



## Scientific Note

# First record of Aphroditidae (Annelida, Polychaeta) from Venezuela

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**Abstract.** The family Aphroditidae has not been previously recorded from Venezuelan waters, although 11 species from five genera are reported for the Grand Caribbean region. In this note, *Aphrodita obtecta* Ehlers 1887 is recorded for the first time for both Venezuela and the southern sector of the Grand Caribbean region.

**Key words:** biodiversity, annelids, polychaetes, Aphroditidae, benthos

**Resumen. Primer registro de un Aphroditidae (Annelida: Polychaeta) para Venezuela.** La familia Aphroditidae no había sido registrada en Venezuela hasta el presente, aunque para la región del Gran Caribe se han registrado 11 especies, en cinco géneros. *Aphrodita obtecta* Ehlers 1887 es registrada por primera vez para Venezuela y el sur del Gran Caribe.

**Palabras clave:** biodiversidad, anélidos, poliquetos, Aphroditidae, bentos

The family Aphroditidae, commonly called sea-mice due to the presence of long thin capillary chaetae that form a felt like mat covering the dorsum (Chambers & Muir 1997), is poorly known from Caribbean waters. Some of the most important studies done on this family are: Horst (1916a-b, 1917) who erected a new genus and described 21 new species; Pettibone (1966) who redefined some genera and produced an identification key; Fauchald (1977) who placed the Aphroditidae within the superfamily Aphroditacea and the suborder Aphroditiformia, recognizing seven genera; Day & Hutchings (1979) who recorded 12 species in four genera for Australia and New Zealand; Gathof (1984) who registered three unidentified species for the Gulf of Mexico, Russell-Watson (1989) who reviewed the genus *Palmyra* and placed it within the Aphroditidae; Hutchings & McRae (1993) who described 34 species in five genera for Australia and Hernández-Moreno (2009) who produced an identification key for the species recorded from the Great Caribbean region and the Mexican Pacific.

The family consists of 77 recognized species in nine genera (Pettibone 1982, Hutchings & McRae 1993), some of which are known only from their original descriptions. However, Hutchings & McRae (1993) suggested that the type species of the genera, including the *Aphrodita* genus, should be re-examined and the family re-organized by including several more, as yet undescribed, genera within it. In the Caribbean region, five genera and 11 species are recognized, however three of these are questionable because they have been recorded from widely separated localities; a re-examination of the type materials is thus needed to verify the wide distributions attributed to them in the literature (Salazar-Vallejo 1996, Hernández-Moreno 2009).

In this study, the family Aphroditidae is recorded for the first time from Venezuelan waters. In addition, *Aphrodita obtecta*, only known from its original description (Ehlers 1887) and its type locality (Boca Grande, Florida, USA), is characterized and illustrated.

Specimens were collected between May 2011 and

September 2012 from relatively shallow waters (20-60 m deep) at five stations in the Gulf of Venezuela (Table 1). A Beam Trawl 0.98 m wide and 0.5 m high with a 2.5 cm mesh was used to collect the material. The biota retained in each trawl run was stored in sealed plastic containers, labeled and

identified, and preserved in a 10% formaldehyde solution. Specimens were identified using the original description of *A. obtecta* Ehlers 1887 and are deposited in the reference collection of the Laboratorio de Bentos Marino, at the Universidad Simón Bolívar (LBM-USB).

**Table I.** Coordinates of sampling stations

Station	Date	LN initial	LN final	LN initial	LN final
P2XR1E3	22/05/2011	78°0'45,26"	78°0'49,02"	09°18'35,48"	09°17'13,44"
P2XR1E4	22/05/2011	78°1'03,80"	78°1'20,30"	09°15'11,79"	09°14'32,97"
P3XR1E1	22/05/2011	78°1'23,30"	78°1'40,15"	09°13'10,09"	09°12'26,03"
P4XIIE1	14/09/2012	78°1'11,66"	78°1'27,29"	10°23'56,17"	10°23'49,78"
P4XR1E5	14/09/2012	78°0'59,81"	78°0'46,19"	09°17'57,14"	09°17'50,06"

#### Genus *Aphrodita* Linnaeus, 1758

*Aphrodita* Linnaeus 1758: 655, Pettibone 1966: 96-97.

*Aphroditella* Roule 1898: 191, Horst 1917: 4.

Diagnosis. Aphroditids with dorsal felt well developed, completely concealing elytra. Elytra 15 pairs, smooth. Prostomium without ocular peduncles, with or without nuchal flaps. Facial tubercle well developed, papillated. All notochaetae smooth, of 3 kinds: capillary chaetae forming matted dorsal felt; iridescent capillary chaetae projecting laterally and dark, acicular, protective spines projecting dorso-laterally. Neurochaetae, dark, stout, smooth or with lateral spur, with slightly curved tips, with or without hood, sometimes frayed or pilose. Neurochaetae occurring in three tiers, upper tier with thicker neurochaetae. Some neurochaetae of segments 2-3 bipinnate (Hutchings & McRae 1993).

