

RECORDS OF *LIMNODRILOIDES* (OLIGOCHAETA: TUBIFICIDAE) FROM VENEZUELA

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Abstract.—*Limnodriloides claviger* Erséus, 1982, *L. rubicundus* Erséus, 1982, and *L. monotheucus* Cook, 1974, are reported from Bahía de Amuay in Venezuela. These records support the view that the South Caribbean marine Tubificidae largely comprise elements present throughout the Caribbean area and along the southeast coast of USA.

The published records of marine Oligochaeta from the Caribbean coast of South America are sparse. Only one species, *Tectidrilus verrucosus* (Cook), has been reported from Venezuela (Erséus 1982), but Righi and Kanner (1979) described *T. bori* (as *Limnodriloides bori*), *Marcusaedrilus hummelincki*, *Thalassodrilides gurwitschi* (Hrabě) (as *Curacaodrilus sinus*), *Kaketio ineri*, and *Bathydrilus adriaticus* (Hrabě) (as *Phallogrilus adriaticus caraibicus* (for nomenclature, see Erséus 1981, 1982, 1985) from Aruba, Curaçao and Bonaire, islands situated just off Venezuela. *Thalassodrilides belli* (Cook) was recorded from Trinidad by Erséus (1981).

In 1981, marine biological impact studies for an oil refinery were performed in Bahía de Amuay near Punto Fijo (11°42'N, 70°13'W) on the Paraguana Peninsula, Falcon, Venezuela, by AWARE, Inc., Nashville, Tennessee, USA. During the work a few tubificid oligochaetes were collected. The material represents at least three species of *Limnodriloides* Pierantoni; some sexually immature individuals could not be identified. The species are accounted for in the present note.

Materials and Methods

The material was first given to the late Dr. H. R. Baker (University of Victoria, Victoria, B.C., Canada), who stained and mounted the specimens in Canada balsam,

but who never started to work on the collection. By the courtesy of Ms. R. D. Kathman (E.V.S. Consultants, Sidney, B.C.) and Dr. R. O. Brinkhurst (Institute of Ocean Sciences, Sidney, B.C.) Baker's slides were transferred to the present author's collection.

Limnodriloides claviger Erséus, 1982
Fig. 1

Limnodriloides claviger Erséus, 1982:221-222, fig. 6, tables 1, 4.

New material.—One specimen from off Punta Piedras, S of mouth of Bahía de Amuay, about 15 m, mud.

Remarks.—This species was originally described on the basis of five specimens from Barbados and Bermuda. It is characterized by its small, club-shaped atria, with poorly developed prostate glands (cf. Fig. 1). The worm from Venezuela conforms in most features with the original material, but a few differences should be noted.

The new specimen is 5.6 mm long and consists of 52 segments, which is longer than any of the old individuals (only complete specimen was 3.2 mm, 29 segments). Its setae are, however, smaller; only 25-35 μm long, about 1.5 μm thick, as opposed to 40-50 μm long, about 2 μm thick for the type series. The atria (Fig. 1) are about 145 μm long (about 125 μm in original material), and the spermathecae have slender ampul-

