



Polychaetes associated to calcareous sediments, Venezuela: Canalipalpata

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Abstract. In the present study we examined a total of 217 polychaeta collected from calcareous sediments at the National Park Archipiélago Los Roques, Venezuela. The samples were taken from seven stations, twice a year, between 2009 and 2012. A total of 12 polychaete species were identified, corresponding to 12 genera and seven families of the clade Canalipalpata: 1 species of Sabellidae, Magelonidae, Poecilochaetidae, and Pectinariidae (respectively), 2 species of Spionidae and Cirratulidae, and 4 species of Terebellidae. The species *Prionospio caribensis*, *Pseudopolydora floridensis*, *Magelona uebelackerae* and *Pista cetrata* are new records for Venezuela. These results increase the knowledge about marine biodiversity from the continental shelf in Venezuela and the south Caribbean.

Keywords: Canalipalpata, biodiversity, benthos, annelids, Polychaeta

Resumen: Poliquetos asociados a sedimentos calcáreos, Venezuela: Canalipalpata. En este estudio se examinó un total de 217 poliquetos obtenidos en sedimentos calcáreos en el Parque Nacional Archipiélago Los Roques, Venezuela. Las muestras fueron tomadas en siete estaciones, dos veces al año, entre el 2009 y 2012. Se identificaron doce especies, pertenecientes a siete familias del clado Phyllodocida: 1 especie de Sabellidae, Magelonidae, Poecilochaetidae y Pectinariidae (respectivamente), 2 especies de Spionidae y Cirratulidae, y 4 especies de Terebellidae. Las especies *Prionospio caribensis*, *Pseudopolydora floridensis*, *Magelona uebelackerae* y *Pista cetrata* son nuevos registros para Venezuela. Estos resultados incrementan el conocimiento sobre la biodiversidad marina en la plataforma continental Venezolana, y en el Caribe sur.

Palabras-clave: Canalipalpata, biodiversidad, bentos, anélidos, poliquetos

Introduction

The clade Canalipalpata (Annelida: Polychaeta) contains about half of the known polychaete species. The most distinctive characteristic of this clade is the presence of long grooved palps that are ciliated and used for feeding, being present in 3 suborders or clades such as Sabellida (Sabellidae, Serpulidae, Sabellariidae, Oweniidae and Siboglinidae), Spionida (Apostobranchidae, Longosomatidae, Magelonidae, Poecilochaetidae, Spionidae, Trochochaetidae, Uncispionidae and Chaetopteridae) and Terebellida (Acrociiridae, Alvinellidae, Ampharetidae,

Cirratulidae, Ctenodrilidae, Fauveliopsidae, Flabelligeridae, Pectinariidae, Poeciidae, Sternaspidae, Terebellidae, Trichobranchidae), and a number of taxa considered as *incertae sedis*: Polygordiidae, Protodrilidae, Protodriloidae, Saccociiridae (Fauchald & Rouse, 1997; Struck, 2006; Struck *et al.*, 2007; Purschke *et al.*, 2014).

In Venezuela, the taxonomic knowledge regarding this group is relatively scarce, with nearly 80 identified species from 8 families and they are all reported in Liñero-Arana (1998; 1999; 2013), Bone & Viétez (2002), Liñero-Arana & Díaz-Díaz (2005; 2010; 2012) and Díaz-Díaz & Liñero-Arana (2000;

2001; 2003a; 2003b; 2004; 2012), Delgado-Blas & Díaz-Díaz (2010; 2013), Delgado-Blas *et al.* (2010), Fernández *et al.* (2012), Balza *et al.* (2013), Díaz-Díaz *et al.* (2013). On the other hand, the Insular Región and Federal Dependencies only have few reports about this group in Hartman (1944) Fernández *et al.* (2012) and Díaz-Díaz *et al.* (2014; 2015).

In the present study we conducted a taxonomical analysis of the polychaete fauna from the clade Canalipalpata associated to shallow coral reef sediments from the Parque Nacional Archipiélago Los Roques (PNALR), in order to contribute with the biodiversity knowledge of this important zoological group in Venezuela and the South Caribbean.

Materials and Methods

The Parque Nacional Archipiélago Los Roques (PNALR) is located in the Caribbean Sea ($11^{\circ} 58' 36''$ - $11^{\circ} 44' 26''$ N and $66^{\circ} 57' 26''$ - $66^{\circ} 36' 25''$ W) (Fig. 1), 130 km off-shore from the Venezuelan coast (Díaz-Díaz *et al.* 2014; 2015). The surveys were conducted between 2009 and 2012, twice a year (February-March and August-September), in shallow waters (0.5 to 2 m deep) from seven reef stations with calcareous sediments: Gran Roque ($11^{\circ} 56' 36''$ N - $66^{\circ} 40' 32''$ W), Madrisquí ($11^{\circ} 57' 20''$ N - $66^{\circ} 38' 40''$ W),

Boca del Medio ($11^{\circ} 52' 35''$ N - $66^{\circ} 37' 13''$ W), Rabusquí ($11^{\circ} 51' 53''$ N - $66^{\circ} 41' 28''$ W), Boca de Sebastopol ($11^{\circ} 56' 45''$ N - $66^{\circ} 35' 09''$ W), Cayo de Agua ($11^{\circ} 49' 28''$ N - $66^{\circ} 56' 13''$) y Dos Mosquises Sur ($11^{\circ} 48' 01''$ N - $66^{\circ} 53' 19''$ W) (Fig. 1). Five sediment samples were taken with a PVC corer pushed side-wise into the sediments (0.01 m^2) at each station, being bagged and fixed with formalin solution (10%) and preserved in Ethanol 70%. The collected material was analyzed using the technique described by Díaz-Díaz *et al.* (2014); while the schemes and drawings were done using the methodology described by Coleman (2006). The schemes presented in this study correspond to new records for the country. All the specimens are currently placed at the reference collection of Laboratorio de Bentos Marinos (LBM), Universidad Simón Bolívar. In each case, the number of specimens is reported in parentheses after the station reference, which is represented by the acronym of each station followed by the period and year of collection (DMS-2-2009 = Dos Mosquises, 2nd period, year). The acronyms for each station are described as: GR= Gran Roque, MQ=Madrisquí, BM=Boca del Medio, RQ=Rabusquí, SB=Boca de Sebastopol, CA= Cayo de Agua y DMS=Dos Mosquises Sur. In the present study, the species organization was conducted following the Rouse & Fauchald (1997) proposition.

