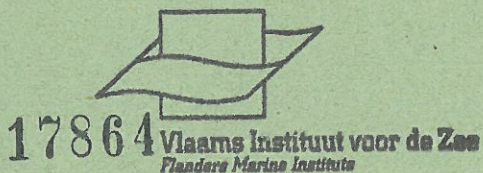


TARDIGRADA FROM CURAÇAO, BONAIRE AND LOS TESTIGOS

by

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TARDIGRADA FROM CURAÇAO, BONAIRE AND
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The following Tardigrada were collected from a few Antillean localities which were studied by Dr. P. WAGENAAR HUMMELINCK in 1930 and 1936. One discovery on floating Sargassum north of the Azores was added. It may be expected that much richer material will result from more thorough microscopic examination of the many samples still awaiting further study.

- Styraconyx sargassi*. on floating Sargassum, north of the
AZORES.
Echiniscoides sigismundi . . . in salt-water ponds, BONAIRE.
Macrobiotus rubens in a shallow cave, Isla de Conejo,
LOS TESTIGOS, Ven.
Macrobiotus spec. on a hill top, Morro Grande, LOS
TESTIGOS, Ven.
Macrobiotus spec. on a hill top, CURAÇAO.
Milnesium tardigradum . . . at a brackish-water spring,
CURAÇAO.

Styraconyx sargassi Thulin 1942 Figs. 23-24

North of the AZORES, lat. 43° 4' N, long. 31° W, on floating Sargassum, 21.XII.
1930.

The first identification of this material (MARCUS 1936, p. 24) was
rectified by THULIN (1942, p. 10), whose paper has escaped the

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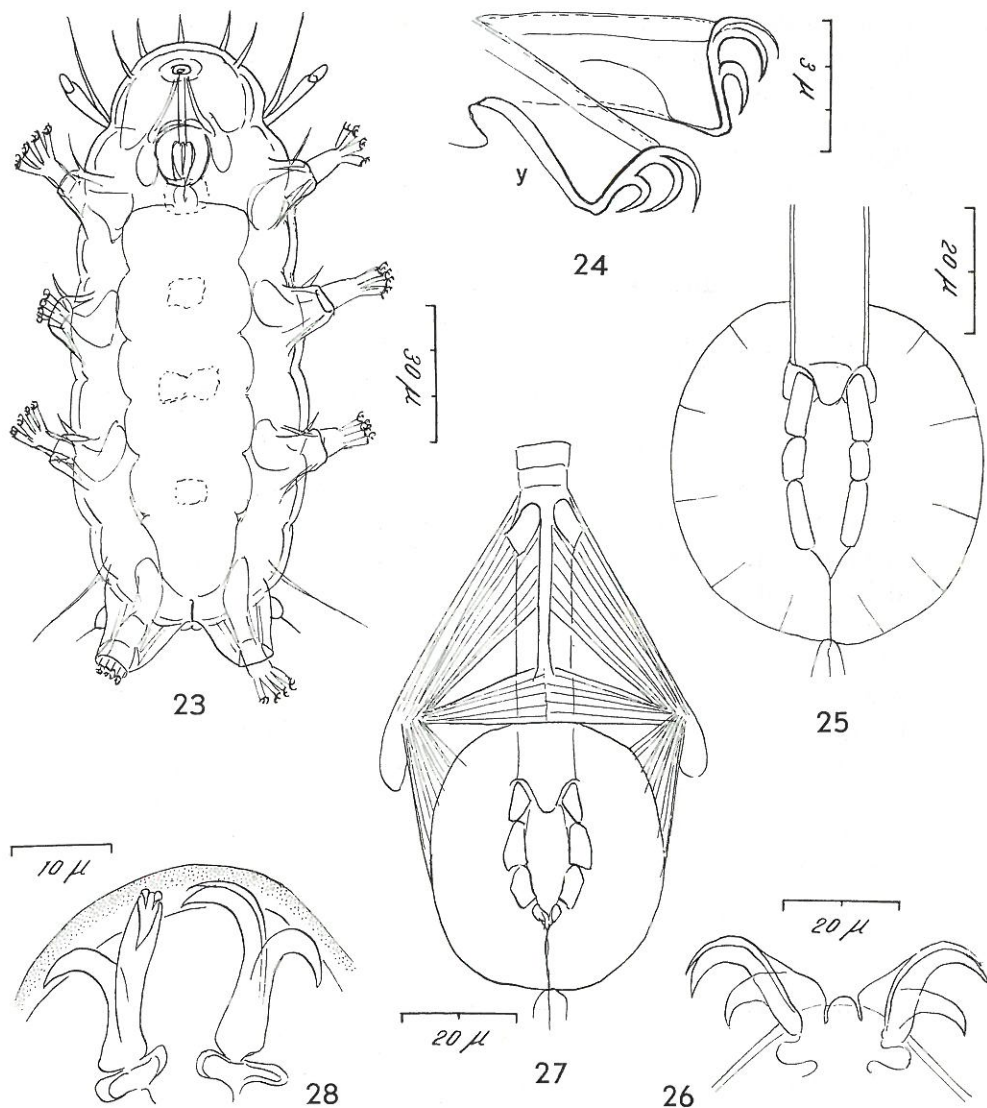


Fig. 23-24. *Styraconyx sargassi* Thulin from North of the Azores. — 23. Total aspect, ventral view. — 24. Two toes; y, stalk of claw.

