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SOME MEGADRILI OLIGOCHAETA FROM THE CARIBBEAN REGION

by

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ABSTRACT

RIGHI, GILBERTO, 1995. Some megadrili oligochaeta of the Caribbean Region. *Studies Nat. Hist. Caribbean Region 72*, Amsterdam, 1993: 47-53.

Numerous Caribbean samples of the Megadrili – mainly peregrine anthropochorous species – are presented; and a description of *Diachaeta (D) bonairensis* sp. n. is given.

Key words: **Oligochaetae, *Diachaeta (D) bonairensis* sp. n., taxonomy, Antilles, Venezuela, Suriname.**

LIST OF LOCALITIES AND SPECIES

GRAND CAYMAN

960 – South Sound, 20.V.1973; sandy beach with decaying sea grass, mainly *Thalassia*. *(Pontodrilus bermudensis)*.

PUERTO RICO

695 – Las Mesas, E of Mayagüez, 20.IX.1963; wet leaf decay of mango. *(Amynthas rodericensis)*.

ST. MARTIN

830 – Baie aux Cailles, Terres Basses, 28.VII.1967; sandy beach with wet decay of mainly *Syringodium*. *(Pontodrilus bermudensis)*.

SABA

439C – Behind the Mountain (top of Mount Scenery), 8.VII.1973; decaying leaves and mould. (*Amynthas rodericensis*).

MONTSERRAT

837 – Plymouth, Agr. Exper. Gardens, 20.VII.1967; some plant debris. *(Dichogaster gracilis)*.

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DOMINICA

843 – Roseau, Botan. Gardens, 14.VII.1967; leaf decay and mould. *(Pontoscolex corethrurus, Perionyx excavatus).*

MARTINIQUE

764 – Islet Hardy, 11.II.1964; sand beach with layer of wet algae. *(Pontodrilus bermudensis).*

BARBADOS

869 – Wiltshire's Spring, Marley Vale, St. Philips, 6.VII.1967; flowing water from limestone debris with some small algae; 210 mg Cl'/l. *(Eudrilus eugeniae).*

BONAIRE

44Bb – Pos Bronswinkel, Nat. Park Washington, gutter of overflow, 19.III.1970; 580 mg Cl'/l. *(Ocnerodrilus occidentalis).*

48g – Fontein, near spring, 8.IX.1967; flowing water 20 x 20 cm, some muddy leaf decay, 28.5 °C; 400 mg Cl'/l. *(Dichogaster bolaui).*

48Aa – Idem, cemented gutter, 8.IX.1967; same with roots and algae. *(Ocnerodrilus occidentalis, Dich. bolaui).*

48Ab – Idem, 8.III.1970; same with coating of algae; ?400 mg Cl'/l. *(Ocner. occid., Dich. bolaui).*

48Ac – Idem, 17.VIII.1973; in part stagnant with slimy algae; ?450 mg Cl'/l. *(Ocner. occid.).*

48E – Idem, overflow of cistern, 8.IX.1967; sandy mud; ?500 mg Cl'/l. *(Polypheretima elongata, Dich. bolaui).*

52g – Pos Ichi, S of Kralendijk, 17.III.1970; muddy pool in limestone often with detached algae, turbid, 28-34°C; 100 mg Cl'/l. *(Ocnerodrilus occidentalis).*

193C – Hofje Fontein, 8.IX.1967; mosses and limestone deposits from overflow on wall (cf 48E). *(Ocnerodrilus occidentalis, Dichogaster bolaui).*

872 – Lac, Playa Mangel Altu, 23.VIII.1967; sandy beach with decay of *Thalassia, Syringodium* and *Avicennia. (Pontodrilus bermudensis).*

937 – Hofje Bronswinkel, 19.III.1970; abandoned fruit garden on porfiritic rock with sparse debris of xerophitic vegetation. *(Diachaeta bonairensis).*

1065 – Lac, entrance to Puitu, 17.IX.1948; mudflat with *Halimeda* and *Thalassia. (Ocnerodrilus occidentalis).*

CURAÇAO

819 – Boca Grandi, Savonet, 19.XI.1963; sandy beach with decaying *Sargassum. (Pontodrilus bermudensis).*

904 – Awa di Oostpunt, 21.IX.1968; sandy beach with decaying *Thalassia. (Pontodrilus bermudensis).*

VENEZUELA

919 – Caracas, Jardín Botánico, 10.XI.1968; rocky slope with plant decay. *(Amynthas rodericensis).*

SURINAME

829 – Suriname River at Brokopondo, 27.II.1964; pools in dry river bed abt 50 mg Cl'/l. *(Pontoscolex corethrurus).*

For more details and maps of the localities see HUMMELINCK (1933; 1940a; 1940b; 1953; 1977; 1981).

LIST OF SPECIES

Number of specimens examined in parentheses.

