

## A new species of *Magelona* Müller, 1858 (Polychaeta: Magelonidae)

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*Abstract.*—*Magelona magnahamata*, new species, is described based on specimens found during a study of interstitial polychaetes carried out at Coiba National Park (Panamá). It differs from other species of *Magelona* with regard to features of chaetiger 9, hooded hooks on anterior abdominal segments, and coloration pattern. Specimens of this new species coincide widely with specimens from the Gulf of México reported and described previously as *Magelona* sp. C.

The family Magelonidae Cunningham & Ramage, 1888 currently includes three genera: *Magelona* Müller, 1858, with about 55 described species (Fiege et al. 2000) plus ten others identified and described, without specific names, by Uebelacker & Jones (1984); *Meredithia* Hernández-Alcántara & Solís-Weiss, 2000, with two species; and *Octomagelona* Aguirrezabala, Ceberio & Fiege, 2001, composed of a single known species.

The genus *Meredithia* is characterized by bearing large hooded curved spines in some abdominal chaetigers (Hernández-Alcántara et al. 2000), and the genus *Octomagelona* is distinguished by possessing eight thoracic segments instead of nine (Aguirrezabala et al. 2001).

Diagnostic characters of the genus *Magelona* are: presence and features of frontal horns, dimensions of the prostomium, presence of dorsal median lobes and lateral pouches, shape of chaetae on chaetiger 9, structure of the abdominal hooks and the various shapes of the lateral lamellae. These characters have been discussed by Jones (1963, 1977, 1978) and recently by Rouse (2001). The most recent review work for European magelonids is found in Fiege et al. (2000), who outlined the terminology frequently used for magelonids. Several authors agree that a high number of species

are yet to be described (Uebelacker & Jones 1984, Hernández-Alcántara et al. 2000, Wilson 2000).

The new species belongs to the genus *Magelona*, and the specimens were found during a study carried out in the National Park of Coiba (Panamá), these specimens coincide widely with those described as *Magelona* sp. C found in the Gulf of México by Uebelacker & Jones (1984).

Only two species of this family have been reported in the Atlantic coast of Panamá (*Magelona pacifica* Monro, 1933 and *M. riojai* Jones, 1963); a single species both from the Atlantic and Pacific of Panamá (*Magelona papillicornis* Müller, 1858); and only one from the Pacific (*Magelona* sp., López et al. 2002, later identified as *M. sacculata* Hartman, 1961 after re-examination). Reports on Magelonidae from Panamá were made by Monro (1933), Fauchald & Reimer (1975) and Fauchald (1977).

Uebelacker & Jones (1984) described 12 species of *Magelona* from the Gulf of México, without giving specific names (*Magelona* sp. A to L) and found specimens of *M. pettiboneae* Jones, 1963. In Mexican Pacific waters, Hernández-Alcántara & Solís-Weiss (2000) reported four species of *Magelona*: *M. pacifica*, *M. sacculata*, *M. pitelkai* Hartman, 1944a, and *M. californica* Hartman, 1944b. Other reports from nearby

regions were made by Jones (1963) (Caribbean Sea) and Hartman (1969), Jones (1978), and Blake (1996) (California).

Scientific expeditions dedicated to the knowledge of the flora and fauna of Coiba National Park (Pacific, Panamá) became regular from 1996. Characteristics of this area and previous results of the study of polychaetes from these expeditions are detailed in López et al. (1997, 2002), San Martín et al., (1997) and Capa et al. (2001a, 2001b, 2001c).

### Materials and Methods

Material from the National Park of Coiba occurs in two samples from soft substrates taken at sampling stations of Mali Rock (7°39'N, 81°41'40"W) and Granito de Oro (7°35'30"N, 81°42'30"W). Sediment is composed of coarse sand, coming from coral destruction, sampled at depths to 0.5 m and 10 m. Samples were obtained using 1-liter capacity PVC tubes (core). Samples were filtered through a 0.1-mm gauge mesh sieve and retained material was fixed in formalin and preserved in ethanol (70%).