Fig. 25-26. *Macrobiotus rubens* Murray from Los Testigos islands, Venezuela. — 25. Pharynx. — 26. Claws of fourth leg.

Fig. 27-28. *Macrobiotus* spec. from Los Testigos islands. — 27. Buccal apparatus. — 28. Claws of fourth leg.

notice of subsequent writers. I accepted THULIN's emendation (DU BOIS-REYMOND MARCUS 1952, p. 195-196), and indicated the records of this species.

Further distribution: Mediterranean coast of Spain, and Mallorca (RODRÍGUEZ-RODA 1947, 1952); Gulf of Mexico, coast of Texas (CHITWOOD 1951); Californian coast (MATHEWS 1938).

Echinoscoides sigismundi (M. Schultze 1865)

BONAIRE, North of Oranje Pan in Pekelmeer, among algae in flowing sea water percolating through wall of coral debris, 26 g Cl/l, about 29°C, 29.VIII.1932 (sta. 1085, from a sample collected by H. B. C. Schotborgh). — Oranje Pan, among algae in small pool behind porous wall of coral shingle, about 30-35 g Cl/l, about 32°C, 27.X.1930 (sta. 1087).

This most euryokous tardigrade lives in the highly saline Dead Sea and in the brackish harbour of Kiel, and was found in a soil sample taken from the Albert National Park, eastern Belgian Congo, at an altitude of 1000 m (TEUNISSEN 1938, p. 5).

Further distribution: Besides the localities previously mentioned (MARCUS 1936, p. 34) and other localities on European coasts, the species has been recorded from the Dead Sea (TEUNISSEN 1938); Rwindi, Belgian Congo (ibid.); Tenerife (RODRÍGUEZ-RODA 1945); Brazil, coast of São Paulo (DU BOIS-REYMOND MARCUS 1952); San Salvador (SCHULZ 1953); California, La Jolla (Dr. J. W. HEDGPETH, by letter); China, Tsingtao (MATHEWS 1937); north coast of Java (TEUNISSEN 1938).

Macrobiotus rubens J. Murray 1907 Figs. 25-26

Los TESTIGOS (Venezuela), Isla de Conejo, in dark part of shallow cave in porfiritic rock, 30 m above sea level on small island, 17.VI.1936 (sta. 165).

Pharynx and claws of the present female agree with those of *M. rubens*, and the 12 eggs released from the body were smooth. This character is exceptional in *Macrobiotus* (MARCUS 1936, p. 199; RAMAZZOTTI 1958, p. 85). The animal was preserved shortly before it cast its old skin, hence the eggs are ready for laying. Their number considerably exceeds the previous record of five. It is certainly

correlated with the greater size of the present specimen, viz. 660 μ as against 368–392 μ .

Measurements: Buccal apparatus 140 μ = 210 ms (thousandths of body length); diameter of gullet 16 μ = 26.7 cph (percentage of pharynx length); pharynx length 60 μ = 91 ms; width of pharynx 54 μ = 90 cph; length of the placoid row 31 μ ; placoids 11, 7, 11 μ = 18.3, 11.7, 18.3 cph; fourth claw 20 μ = 33 ms. Eggs 60 \times 70 μ .

Further distribution: Island of Ascension; Bolivia, 1,000–2,300 m; Colombia; southern Mexico; Australia, Blue Mountains, 1,000–1,700 m; Sumatra; Sikkim, Himalaya, 2,000 m; British East Africa.

Macrobotus spec. (*harmsworthi* J. Murray aff.) Figs. 27–28

Los TESTIGOS, Tamarindo, Morro Grande, among rock debris with plant decay 150–200 m above sea level on small island, 16.VI.1936 (sta. 162).

Body length 0.66 mm, finely granular cuticle (Fig. 28), wide gullet (diameter 11 μ), broadly oval pharynx (48–42 μ) with three macroplacoids 8, 10, and 8.5 μ in length, a distinct microplacoid, and claws united for half their length (*hufelandii* type). The eggs released from the body were too young to have processes.