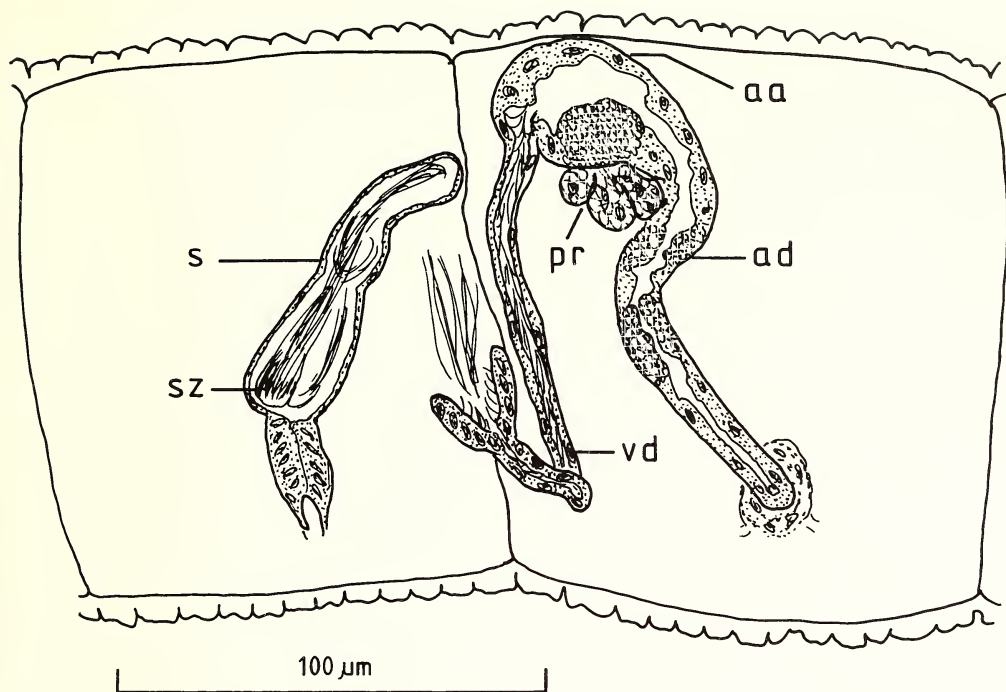


Fig. 1. *Limnodriloides claviger* Erséus, 1982; specimen from Bahía de Amuay, Venezuela. Lateral view of spermatheca and male duct. aa, atrial ampulla; ad, atrial duct; pr, prostate gland; s, spermatheca; sz, spermatozeugma?; vd, vas deferens.

lae, up to about $75\ \mu\text{m}$ long (up to $55\ \mu\text{m}$ in original material). All these dimensional differences can be regarded as intraspecific and are not even necessarily true geographic variation; they may be caused by different nutritional or other ecological circumstances. A more qualitative difference, which may reflect geographic variation, is the fact that some posterior 'bundles' of the new worm are unisetal (all posterior bundles bisetal in type series).

According to the original description the walls of the spermathecal ampullae consist of "large (vacuolized?) cells," and the sperm is arranged in "narrow bundles" within the ampullae. In the new individual the 'vacuoles' of the wall appear to be absent, possibly indicating that the ampullae are more fully developed ('stretched'), and at least one of the sperm bundles has a torch-shaped end, which characterizes the simple kind of spermatozeugmata found in many species

of the subfamily Limnodriloidinae (cf. Erséus 1982:265). Previously, the absence of spermatozeugmata was regarded as a distinguishing feature of *L. claviger*, particularly for its separation from the closely related, European, *L. pierantonii* (Hrabě). Still, however, the small, round atrial ampullae, the minute prostate glands, and the very simple pseudopenes make *L. claviger* a distinct species.

Distribution and habitat.—Bermuda, Barbados and Venezuela. Subtidal muddy sediments, 5–15 m depth.

Limnodriloides rubicundus Erséus, 1982

Limnodriloides rubicundus Erséus, 1982: 226–228, fig. 10, tables 1–2.

New material.—Four specimens from S part of Bahía de Amuay, about 3 m, mud.

Remarks.—The new specimens, which conform well with the original description,

represent a considerable range extension of the species. *Limnodriloides rubicundus* was previously known from Bahamas, Bermuda and the SE coast of USA (Florida through Delaware). It occurs in muddy bottoms down to at least 74 m depth.

Limnodriloides monotheucus Cook, 1974

Limnodriloides monotheucus Cook, 1974: 131–132, fig. 3.—Erséus 1982:250–253, figs. 28–29, tables 1, 3.

New material.—One specimen from NE part of Bahía de Amuay, about 4 m, mud with seagrass.

Remarks.—As currently delimited, *L. monotheucus* is a very widely distributed species, recorded from the Pacific coasts of Canada, USA and Mexico, Atlantic coast of USA (Gulf of Mexico, Florida through New Jersey), Bermuda, Barbados, and the Mediterranean Sea (Yugoslavia). It was noted by Erséus (1982), however, that the worms from Barbados had spermatozoegmata which were stouter than those from specimens available from other areas, and that this may indicate that a separate (tropical) species is involved. The worm from Venezuela is, with regard to this character, very similar to the specimens from Barbados.

Like the preceding species, *L. monotheucus* is a subtidal species, and it has been found down to 370 m depth. It also appears to prefer muddy sediments.

Discussion

The previous, scanty records from the southern Caribbean indicated that the marine tubificid fauna of this area basically is

a pan-Caribbean one, with links also to the fauna of the east coast of North America. The additional information represented here strongly supports this. *Limnodriloides claviger*, *L. rubicundus* and *L. monotheucus* now can be regarded as present through the Caribbean area, possibly with the reservation that *L. monotheucus*, as noted above, may be a composite taxon actually including more than one species.

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