Material from the Gulf of México was loaned by the Smithsonian Institution and belongs to the collection examined by Uebelacker & Jones (1984). The samples were taken along the northeastern Gulf of Mexico (from Alabama to Florida); 10–117 m; coarse to fine-very fine sand, silty fine to very fine sand, and sandy silt containing clay.

Specimens were examined using a compound microscope equipped with an interference Nomarsky system, and drawings were made using a camera lucida drawing tube. Pictures from scanning electron microscopy (SEM) were taken at the SIDI (Servicio Interdepartamental de Investigación), Universidad Autónoma de Madrid.

Holotype, paratypes and additional material from Coiba National Park are deposited at the Museo Nacional de Ciencias Naturales (MNCN) de Madrid. Material from the Gulf of México is deposited in the

Smithsonian Institution, National Museum of Natural History, Washington, D.C.

### Results

Genus *Magelona* Müller, 1858

*Magelona magnahamata*, new species

Figs. 1, 2

*Material examined*.—Coiba National Park, Pacific of Panamá; Granito de Oro, holotype (MNCN 16.01/8736a), paratypes (4 spec. MNCN 16.01/8736b) and 3 specimens. Mali Rock (1 spec. MNCN 16.01/8737). Additional material: Gulf of México (1 spec., USNM 86713); (1 spec., USNM 86715); (1 spec., USNM 86716); (2 spec., USNM 86717); (2 spec., USNM 86718); (1 spec., USNM 86719); (2 spec., 86720); (1 spec., USNM 86722); (1 spec., USNM 86723); (1 spec., USNM 86725); (5 spec., USNM 86725); (3 spec., USNM 86721).

*Description*.—Holotype complete specimen with 82 chaetigers, 19 mm long and 0.39 mm wide at chaetiger 5, dark pigment on several specimens at anterior dorsal part of thorax and on each side of anterior abdominal chaetigers in some specimens. Prostomium triangular to semicircular, rounded anteriorly, almost as long as wide, frontal horns absent. Palps longer than thorax, reaching to about chaetiger 23 (paratype), with 2 rows of papillae, becoming smaller toward bases of palps. Dorsolateral margins of first segment covering posterior part of prostomium and ventrally surrounding bases of palps (Figs. 1A, 2A). Thoracic chaetigers bearing, both on notopodia and neuropodia, a pair of lanceolate, wide lateral lamellae; dorso-medial and neuropodial lobes absent (Figs. 1G, 2B). Abdominal chaetigers each with pair of lateral, foliaceous lamellae, smaller than thoracic ones (Fig. 1H). Lamellae gradually decreasing in size posteriorly, becoming digitiform (Fig. 1I). Dorsal medial and neuropodial lobes small, papilliform on anterior and posterior abdominal chaetigers (Fig. 1H, I). Thoracic capillary chaetae slender, long and limbate (Fig. 2B). Chaetiger 9 lacking specialized