Although it is impossible to name a *Macrobotus* without eggs except by reference to quite univocal other structures, e.g., peculiar sculpture, I tried to arrive at an approximate classification. No species of the *aculeatus* group (MARCUS 1936, p. 146; RAMAZZOTTI 1958, p. 86–88) has characters corresponding with those of the present tardigrade. Accordingly, it was necessary to consider the *intermedius* group, where minute cuticular granulation may occur (MARCUS 1936, p. 146 note). It is not impossible that the specimen belongs to *M. harmsworthi* J. Murray 1907. A synonymic species of this species (MARCUS 1936, p. 169, 171; RAMAZZOTTI 1945, p. 119), *Macrobotus tetradon* Della Valle 1914, is minutely stippled (“minutissimi puntini”).

Macrobotus spec.

CURAÇAO, western slope of Seroe Christoffel, 200 m above sea level; between debris of cherts with decaying leaves (pH 5-6), in considerable growth of small trees and shrubs, 10.XI.1936 (sta. 235).

The single specimen, a simplex stage, with claws of the *echinogenitus* type, contained 12 eggs with processes, the shape of which was not recognizable.

Milnesium tardigradum Doyère 1840

CURAÇAO, Rooi Sánchez, Knip, 190 m above sea level; in moistened leaf decay on cherts, in dense growth of shrubs, 11.XI.1936 (sta. 236).

The single specimen, 320 μ long, had two points on each of the branched claws ("Steighaken").

Further distribution: World-wide, including arctic and antarctic regions, from sea level to 6,600 m.

BIBLIOGRAPHY

- BOIS-REYMOND MARCUS, E. DU, 1952. On South American Malacopoda. *Bol. Fac. Fil. Ciên. Letr. S. Paulo Zoologia* 17, p. 189-209, pl. 1-4.
- CHITWOOD, B. G., 1951. A marine tardigrade from the Gulf of Mexico. *Texas Journal Sci.* 3, no 1, p. 111-112.
- DELLA VALLE, P., 1914. Fauna degli Astroni, No 7, Tardigrada. *Ann. Mus. Zool. Napoli (n.s.)* 3, *Suppl.* (1915), p. 1-36, pl. 8-11.
- DOYÈRE, L., 1840. Mémoire sur les Tardigrades (I). *Ann. Sci. nat. (2)* 17 (Zool.), p. 269-361, pl. 12-19.
- MARCUS, E., 1936. Tardigrada. *Das Tierreich* 66, xvii + 340 pp.
- MATHEWS, G. B., 1937. The Tardigrada or water-bears. *The China Journal* 26, no 2, p. 1-8 (of separate copy).
- MATHEWS, G. B., 1938. Tardigrada from North America. *Amer. Midl. Natural.* 19, no 3, p. 619-637.
- MURRAY, J., 1907. Water-bears or Tardigrada. *Journ. Queckett Club* (2) 10, no 60, p. 55-70, pl. 10.
- MURRAY, J., 1907a. Some Tardigrada of the Sikkim Himalaya. *Journ. R. Micr. Soc.* 1907, pt. 3, p. 269-273, pl. 14.

- RAMAZZOTTI, G., 1945. I Tardigradi d'Italia. *Mem. Ist. Ital. Idrobiol.* 2, p. 29-166.
- RAMAZZOTTI, G., 1958. Nuove tabelle di determinazione dei generi Macrobiotus e Hypsibius (Tardigradi). *Mem. Ist. Ital. Idrobiol.* 10, p. 69-120.
- RODRÍGUEZ-RODA, J., 1945. Contribución al estudio de los Tardigrados de España (II). *Inst. Biol. Aplic.* 2 (XII. 1946), p. 111-115.
- RODRÍGUEZ-RODA, J., 1947. Contribución al estudio de los Tardigrados de España (III). *Inst. Biol. Aplic.* 4 (XI. 1948), p. 101-106, 1 pl.
- RODRÍGUEZ-RODA, J., 1952. Tardigrados de la Fauna Española. *Trab. Mus. Cienc. Natur. (n.s.) Zool.* 1, no 4, p. 1-87, pl. 1-24.
- SCHULTZE, M., 1865. Echiniscus sigismundi, ein Arctiscoide der Nordsee. *Arch. mikr. Anat.* 1, p. 1-9 (of separate copy), pl. 26.
- SCHULZ, E., 1953. Eine neue Tardigradengattung von der pazifischen Küste. *Zool. Anz.* 151, p. 306-310.
- TEUNISSEN, R. J. H., 1938. Tardigraden. *Exploration du Parc National Albert, Mission de Witt* 16, 21 pp. (Inst. Parcs Nat. Congo Belge).
- THULIN, G., 1942. Ein neuer mariner Tardigrad. *Meddel. Göteborgs Mus. Zool.* 99 (K. Vet. Vitterh. Samh. Handl. 6 (B) 2, no 5), p. 1-10.

