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MARYCARMENIA LYSANDRAE, A NEW GENUS AND INTERSTITIAL SPECIES (POLYCHAETA: DORVILLEIDAE) FROM MADEIRA

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ABSTRACT

Marycarmenia new genus, is erected for *Protodorvillea gaspeensis* Pettibone, 1961, being removed from the genus *Protodorvillea* Pettibone, 1961. The new species *M. lysandrae* resembles *P. gaspeensis* in the form of the body, prostomial appendages, uniramous parapodia without notoacicula and dorsal cirri, kinds of neurosetae and jaw apparatus, without maxillary carriers and basal plates, and with two main rows of free maxillary denticles. The genus *Marycarmenia* is related to *Meiodorvillea* Jumars, 1974, and presents numerous convergent characters with *Pettiboneia* Orensanz, 1973.

The number of genera described in the family Dorvilledae has increased notably in recent: from 20 (Hilbig and Blake, 1991) to 33 (Eibye-Jacobsen and Kristensen, 1994). Hilbig and Blake (1991) proposed six principal groups covering 20 genera; the new genus *Marycarmenia* is related to group 5, including *Meiodorvillea* Jumars, 1974, and *Gymnodorvillea* Wainwright and Perkins, 1982, being the two genera most closely related with *Marycarmenia,* all of which have uniramous parapodia without notoaciculae and furcate setae and the jaw apparatus lacking maxillary carriers and basal plates. *Marycarmenia* differs principally from *Meiodorvillea* in the biarticulated palps and from *Gymnodorvillea* in having antennae and palps.

Marycarmenia lysandrae new species is an interstitial species that inhabits shallow subtidal sandy sediments. This species, together with 33 additional taxa of polychaetes, were collected from Ponta de S. Lourenço in northwest Madeira (Núñez, et al., 1995). *M. lysandrae* was originally, with doubt, attributed to genus *Meiodorvillea*?.

MATERIALS AND METHODS

The material was collected by unaided diving on a stony bottom with small interfaces of organogenous coarse-grained sand, at a depth of 4 m. Small samples of sand, with a volume of about 100cc, were treated with $MgCl_2$, the interstitial fauna were sorted using a dissecting microscope, fixed with 10% formaldehyde in seawater for 1 d, and stored in 70% alcohol. Due to the small size of the specimens, they were mounted in glycerine gel and examined with a compound microscope. Measurements of the body width were taken, excluding the parapodia and setae, at the anterior part of the body at the level of the first setiger. Two specimens were cleared in 10% KOH for 30 min for the examination of the jaws. The figures were made using an interference contrast microscope (Nomarski) with a camera lucida.

Family DORVILLEIDAE Chamberlin, 1919

Marycarmenia new genus

Type species.—*Protodorvillea gaspeensis* Pettibone, 1961,= *Marycarmenia gaspeensis* (Pettibone, 1961) n. comb. *Gender*: Feminine.

Diagnosis.—Body minute and slender, with up to 30 setigers. Numerous ciliary tufts on prostomiun, palps and segments. Prostomium pear-shaped, with two short and smooth dorsal antennae and two biarticulate ventrlateral palps. Parapodia uniramous (without notoacicula), dorsal cirri absent, ventral cirri not extending

beyond neuropodial lobe. Branchiae absent. Supra-acicular fascicle with serrate capillary and furcate setae, subacicular fascicle with heterogomph falcigers and occasionally inferior simple cultriform setae. Mandibles elongated and denticled anteriorly, two principal rows of maxillary structures, and two principal rows of free denticles. Maxillary carriers absent. Pygidium with four anal cirri.

Etymology.—*Marycarmenia* is dedicated to the polychaetologist María del Carmen Brito.

Remarks.—The removal of *P. gaspeensis* from the genus *Protodorvillea* Pettibone, 1961, was already suggested by Wainwright and Perkins (1982) and Eibye-Jacobsen and Kristensen (1994). In view of the study of the jaw apparatus by Jumars (1974), *P. gaspeensis* is related to the "line" *Meiodorvillea-Protodorvillea* in which *Marycarmenia* is included.