Glossoscolecidae

Diachaeta (D.) bonairensis, n. sp. – Bonaire, 937 (1).
Pontoscolex (P.) corethrurus (Müller, 1857) – Dominica, 843 (1); Suriname, 829 (15).

Ocnerodrilidae

Ocnerodrilus occidentalis Eisen, 1978 – Bonaire, 44Bb (9), 48Aa (12), 48Ab (6), 48Ac (5), 52g (1), 193C (21), 1064 (1).

Megascolecidae

Amynthas rodericensis (Grube, 1879) – Puerto Rico, 695 (3); Saba, 439C (1); Venezuela, 919 (2).
Polypheretima elongata (Perrier, 1872) – Bonaire, 48E (1).
Perionyx excavatus Perrier, 1872 – Dominica, 843 (9).

Acanthodrilidae

Pontodrilus bermudensis Beddard, 1891 – Grand Cayman, 960 (9); St. Martin, 830 (14); Martinique, 764 (3); Bonaire, 872 (8); Curaçao, 819 (7), 904 (5).
All specimens from sand beaches with decaying *Thalassia* or/and algae.

Octochaetidae

Dichogaster bolaui (Michaelsen, 1891) – Bonaire, 48g (1), 48Aa (1), 48Ab (2), 48E (19), 193C (4). – MICHAELSEN (1933: 350) mentions this species from Bonaire (Fontein, 48b) and Curaçao (Hato, Boca di Leeuw, June 1931).
Dichogaster gracilis (Michaelsen, 1892) – Montserrat, 837 (2).

Eudrilidae

Eudrilus eugeniae (Kinberg, 1867) – Saba, 439C (12); Barbados, 869 (1).

Diachaeta (D.) bonairensis, sp. n.

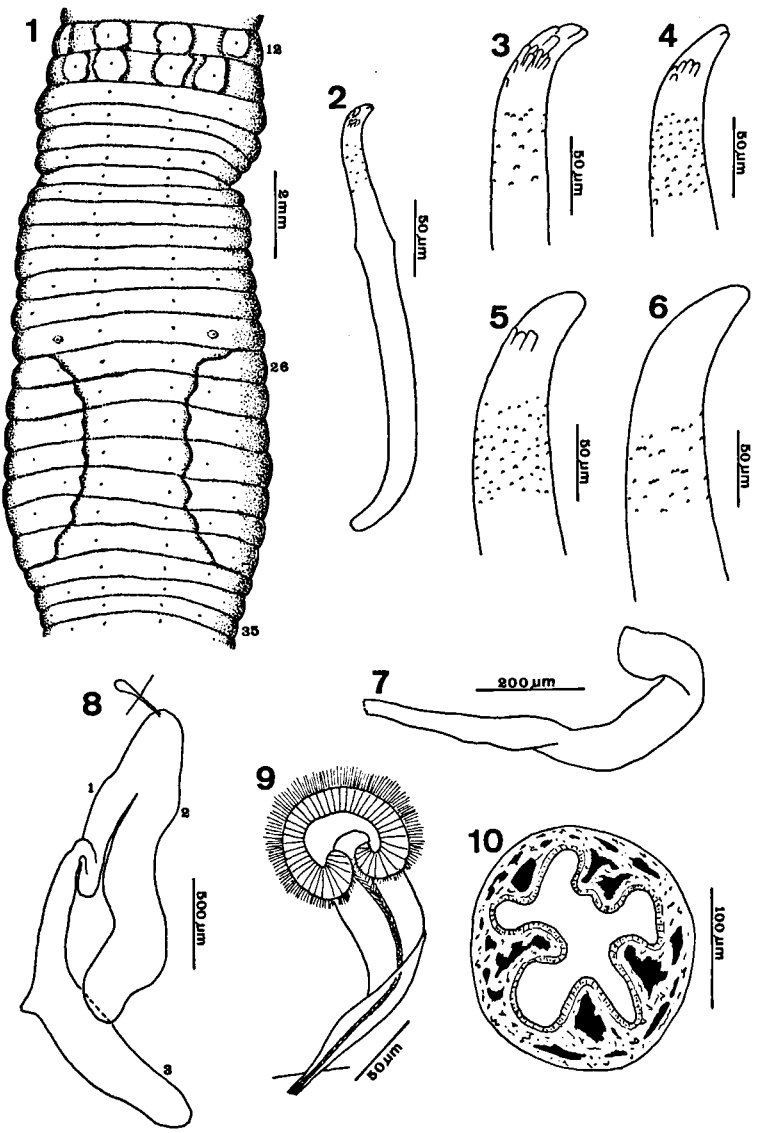
(Figs. 1-10)

Material: BONAIRE, Hofje Bronswinkel, 19.III.1970, P. WAGENAAR HUMMELINCK, sta. 937 – 1 clitellate specimen (ZU-1122), type.