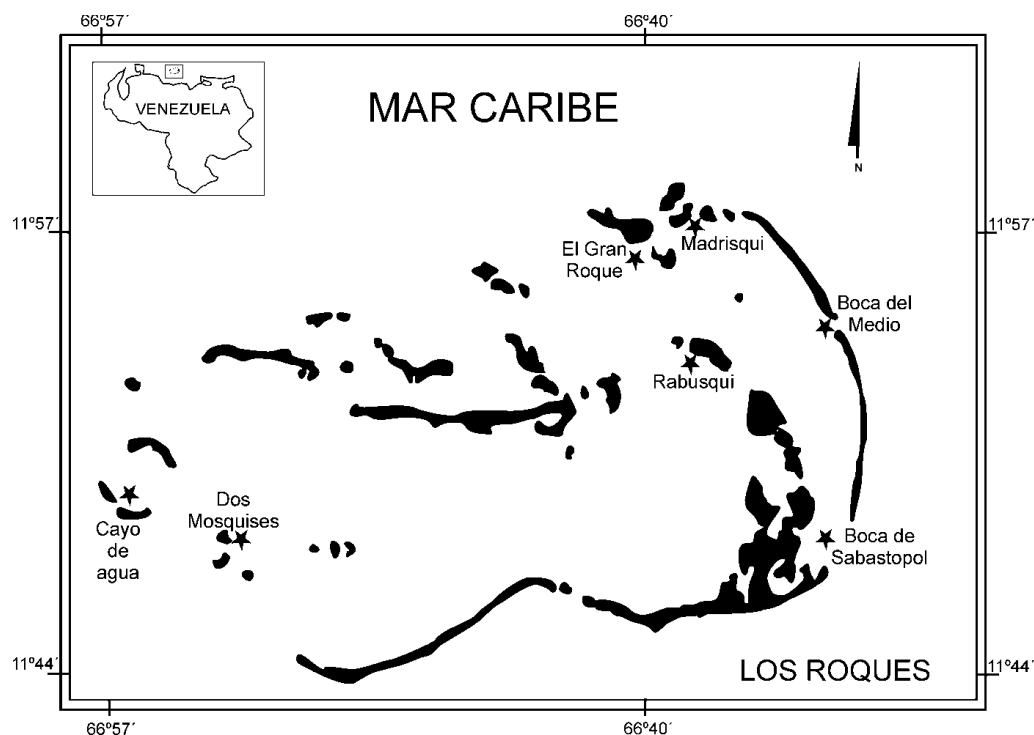


Figure 1. Study site The National Park Archipelago Los Roques, showing the sampled stations.

Results

A total of 217 polychaetes were examined, belonging to 12 species from the clade Canalipalpata (Table I).

Sabellida

Family Sabellidae Latreille, 1825

Genus *Paradialychone* Tovar-Hernández, 2008

Paradialychone farringtonae (Tovar-Hernández, 2005)
Chone farringtonae Tovar-Hernández 2005: 13-18, figs. 5A-G, 6A-O, 7A-E.

Paradialychone farringtonae Tovar-Hernández 2008: 2221; Díaz-Díaz & Liñero Arana 2011: 199, Fi. 5A-M.

Material examined. Twelve specimens. DMS-1-2009 (1); SB-1-2009 (1); SB-1-2009 (1); MQ-1-2010 (3); GR-2-2001 (1); MQ-2-2011 (1); GR-2-2012 (1); MQ-1-2012 (2); SB-2-2012 (1).

Comments. This species was previously reported by Díaz-Díaz & Liñero Arana (2011) at the Gulf of Cariaco. *Paradialychone farringtonae* is characterized for being the only species with particular uncini, in which the main tooth is extended beyond the forechest, and the ventral gland-shield is twice longer than wider.

Distribution. Great Caribbean.

Spionida

Family Poecilochaetidae Hannerz, 1956

Genus *Poecilochaetus* Claparède, 1875

Poecilochaetus cf. *johnstoni* Hartman, 1939
(Figure 2a-g).

Material examined. Three specimens: DMS-1-2009 (1); DMS-2-2012 (1); GR-2-2012 (1).

Description. Large vermiform body, with 36 chaetigers, 29 mm long and 3 mm wide. Sub-square prostomium (Fig. 6a) with two pairs of eyespots, a frontal digitiform antennae and a nuchal organ with an elongated central lobe and reduced lateral lobes, having a trilobulate appearance. The central lobe reaches the posterior margin of the fourth chaetiger. First segment with large acicular chaetae and ventral cirri larger than the dorsal. Dorsal cirri from chaetigers 2 to 6 and after the 14 with a conical shape (Fig. 6b, d); while those from chaetigers 7 to 13 with a bottled shape (Fig. 6c). Chaetigers 2 and 3 with smooth capillary chaetae (Fig. 6e); while the neuropodium presents smooth and plumose capillary chaetae (Fig. 6f) and neuropodial hooks (Fig. 6g). The rest of the chaetigers with smooth capillary chaetae, presenting plumose and spike chaetae in some chaetigers. Pygidium not observed.