Marycarmenia lysandrae new species
(Figures 1,2)

Meiodorvillea? Núñez, et al. (1995, list only)

Type locality and ecological data.—Madeira, Laginha (Ponta de S. Lourenço): UTM 28S CB 3980/2422, September 1992, −4 m in organogenous coarse-grained sand (Coll: J. Núñez).

Material Examined.—Seven specimens and an incomplete specimen, of which two individuals had been treated with 10% potash and the remaining six included in glycerine gel.

Type Material.—Holotype a mounted specimen (AN/0198), deposited in the Museo Insular de Ciencias Naturales of Santa Cruz de Tenerife (TFMC); three Paratypes: a mounted specimen (51IM), deposited in the Departamento de Biologia Animal, Universidad de La Laguna (DBAUL); Paratype deposited in the private collection of Brigitte Hilbig.

Etymology.—The specific name is dedicated to Lisandra, daughter of the author.

Description.—Holotype with 22 setigers, 2.52 mm in length for 0.18 mm in width anteriorly (excluding parapodia); other specimens with 6–13 setigers, 0.52–1.24 mm in length for 0.14–0.22 mm in width. Body elongated, slender and subcylindrical, tapering gradually posteriorly (Fig. 1A). Unpigmented and translucent.

Prostomium rounded anteriorly, wider than long, with small dorsolateral clavate antennae; palps biarticulate, slightly longer than antennae, inserted ventrolaterally behind antennae, with long palpostyle and short palpophore; eyes not visible. Single pair of nuchal organs on the dorsoposterior corners of prostomium (Fig. 1B). Two achaetous peristomial rings, second ring twice the size of first ring. Peristomium contains the jaw apparatus. Additional ciliated areas present on prostomium, palps, laterally on each peristomial ring and setigerous segments. Parapodia uniramous, uniform in shape. Presetal and postsetal lobes similar, with cirriform ventral cirri (Fig. 2A). Dorsal cirri absent. Single neuroaciculum, stout with tapering protruding tip. Generally 5 setae for each parapodium, 2 supraacicular and 3 subacicular. Supraacicular setae of two types: long capillary simple, straight or arched, and serrated subdistally (Fig. 2C), and 1–2 pseudocompound furcate setae, with tines unequal in length and numerous spines below short tine (Fig. 2D). Subacicular setae with 3 unidentate heterogomph compound serrated falcigers, with dorsal-ventral gradation, 50-22-16 μm anterior setigers, 71-38-17 μm midbody, 83-39-14 μm posterior setigers (Fig. 2E–G), shaft with distally serrated and bifid tine (Fig. 2H). Far posterior setigers with an inferior simple cultriform serrated seta with unidentate tip (Fig. 2I). Pygidium with two pairs of anal cirri: dorsal pair short and cirriform, ventral pair, long and clavate (Fig. 1C).

Jaw apparatus poorly sclerotized. Symmetrical and elongate mandibles, curved and scalloped along inner edge with 3–4 rounded teeth. Each mandible concave