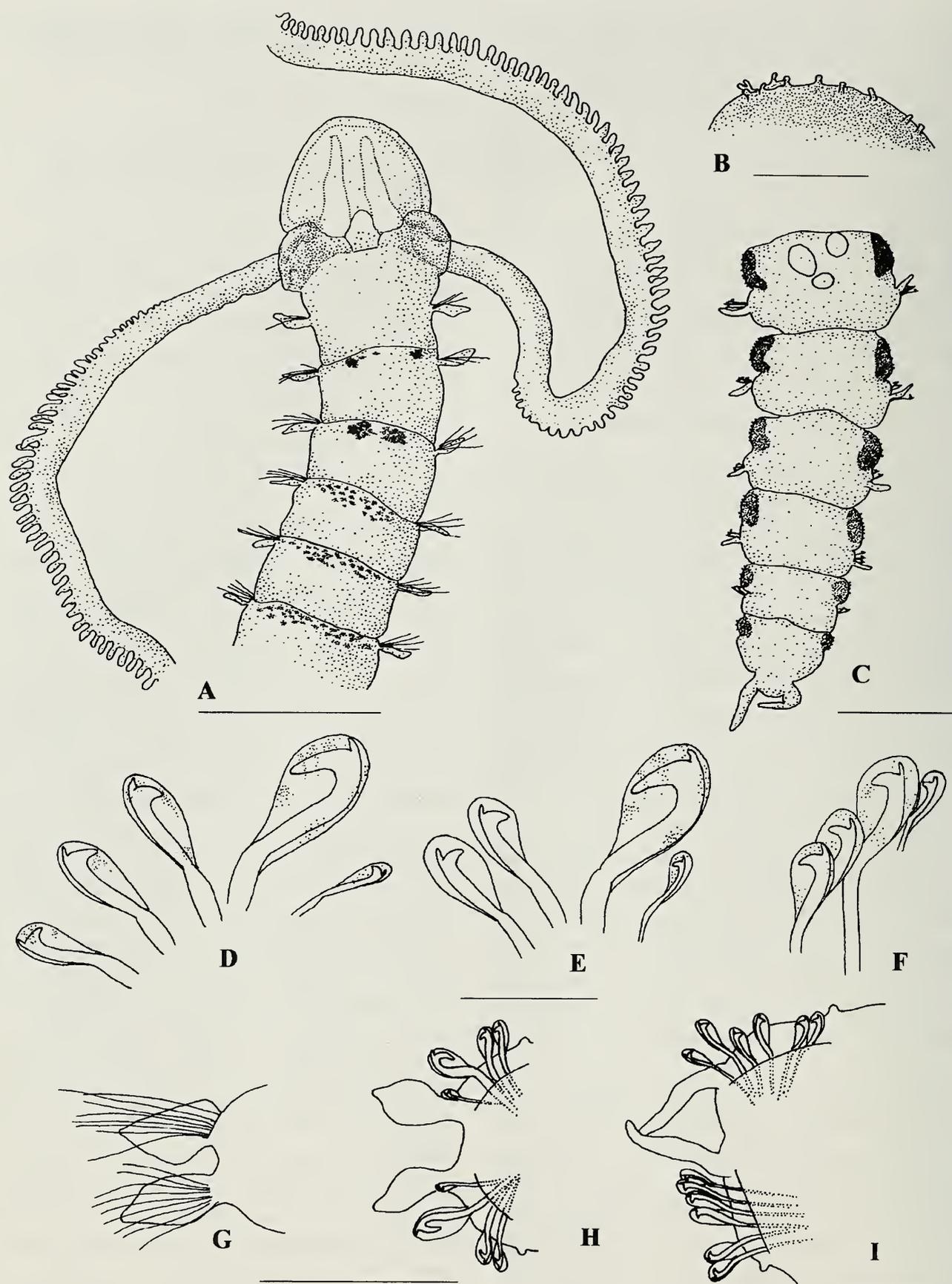


Fig. 1. *Magelona magnahamata*, n. sp. A: Anterior end, dorsal view; B: lateral papillae, posterior chaetiger; C: Posterior end, dorsal view; D: Hooks, anterior abdominal chaetiger; E: Hooks, abdominal chaetiger, segment 13; F: Hooks, posterior abdominal chaetiger; G: Parapodium, posterior view, anterior chaetiger; H: Parapodium, posterior view, median chaetiger; I: Parapodium, posterior view, posterior chaetiger. Scale A: 375  $\mu\text{m}$ ; B: 35  $\mu\text{m}$ ; C: 200  $\mu\text{m}$ ; D-F: 35  $\mu\text{m}$ ; G, H: 200  $\mu\text{m}$ ; I: 50  $\mu\text{m}$ .