Type species. *Aphrodita aculeata*, designated by Malmgren (1867).

#### *Aphrodita obtecta* Ehlers, 1887

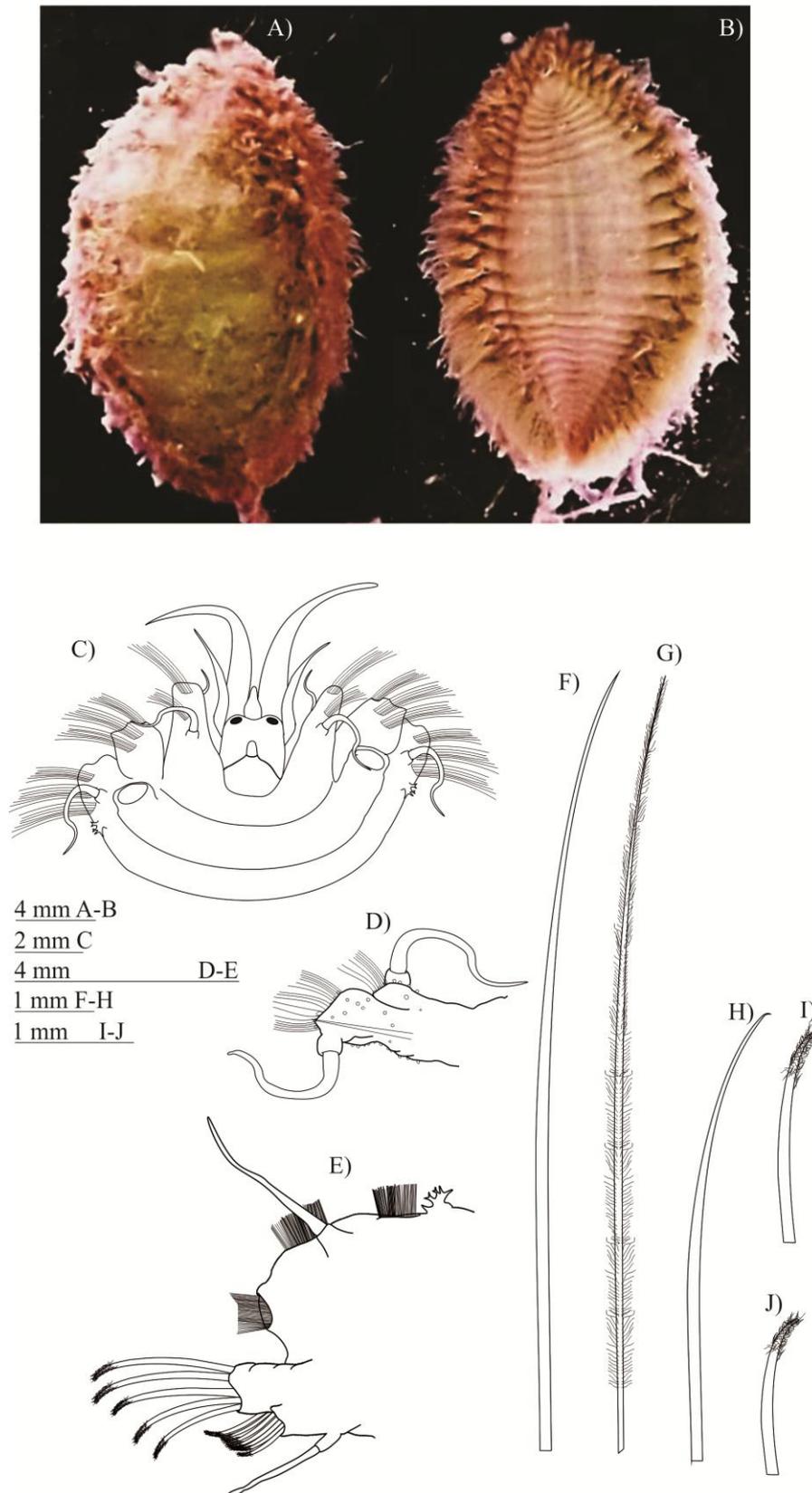
Figure 1A-E

*Aphrodita obtecta* Ehlers 1887: 42-44, Pl. 6, Figs. 1-8.

Material examined: Seven specimens LBM-USB Ap0001 (1), Est. P2XR1E3, 22/05/2011; LBM-USB Ap0002 (2), Est. P2XR1E4, 22/05/2011 LBM-USB Ap0003 (1), Est. P3XR1E1, 22/05/2011 LBM-USB Ap0004 (1), Est. P4XIIE1, 14/09/2012 LBM-USB Ap0005 (2), Est. P4XR1E5, 14/09/2012 (Table 1).