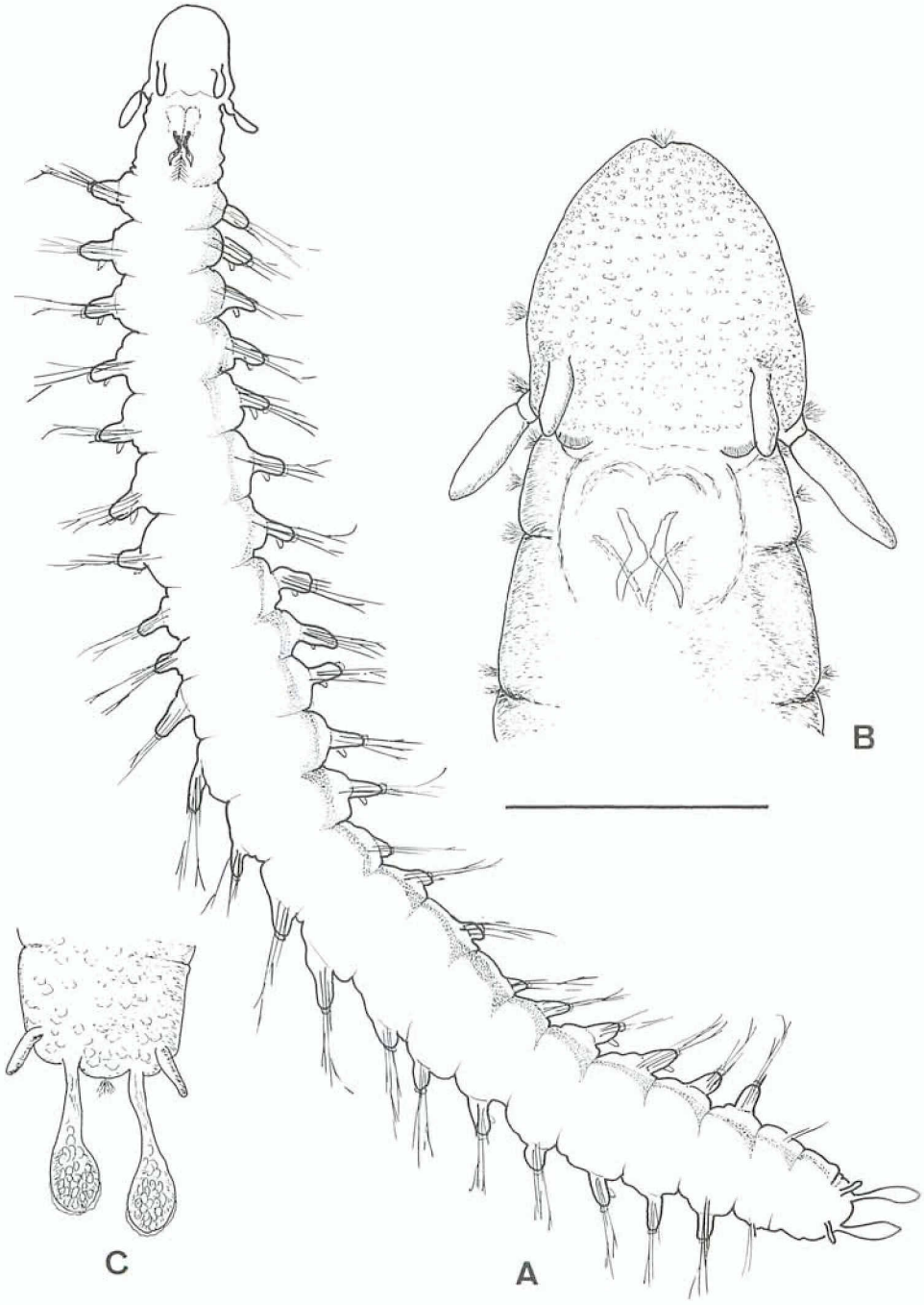

Figure 1. *Marycarmenia lysandrae,* holotype.—A, Dorsal view; B, Anterior end, dorsal view; C, Posterior end, dorsal view. Scale line is 400 μm for A, and 50 μm for B,C.