Description: Length 210 mm. Diameter in the pre-clitellar region (segment X) 4.3 mm, in the clitellum 6.0 mm, in the median and posterior body

region 2.6 – 3.0 mm. Number of segments 386. Pigment absent. The invaginated prostomium is tentaculiform and as long as segments I – IV, its longitudinal musculature is continuous with that of V. The surface of segments I – II has longitudinal furrows, the others are smooth. There are 8 setae per segment from II on. The setae *a* are arranged in 2 regular series and the setae *b*, *c* and *d* have alternate disposition in successive segments (Fig. 1). They are lengthened sigmate, the nodulus is distal and the apical half ornamented (Fig. 2). In the median body region the setae apex is slightly bicuspid and the convex portion has many truncate scales (Fig. 3), seldom few (Fig. 4). In the posterior body region the setae are unicuspid with few scales (Fig. 5), sometimes they are missing (Fig. 6). The sub-apical region of every setae has a lot of small thorns, which are isolated or clustered in short transversal groups. The length of the setae varies in the middle body region between 220 – 228 μm (M = 255 μm and in the posterior region 246 – 372 μm (M = 343 μm), the setae *a* are the biggest. There are no genital setae. The dark-grey clitellum lies in XVIII – XXXIII (=16), it is ring-shaped in XVIII – XXV and saddle-shaped backwards. One pair of wide puberty ridges extends from XXVI – XXXII (Fig. 1); its lateral margin is straight near the nephridiopores and the medial one is re-entrant in *ab* of every segment. Roughly quadrangular genital papillae contain each seta *a* and *b* of XII and XIII. One pair of small and prominent areae has setae *b* of XXV. The microscopical male, female and spermathecal pores are not seen from the outside.

The septa 6/7 – 10/11 are very thick and muscular, the 11/12 is only a little thickened and the others are slender and fragile. The septa 6/7 – 20/21 are like interpenetrated cones; the others are plain. The parietal insertion of the septa 6/7 – 10/11 are regular along their corresponding intersegmental grooves; septum 11/12 attaches dorsally to intersegment 13/14 and ventrally to its own intersegment; the insertion of the following septa becomes successively more regular until 20/21. One cylindrical and strongly muscular gizzard lies in VI. The esophagus presents whitish lateral swellings in VII – IX and under them start the 3 pairs of small fingerlike calciferous glands. Each gland has a wide axial cavity and some thick longitudinal lamellae (Fig. 10). The transition esophagus-intestine is in 20/21. The intestine is enlarged in XXI – XXXIV, with small dorsal typhlosole. The typhlosole height grows up to XL and it goes backwards like a simple and slightly wavy blade, as high as the intestinal diameter. The dorsal vessel, moniliform from XXI forwards, does



FIGURES 1-10. *Diachaeta (D.) bonairensis*: 1. Ventral surface of segments XII – XXXV.- 2. Ventral seta of the median body region. – 3-4. Apex of setae of the median body region. – 5-6. Apex of setae of the posterior body region. – 7. Spermatheca of 8/9. – 8. Post-clitellar nephridium with loops I – III. – 9. Funnel of post-clitellar nephridium. – 10. Transverse section of one calciferous gland.

not make lateral loops. The sub-neural vessel is recognized from XII backwards. There are 2 pairs of strong intestinal hearts in X – XI and 3 pairs of slender lateral hearts in VII – IX. Each segment has a pair of holonephridia (Fig. 8) with intersegmental nephridiopore openings in the dorsal line of setae *c*, without well marked sphincter. The funnel of every post-clitellar nephridia is simple and its nephrostome has a horse-shoe upper lip (Fig. 9). In the postseptal portion the wide tube starts from the distal part of loop I and connects with the ventral portion of the bladder (loop III).

The pairs of testic sacs merges dorsally and ventrally forming a wide ring around the esophagus and hearts in XI. The pair of band-like seminal vesicles runs at the sides of the intestine until CL; its surface is smooth up to XLIV and nodular backwards; from XCV on they send out short and nodular lateral branches, some branches are bifurcated. The vasa deferentia run on the inner surface of the body wall until 27/28, where they pierce the parietes into the median line of the ridges of puberty. Ovaries and female funnels where not seen. Three pairs of spermathecae are in VI – VIII, opening in the dorsal line of setae *c* of 6/7 – 8/9. They are lengthened sac-like, without distinction between duct and ampulla (Fig. 7). The spermathecae of VI are the smallest and those of VII – VIII have similar size.

Remarks: *Diachaeta (D.) thomasi* Benham, 1887 and *D. (D.) hesperidium* (Beddard, 1895) *sensu* Righi (1984) are very similar to *D. (D.) bonairensis*. The three species may be variations of one highly polymorphous species. However I prefer to keep them apart on account of the male pores: *thomasi* in XXII (BENHAM *l.c.*), *hesperidium* in XXIV (BEDDARD 1895) and *bonairensis* in 27/28.

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