Comments. The specimens described here are similar to *Poecilochaetus johnstoni*, but the differences

between them are: the absence of a triangular tooth in the 9th chaetiger, the presence of acicular hooks distally hirsute, and the chaetae distribution is different from the description by Hartman (1939). Compared with other species in the region, *P. cf. johnstoni* differs from *P. bermudensis* Hartman, 1965 and *P. fulgoris* Claparède in Ehlers, 1875, because the acicular hooks are not distally hirsute, the plumose and spike chaetae are absent, and both species come from deep waters. Liñero-Arana (1993) described *Poecilochaetus* sp. using four anterior fragments collected in Barcelona (Anzoátegui State), and the author compares this species with *P. hystricosus* Mackie (1990) from Hong Kong, based on the similarities on the nuchal organ. The specimens examined in our study are different from those described by Liñero-Arana because of the size of the nuchal organ; however they could possible be the same species. It is necessary to evaluate a larger number of specimens to clarify the species identity; especially since the type locality for *P. johnstoni* is the Gulf of California.

Family Spionidae Grube, 1850

Genus *Prionospio* Malmgren, 1867

Prionospio caribensis Delgado-Blas, 2014
(Figure 2h-k)

Prionospio caribensis Delgado-Blas, 2014: Fig. 2a-j

Material examined. Five specimens: DMS-1-2009 (2); MQ-1-2009 (2); SB-1-2009 (1).

Description. Complete specimen with by 62 chaetigers, 11.5 mm long and 1.2 mm wide. Prostomium sub-triangular, rounded on distal end, posteriorly tapered with rounded caruncle reaching the posterior margin from chaetiger 2 (Fig. 2h); two pairs of red to brown eyespots, arranged in a trapezoidal shape, the first pair of eyes are small and rounded, while the second pair is large and oval. Peristomium forming large lateral wings surrounded to prostomium. Five pairs of branchiae, with the first, fourth and fifth pairs pinnate; also the first and fifth pair are larger than the rest, and the first pair is extended up to the 5 chaetigers (Fig. 2h, i). Second and third pair triangular, thick, densely ciliated, both with the same size, and larger than the notolamellae. First chaetiger with large and rounded notopodial postchaetal lamellae. Chaetigers 2-6 with large triangular lamellae, and the third and fourth pairs of lamellae larger than the rest (Fig. 2h). Lamellae from chaetiger 7 sub-triangular, small and wide. Rounded shape starting from chaetiger 8, where the lamellae from posterior segments are wider, smaller and more

Table 1.-List of Orders, Families and Species of Polychaeta, Clade Canalipalpata, recorded in this study (Based in Rouse & Fauchald, 1997).

Subclass	Order	Suborden	Family	Species
Palpata	Canalipalpata	Sabellida	Sabellidae	<i>Paradialychone ferringtonae</i> (Tovar-Hernández, 2005)
			Spionidae	<i>Prionospio caribensis</i> Delgado-Blas, 2014*
		Magelonida	Magelonidae	<i>Pseudopolydora floridensis</i> Delgado-Blas, 2008*
			Magelonidae	<i>Magelona uebelackerae</i> (Hernandez-Alcantara & Solis-Weiss, 2000)*
			Poecilochaetidae	<i>Poecilochaetus</i> cf. <i>johnstoni</i> Hartman, 1939
			Poecilochaetidae	<i>Poecilochaetus</i> cf. <i>johnstoni</i> Hartman, 1939
		Terebellida	Terebellidae	<i>Lanicola carus</i> (Young & Kritzler, 1987)
			Terebellidae	<i>Loimia bermudensis</i> Verrill, 1900
			Terebellidae	<i>Pista cetrata</i> (Ehlers, 1887)*
			Terebellidae	<i>Streblosoma hartmanae</i> Kritzler, 1971
		Pectinariida	Pectinariidae	<i>Pectinaria gouldii</i> (Verrill, 1864)
			Cirratulidae	<i>Timarete punctata</i> (Grube, 1859)
		Cirratulida	Cirratulidae	<i>Aphelochaeta</i> cf. <i>marioni</i> (Saint-Joseph, 1894)
			Cirratulidae	<i>Aphelochaeta</i> cf. <i>marioni</i> (Saint-Joseph, 1894)

* New records for Venezuela.

visible than the anterior segments. From chaetiger 2 to middle segments with large prechaetal lamellae fused with the postchaetal, and involving the chaetae. Chaetigers 8-12 with lamellae forming small dorsal folds. Chaetiger 1 with neuropodial postchaetal lamellae large and rounded (Fig. 2h). Chaetigers 2-4 with square lamellae. Chaetigers 3-4 with the largest lamellae. Starting from chaetiger 5 to the end of the body, rounded lamellae decreasing in size, forming small rounded lobes. Anterior prechaetal lamellae small and rounded; while the posterior lamellae are inconspicuous. Anterior region with granular capillary chaetae, slightly unilimbate and arranged in two rows. Capillary chaetae from anterior region shorter and wider than posterior region. Sabre chaetae from chaetiger 14 and forward, 1-2 for each neuropodium, small and slightly granulated (Fig. 2j). Neuropodial hooded hooks multidentate with a main tooth and four pairs of apical teeth. Slightly curved hooks from chaetiger 15, 7-8 hooks for neuropodium (Fig. 2k). Notopodial hooded hooks multidentate after chaetiger 29, 4 hooks per bundle, similar to neuropodial hooks but slightly longer. Pygidium with long dorso-ventral cirri and two large lateral lobes.