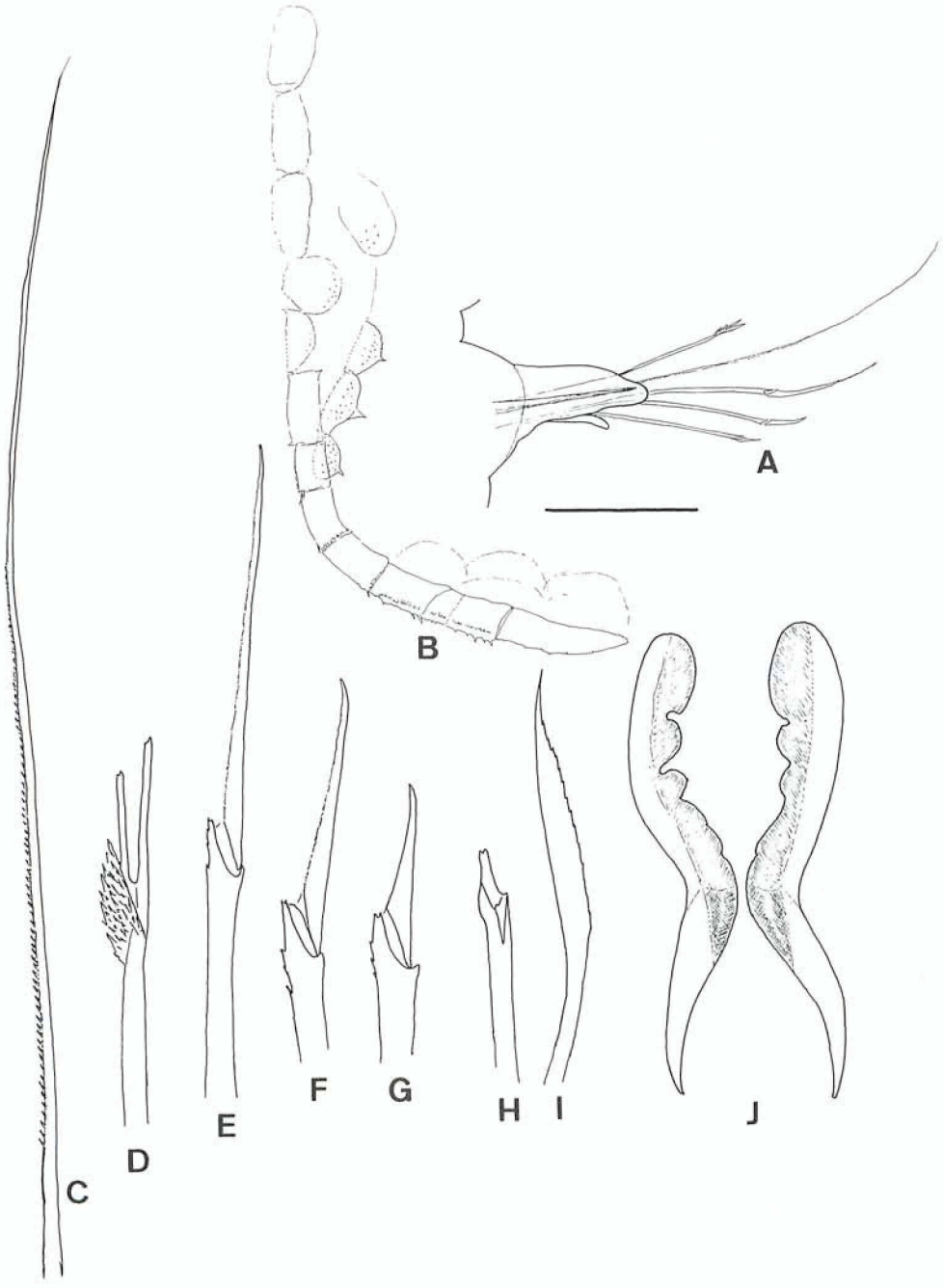

Figure 2. *Marycarmenia lysandrae.*—A, Anterior parapodium; B, Maxillae and free denticle; C, Capillary seta; D, Pseudocompound furcate seta; E, Uppermost compound falciger; F, Median compound falciger; G, Lowermost compound falciger; H, Shaft of compound seta; I, Cultriform seta of posterior setigers; J, Mandibles. Scale line is 242 μm for A, and 25 μm for B–J.

medially along outer edge; posterior handle divergent and narrow (Fig. 2J). Maxillar structure in V-shape with 2 rows of free denticles, with about 7 squared, flattened fused denticles, each denticle sclerotized with serrated margin. At least 2 additional rows of transparent, poorly sclerotized, rounded scraper-like denticles, each with numerous surficial minute teeth, and some, one large tooth in cutting margin (Fig. 2B).

Remarks.—*Marycarmenia lysandrae* resembles *Pettiboneia urciensis* (Campoy and San Martín, 1980) in having similar prostomia, setae and jaws elements, although it differs in having uniramous parapodia on all setigers, this apomorphic character far off at *M. lysandrae* of group *Pettiboneia. M. lysandrae* and *M. gaspeensis* (Pettibone, 1961) (Pettibone 1961; Jumars 1974) are sister species, differing principally in the shape of the prostomium and the pseudocompound setae present in *M. lysandrae.*

Distribution.—Only known from type locality.

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