), 11.V.1955.

XIb. Temporary sheet of water on a mud flat, with *Coccoloba uvifera*, in northwestern ARUBA: Tanki di Hofje Westpunt (Sta. 98), 9.XII.1936.

PLATE XII



XIIa. Muddy hole on the low-lying limestone flat of KLEIN CURAÇAO, exploited for guano in former days: Pos N of Lighthouse (Sta. 387), 1.X.1948.

XIIb. Small well in a narrow rim of coastal limestone in the arid northwestern part of LA GOAJIRA (Col.): Poza del Cabo de la Vela (Sta. 112), 22.I.1937.