Comments. *Prionospio heterobranchia* Moore, 1907 was described for Massachusetts and the species is characterized for having 5 pairs of branchiae, with the first, fourth and fifth pairs pinnate; while the second and third pairs are triangular. The number, shape and arrangement of branchiae, as well as the size of the second pair of eyes, have been sufficient characters to record *P. heterobranchia* in new localities, being the only species within *Prionospio* with this particular branchiae arrangement. The new characters proposed by Nateewathana & Hylleberg

(1991), especially the shape of neuropodial lamellae, indicates that *Prionospio* (*P.*) *caribensis* is closely related to *P. (P.) heterobranchia* for having the same branchiae arrangement, but the only difference between them is that *P. (P.) caribensis* has a bottle-shaped prostomium, a longer peristomium, longer noto- and neuropodial postchaetal lamellae on chaetiger 1 and chaetiger 3 with square neuropodial postchaetal lamellae.

Distribution. Caribbean (Gulf of Mexico, Florida, Venezuela).

Genus *Pseudopolydora* Czerniavsky, 1881

Pseudopolydora floridensis Delgado-Blas, 2008.

(Figure 2l-r)

Pseudopolydora floridensis Delgado-Blas, 2008: 14-16, Fig. 5A-L; Delgado-Blas, 2009; 20, Fig. 8E.

Material examined. Three incomplete specimens CA R4(1)

Description. Incomplete specimen with 35 anterior segments, 14 mm long and 1.4 mm wide (chaetiger 5). Prostomium with T shape, two anterolateral projections, two pairs of eyes arranged in trapezoidal shape. Caruncle posteriorly extended to chaetiger 7. Occipital antennae present (Fig. 2l). Peristomium wider than longer, laterally expanded. Palps extended to segment 13. First chaetiger clearly separated from peristomium; notopodial lamella cirriform and the neuropodial is triangular, which is longer in the subsequent segments; notochoetae absent, unilimbate neurochaetae. Chaetigers 2-4 well developed, notopod with unilimbate chaetae arranged in two rows: the anterior row with shorter and thinner notochoetae compared to the posterior row; the middle segments with two types of chaetae: unilimbates and capillaries (Figs. 2m, m'). Neuropod from chaetiger 2-4, 6 and 7 with a dense bilimbate