Characterization. Body ovate, rounded anteriorly, long tapering caudal region forming a tail; 29 mm in length, 16 mm width, 39 segments (Fig. 1a-b). Dorsum light-grey colored in alcohol, covered in fine felt, with entrapped sand and biogenic material giving a grey appearance. Iridescent lateral fringe, creamy pink, extending well past neurochaetae, forming a margin around the lateral edge of the

animal. Ventral surface pale yellow, covered by small globular papillae. Prostomium small, sub-quadrate with one pair of faint, grey, oval eye spots. Median antenna reduced to small, rounded papilla; no styles present. Palps extending to segment 7 with large basal palpophores, stout, tapering, smooth. Facial tubercle as long as the prostomium, slightly inflated, covered by small globular papillae (Fig. 1C). Elytra 15 pairs, firmly attached to elytraphores on segments 2, 4, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 28 and 31. Elytra semi-transparent, with a few globular tubercles; first pair oval with elytraphore attached centrally, second pair rounded with elytraphore attached laterally. Remainder of elytra rounded with elytraphores attached laterally and slightly anteriorly. Last two pairs of elytra elongated, covering the caudal region but leaving the posterior tip uncovered. First or tentacular segment with elongated uniramous parapodia projecting anteriorly and laterally to prostomium (Fig. 1D). Aciculae and three tufts of iridescent capillary setae arranged as follows: two emerging adjacent to the tentacular cirri on dorsal and ventral surfaces, the third emerging ventrally, adjacent to the mouth. Two pairs of tentacular cirri, with cylindrical tentaculophores, styles tapering with slender tips. Dorsal cirri longer than ventral cirri, the last one shorter than the parapodia (Fig. 1F). Second segment with first pair of elytra on large elytraphores. Parapodia biramous, neuropodia cylindrical, tip of acicula visible between upper two neurochaetae. Notopodia rectangular with three tufts of notochaetae: most dorsal tuft with three types of chaetae: numerous long and slender capillary chaetae, long, pilose capillary chaetae (Fig. 1G) and an inferior fan of stout, golden notochaetae (Fig. 1H); this last arranged in an U shape, slightly iridescent, pointing distally, some chaetae curving over dorsum (Fig. 1F). The second tuft similar to the dorsal one but the golden notochaetae arranged



**Figure 1.** *Aphrodita obtecta*. A) Specimen in dorsal view, B) same in ventral view, C) first parapodia, rear view, D) 18th parapodia, rear view, E) capillary notochaetae, F) pilose capillary notochaetae, G) acicular notochaetae, H) superior neurochaetae, I) inferior neurochaetae (elytra suppressed, chaetae reduced).

within the capillary chaetae. The inferior tuft with capillary chaetae and golden notochaetae in a fan similar to those of the other tufts but shorter in length. Neurochaetae in two tiers; the upper one consisting of slender, golden neurochaetae, distally fimbriated and brush-shaped (Fig. 1I); the lower tier with 10-12 chaetae similar to those of the upper tier but shorter (Fig. 1J). Ventral cirri with basal cirrophore, style with distal end slightly enlarged, extending beyond distal tip of the neuropodia. Third segment same as second, but with dorsal cirri instead of elytra. Dorsal cirri long, slender, tapering to blunt tip, just shorter than fringe. Subsequent segments with biramous parapodia. Segments cirriferous with elytrigerous papillae (Fig. 1F). Pygidium without anal cirri.

Variation. Material examined ranged from 19-29 mm long, 10-16 mm wide and with 34-38 segments. Palps extended to segments 4 to 6. Facial tubercle three-quarters to one times the length of the prostomium.

Remarks. *Aphrodita obtecta* is distinguishable from all other species of *Aphrodita* recorded from the Caribbean region by the small number of segments and the morphology of the facial tubercle and the neurochaetae. *A. obtecta* differs from *Aphrodita diplops* Fauchald, 1977 because in the latter the facial tubercle is smooth and longer than the prostomium and the neurochaetae have basal or subdistal spines, whilst in *A. obtecta* the facial tubercle is papillose and the neurochaetae do not have basal or subdistal spines. *A. obtecta* differs from *Aphrodita acuminata* Ehlers, 1887, because in the latter the body is elongate (more than 30 mm in length) with over 40 chaetigers, the notochaetae have pointed tips, the facial tubercle is bulbous and the neurochaetae sometimes have subdistal spines, whilst in *A. obtecta* the body is short (no more than 30 mm in length) with less than 40 chaetigers, the notochaetae have curved tips and the facial tubercle is not bulbous. The *A. obtecta* syntype (ANNa-723) is deposited in the collection of the Museum of Comparative Zoology - University of Harvard (MCZ 2013). Additional material collected in 1951 was reviewed by Pettibone, however this information was not published. Three specimens (Cat. N° 3874) collected in 1886, 130 miles from Jacksonville Florida and identified by J. E. Benedict, are not considered type material and are deposited in the Smithsonian Institution Museum of Nature History (SI-MNH 2013). *A. obtecta* is a new record for both Venezuela and the South Caribbean region. Habitat. Associated with sandy bottoms with shell fragments. All specimens examined had bivalve

shells caught in the felt.

Distribution. Florida and Venezuela.

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