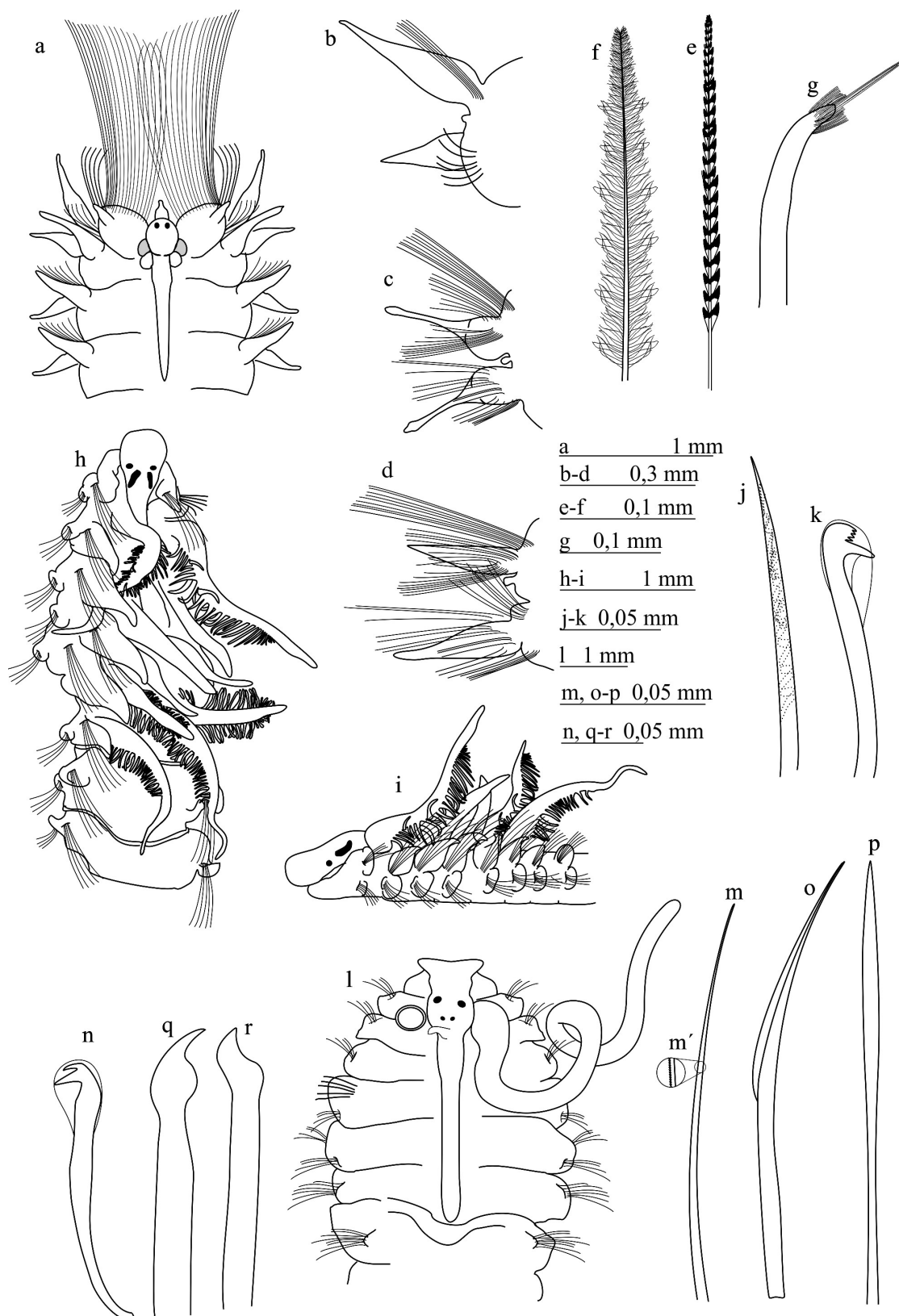


Figure 2.- a-g) *Poecilochaetus* cf. *johnstoni*: a) anterior edge with dorsal view, b) setiger 4, c) setiger 8, d) setiger 16, e) plumose chaetae, f) spike chaetae, g) acicular chaetae; h-k) *Prionospio caribensis*: h) anterior edge in dorsal view, i) the same in lateral view, j) sable seta, k) multidentate hooded hook; l-r) *Pseudopolydora floridensis*: l) anterior edge in dorsal view, m) capilar chaetae serrated, m') the same in detail, n) bidentate hooded hook, o) libate chaetae, p) bilimbated neurochaetae from setiger five, q-r) modified hooks from setiger five.

capillary chaetae. Hooded hooks bidentate, present from chaetiger 8, with 25 hooks per fascicle; hook with reduced angle between teeth and shaft constriction (Fig. 2n). Chaetiger 5 with postchaetal noto and neuropodial lamella well developed; with unilimbate capillary chaetae in dorsal position (Fig. 2o), and bilimbate capillary chaetae in ventral position (Fig. 2p). Two types of spines arranged in double rows, with U shape; spines in the external row with a subdistal constriction (Fig. 2q), and those in the internal row with subterminal protuberance (Fig. 2r). Branchiae between chaetiger 7 and 38; separated from the notopodial lamella. Large glandular structures in chaetigers 6-7 (Fig. 3o).

Comments. Delgado-Blas (2008) indicates the proximity between *Pseudopolydora floridensis* and *P. corniculata* (Radashevsky & Hsieh, 2000), especially the prostomium shape and the notopodial lamella from the first chaetiger, the caruncle extension and the presence of glandular structures in chaetigers. However, in *P. floridensis* the neuropodial lamella from first chaetiger is triangular instead of cirriform; and also the spines in fifth chaetiger are U-shaped, not J-shaped, and finally the spines from the inner row have a subdistal protuberance.

Distribution. Florida and Venezuela.

Family Magelonidae Cunningham & Ramage 1888

Genus *Magelona* Müller, 1858

Magelona uebelackerae Hernández-Alcántar & Solís-Weiss, 2000
(Figure 3a-h)

Magelona sp. H: Uebelacker & Jones, 1984: 7/20–23, figs. 718a–j.

Meredithia uebelackerae Hernández-Alcántar & Solís-Weiss 2000: 640–642, Fig. 4a–i.

Magelona uebelackerae Hernández-Alcántar & Solís-Weiss 2009: 8. Fig. 1G.

Material examined. Eight specimens: DMS-1-2009 (1); CA-1-2010 (1); CA-2-2011 (2); DMS-2-2011 (2); RQ-2-201 (1); MQ-2-2012 (1).

Description. Complete specimen with 53 chaetigers, 17 mm long and 0.7 mm wide. Rounded prostomium, with frontal horns well developed, anterior margin is smooth and slightly longer than wider (Fig. 3a), and only the right palp present. Similar parapodia in chaetigers 1–8 (Fig. 3b–d). Notopodial lamella from first chaetiger narrow and foliaceous (Fig. 3b), neuropodial lobe very short. Notopodial lamella increasing to the posterior thorax region (Fig. 3c–d); neuropodial ventral lobe digitiform; dorsal lobe and neuropodial lamella absent in thoracic chaetigers. Chaetiger nine with notopodial lamella and

neuropodial ventral lobe shorter and narrower than anterior chaetigers (Fig. 3d). All the thoracic chaetae are limbated. Abdomen with foliaceous notopodial and neuropodial lamellas (Fig. 3e), decreasing in size to the posterior edge of the body, dorsal and ventral lobes short and digitiform. Two groups of hooded bidentate hooks (Figs. 3f, g), in each abdominal branch (Fig. 3e); those in the posterior chaetigers are thinner (Fig. 3g). From chaetiger 36, one or two hooded and curved spines, located close to the notopodial lamella (Fig. 3h), bidentate hooks; bidentate hooded hooks only present in the neuropodium.

Comments. Uebelacker & Jones (1984) identified some specimens from the northern Gulf of Mexico such as *Magelona* sp.H. Hernández-Alcántar & Solís-Weiss (2000) examined this material, stored in the USNM, and they noted that the short length of fragments were not enough to observe the curved hooded hooks described by Uebelacker & Jones (1984); however, Hernández-Alcántar & Solís-Weiss (2000) considered that those fragments could belong to *Mageloma uebelackerae*.

Distribution. Gulf of Mexico, Texas, Mississippi, North Carolina and Venezuela.

Terebellida

Family Cirratulidae Ryckholt, 1851

Genus: *Timarete* Kinberg, 1866

Timarete punctata (Grube, 1859)

Cirriformia punctata Day, 1967: 517, fig. 20.4 j–m; Fauchald, 1977: 49–50.

Timarete punctata Carrera-Parra & Salazar-Vallejo, 1997: 31; Díaz-Díaz & Liñero-Arana, 2004: 7–8, Fig. 2 D–F; Cinar, 2007: 757–763, Fig. 2–5; Díaz-Díaz & Salazar-Vallejo, 2009: 145, Fig. 6 j–k. Material examined. One hundred fifty three specimens. BM-1-2009 (24); BM-2-2009 (14); CA-1-2009 (3); CA-2-2009 (18); DMS-1-2009 (15); DMS-2-2009 (12); GR-1-2009 (4); GR-2-2009 (6); MQ-1-2009 (5); MQ-2-2009 (13); RQ-1-2009 (2); RQ-2-2009 (3); SB-1-2009 (11); SB-2-2009 (19); BM-2-2010 (1); MQ-1-2010 (1); RQ-1-2010 (1); RQ-2-2010 (1).

Comments. Cinar (2007) redescribed the species, and assigned one lectotype and paratype, concluding that the presence of this species in the Mediterranean Sea could occur for lessepsian migration, probably being reported for this area as *Cirriformia semicincta* (Ehlers, 1905). The characteristics observed in these specimens agree with the descriptions done by different authors. However, the specimens collected in Castillete (Zulia state, Venezuela) (Vanegas-Espinosa, 2008) have a more

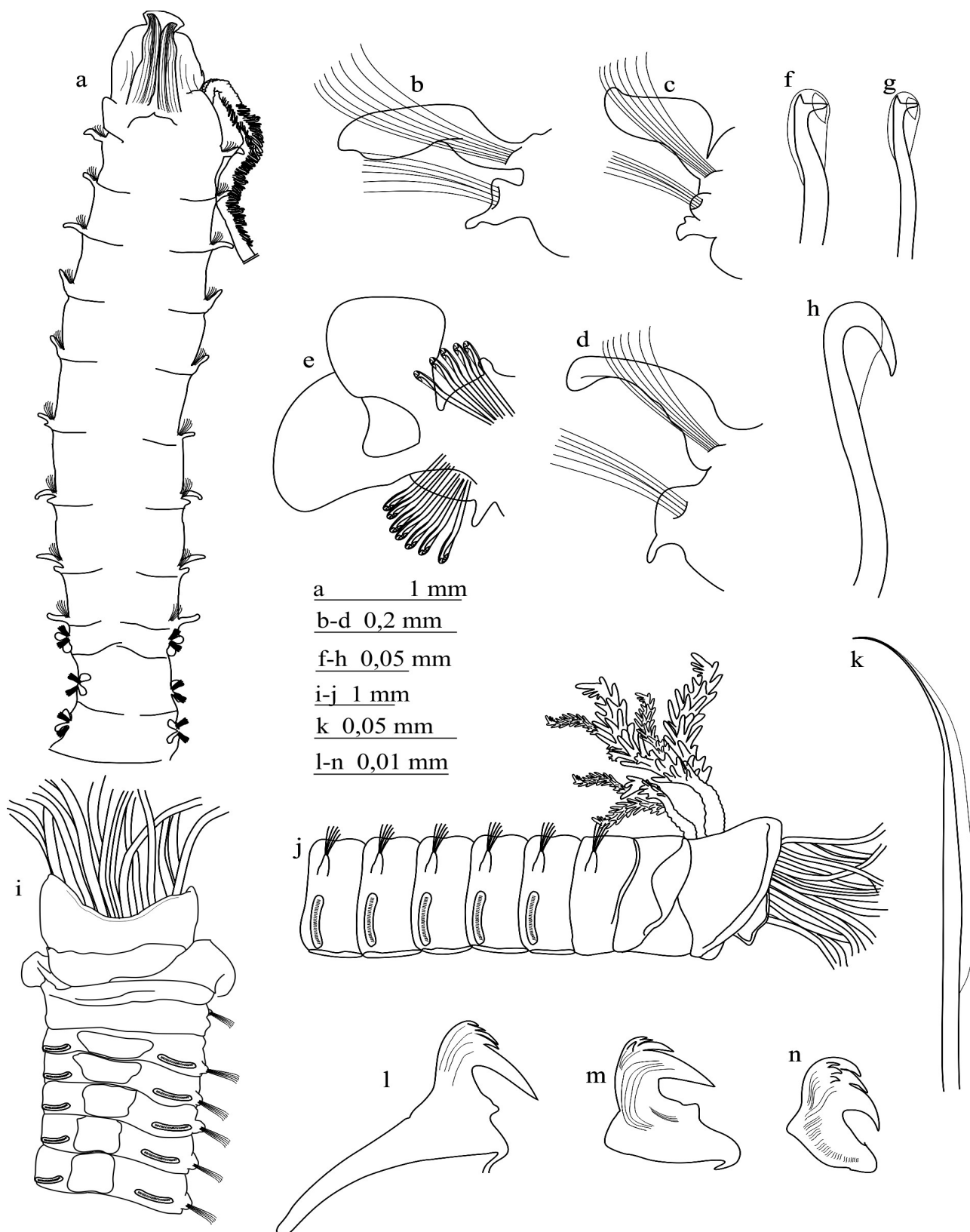


Figure 3.- a-h) *Magelona uebelackerae*: a) anterior edge in dorsal view, b-d) setigers 1, 4 and 9, e) anterior abdominal setiger, f) bidentate hooded hook from abdominal anterior setiger, g) bidentate hooded hook from posterior abdominal setiger, h) posterior hooded hook, i-n) *Pista cetrata*: i) anterior edge in ventral view, j) anterior edge in lateral view, k) limbated chaeta, l) anterior thoracic uncini, m) posterior thoracic uncini, n) abdominal uncini.

evident pigmentation than those collected in eastern of the country (Díaz-Díaz & Liñero-Arana, 2004), and those examined in this study. Cinar (2007) indicated that specimens from South Africa have branchiae from middle and posterior regions densely pigmented. Additionally, this author correlated the pigmentation between mature and immature individuals, being more dense and abundant in the mature specimens.

Distribution. Circuntropical.

Genus *Aphelochoaeta* Blake, 1991

Aphelochoaeta cf. *marioni* (Saint-Joseph, 1894)

(Figure 3i)

Heterocirrus marioni Saint-Joseph, 1894: 56-58, Pl. III; Figs. 62-64.

Tharyx marioni: Day, 1967: 505, fig. 20.2.e; Hartman, 1967: 118.

Aphelochoaeta marioni: Rozbaczylo *et al.*, 2006: 77, Fig. 2i; Miloslavich *et al.*, 2010.

Material examined. Eight specimens. SB-1-2009 (1); BM-1-2010 (1); DMS-1-2010 (1); MQ-2-2010 (1); SB-1-2010 (1); DMS-2-2011 (1); MQ-2-2011 (1); BM-2-2012 (1).

Description. All the specimens were incomplete, the largest with a size >10 mm long and 0,4 mm wide, thin body with >42 chaetigers. Prostomium slightly conical, with no eyes (Fig. 3i). Buccal segment three-ringed, with a pair of tentacular cirri which start at the union of the third ring with the first chaetiger. Biramous parapods. Branchial filaments from the first chaetiger to the posterior edge of the body. Smooth and capillary notochaetae and neurochaetae. Notochaetae larger than neurochaetae. Posterior end and pygidium not observed.

Comments. Blake (1991) included in *Aphelochoaeta* all the species of bitentaculated cirratulids with capillary chaetae (not serrated). This author mentions that the *Aphelochoaeta* species are among the most difficult group for identification due to the low variability of the chaetal morphology; therefore, the differentiation between species is based on the prostomium shape, size and shape of peristomium related to the first chaetiger, insertion of dorsal tentacles and first pair of branchiae, presence of moniliform segments in the posterior chaetigers, also the expanded segments of the posterior region. Blake (1996) indicates that *A. marioni* has been widely recorded since the original description, including France, Germany, United Kingdom, Northwest Atlantic Ocean, South Africa, Southeast Asia, both costs of North America, Gulf of Mexico, Chile and Venezuela. In this case, Petersen (*in Blake, 1996*) considers that the wide distribution of a

species, including this one, is very rare and probably makes reference to different species. Therefore, considering the findings of Díaz-Díaz & Salazar-Vallejo (2009), the records of Miloslavich *et al.* (2010) for Venezuela are cuestionable.

Distribution. Venezuela.

Family Pectiniariidae Quatrefages, 1865

Genus: *Pectinaria* Lamarck, 1818

Pectinaria gouldii (Verrill, 1873)

Cistena gouldii. Gardiner & Wilson, 1977: 169.

Pectinaria gouldii. Long, 1973: 365, fig. 4; Wolf, 1984: 50-10, fig. 50-6; Liñero-Arana & Díaz-Díaz, 2005: 112-114, Fig. 1a-h; Londoño-Mesa, 2009a: 407, Fig. 1i-l.

Material examined. Two specimens: SB-1-2009 (2).

Comments. Wolf (1984) indicates that the specimens from the Gulf of Mexico present long and thin hairs in the notochaetae from the three first chaetigers; however, the samples recorded by Liñero-Arana & Díaz-Díaz (2005) and those examined in this study did not show this characteristic. These authors mention that the variation in the number of chaetae *P. gouldii* from the Caribbean, examined by Long (1973) is superior (8-26) to those observed by Wolf (1984) for specimens from the Gulf of Mexico (4-13) and those recorded for Venezuela (7-13).

Distribution. Florida, Gulf of México, Cuba, Jamaica, Puerto Rico.

Family Terebellidae Malmgren, 1867

Subfamily Thelepodinae Hessle, 1917

Genus *Streblosoma* Sars, 1872

Streblosoma hartmanae Kritzler, 1971

Streblosoma hartmanae: Kritzler, 1984: 52-66, 52-63, figs. 64a-I; Díaz-Díaz & Liñero-Arana, 2000: 37-38, Fig. 3a-d; Londoño-Mesa & Carrera-Parra, 2005: 6-8, Fig. 2a-f; Díaz-Díaz *et al.*, 2009: 197; Díaz-Díaz & Liñero-Arana, 2011; 187.

Material examined. Six specimens: BM-2-2009 (1); DMS-2-2010 (1); CA-2-2011 (2); DMS-2-2011 (2).

Comments. *Streblosoma hartmanae* has been previously recorded for Venezuela (Díaz-Díaz & Liñero-Arana, 2000; Díaz-Díaz *et al.*, 2009; Díaz-Díaz & Liñero-Arana, 2011), being associated with different types of substrate (PVC pilots, *Thalassia testudinum*, soft substrate and as a symbiont in bivalves).

Distribution. East Coast of Florida, Northeast Gulf of Mexico

Subfamily Terebellinae Grube, 1850.

Genus: *Lanicola* Hartmann-Schröder, 1986

Lanicola carus (Young & Kritzler, 1987)

Neoleprea sp. B: Kritzler, 1984:52.34, Figs 52.39,

52.30a-f.

Paraeupolymnia carus: Young & Kritzler, 1987; Díaz-Díaz & Liñero-Arana, 2000; Londoño-Mesa & Carrera-Parra, 2005: 26-27, Fig. 7a-j.

Lanicola carus Capa & Hutchings, 2006:14; Londoño-Mesa, 2006: 24-30, Figs 1A-K; 2009b: 34-35.

Material examined: six specimens. MQ-1-2010 (6).

Comments: Capa & Hutchings (2006) recorded the specimens as *Paraeupolymnia* Young & Kritzler, 1987 with *Lanicola* Hartmann-Schröder, 1986. Five species are recognized such as *L. lobata* Hartmann-Schröder, 1986, *L. carus* (Young & Kritzler, 1987), *L. eduardoi* Capa & Hutchings, 2006, *L. garciagomezi* (Londoño-Mesa, 2006), and *L. guillermoi* Capa & Hutchings, 2006. Londoño-Mesa (2006) makes reference of *L. carus* as one of the most common species of terebelids in the Caribbean. Díaz-Díaz & Liñero-Arana (2000) recorded *Paraeupolymnia* sp., where the only difference is the presence of ventral glandular pads well developed in the specimens from Venezuela. However, some organisms were re-examined and compared with material from Belice done by Londoño-Mesa (2006), who confirmed that they were *P. carus*, currently known as *L. carus*.

Distribution. Florida, Gulf of México, Belice, Colon (Panama), Venezuela and Lesser Antilles (Bonaire, Curaçao, Granada, Tortuga).

Genus: *Loimia* Malmgren

Loimia bermudensis, Verrill, 1900

Loimia bermudensis, Verrill, 1900: 664-665; Londoño-Mesa, 2009b: 37-38, Fig. 9A.H.

Loimia cf. *medusa*. Díaz-Díaz & Liñero-Arana, 2000: 43, Fig. 4k-m'.

Material examined: Two specimens. CA-1-2012 (2).

Comments. *Loimia bermudensis* Verrill, 1900, was recorded as *L. medusa* (Savigny in Lamarck, 1822) by Hartman (1942). However, although *L. bermudensis* is similar to *L. medusa* in terms of number of teeth in the abdominal and thoracic uncini, they differ in shape. In *L. medusa* the uncini teeth decrease in size and the face projection is well developed, showing an avicular appearance. *L. bermudensis* presents uncini teeth with almost the same size and do not have the subrostral projection described for *L. medusa*. Díaz-Díaz & Liñero-Arana (2000) recorded *Loimia* cf. *medusa* indicating that the differences are based in the number of uncini teeth. Londoño-Mesa (2009b) mentions that some descriptions for *L. medusa* for the Caribbean could correspond to *L. bermudensis*.

Distribution: Bermuda, Venezuela.

Genus: *Pista* Malmgren, 1866.

Pista cetrata (Ehlers, 1887)

Figura 3i-f

Terebella cetrata Ehlers, 1887:248-253, Pl. 52, Fig. 8-13 (not Fig. 14); Hessle, 1917:163; Hartman, 1938:18.

Nicolea cetrata, Hartman, 1959: 512; Perkins & Savage, 1975: 54; Holthe, 1986:138; Salazar-Vallejo, 1996:32.

Pista cetrata. Londoño-Mesa, 2009b: 47-49, Fig. 13A-N.

Material examined. Eleven specimens. CA-2-2009 (1); DMS-2-2009 (2); DMS-1-2009 (1); BM-1-2010 (1); DMS-1-2010 (1); GR-2-2010 (1); RQ-1-2010 (1); SB-2-2010 (1); DMS-2-2011 (1); RQ-2-2011 (1).

Description. Complete specimen with 47 segments, 18 mm long and 2 mm wide. Short tentacular membrane; eyespots absent. Upper lip short and thick; lower lip wide. First pair of lateral flaps with lateral edges well developed, covering the tentacular membrane and the base of the upper lip, with the ventral portion thin and having U shape, covering the inferior lip. Second pair reduced, with lateral thin edges. Third pair with lateral wide edges. Fourth pair short with membrane and connected to the ventral shield; dorsally fused, forming two rounded lobes. Eleven ventral shields present from segment 3; first and second shield short and wide. Those from segments 5-7 decreasing in size, and the rest with similar size (Fig. 3i). Two pair of branchiae branched in segments 2 and 3; first pair shorter (Fig. 3j). Bilimbate notochaetae (Fig. 3k). Uncini from segment 5, with formula MF:2:3-4:5-7 (Fig. 3l), and those from segments 11-20 (Fig. 3m) with formula MF:3:3-4:4. Abdominal uncini small (Fig. 3n) MF:3:2:2-3. Pygidium with no lobes or cirrus.

Comments. Londoño-Mesa (2009b) proposed *Pista cetrata* (Ehlers, 1887) as a new combination, indicating that this species differs from others described for the Caribbean, for the presence and shape of dorsal lobes from segment four, the presence of uncini with long posterior procedures in the first six pairs of neuropods, the absent of eyespots and for the particular pattern of staining with the methyl green. On the other side, this species is similar to *P. quadrilobata* (Augener, 1918) from southeast Africa, recorded for North Carolina by Day (1973), and Kritzler (1984) for the Gulf of Mexico. Day (1973) described the uncini from the first neuropods, having long structures called occipitium, with no sub-rostral projections, and with a long posterior projection, that are present in *Pista*

cetrata in the first six pairs of neuropods. Other differences between these two species are the presence of eyespots and the absence of dorsal lobes in the 4 segment for *P. quadrilobata*.

Distribution. Florida, Aruba, Curaçao, Tobago and Venezuela.

Conclusion

These results clearly improve the currently knowledge about marine biodiversity from the continental shelf in Venezuela and the South Caribbean.

Four species (*Prionospio caribensis* Delgado-Blas, 2014, *Pseudopolydora floridensis* Delgado-Blas, 2008, *Magelona uebelackerae* (Hernandez-Alcantara & Solis-Weiss, 2000), *Pista cetrata* (Ehlers, 1887)) are new records for Venezuela.

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