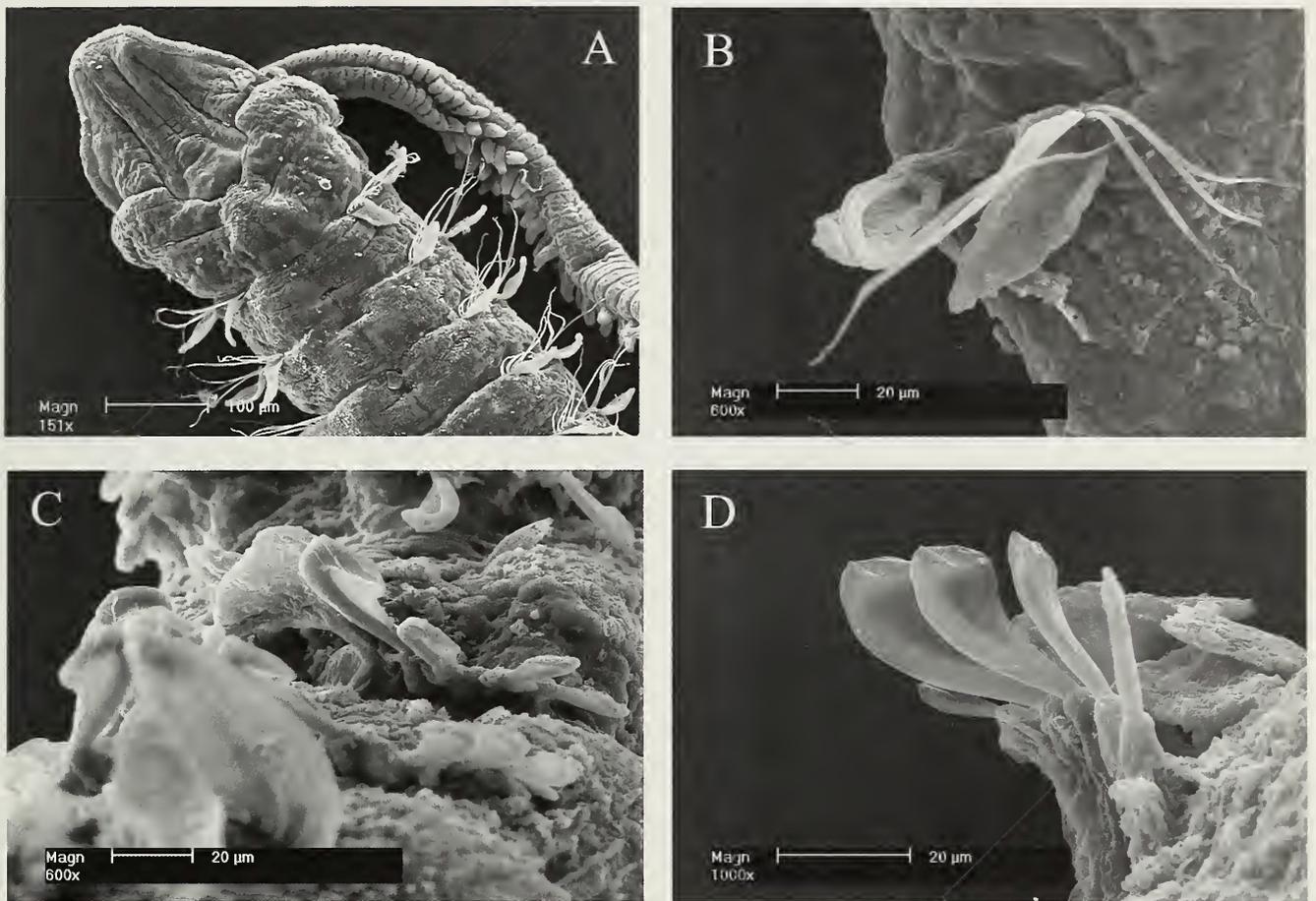


Fig. 2. *Magelona magnahamata*, n. sp. Scanning electron micrographs (SEM). A: Anterior end, dorsal view; B: Lamellae and capillary chaetae, thoracic segment; C: Hooded hooks on anterior abdominal chaetigers; D: Hooded hooks on posterior abdominal chaetiger.

chaetae. Abdominal hooded hooks bidentate, arranged in two groups on each ramus facing vis-à-vis. Hooded hooks of anterior abdominal chaetigers in three abruptly different sizes; each ramus with a very small hook originating at base of lateral lamella, a single large and strongly curved hook, and three intermediate-sized hooks (Figs. 1D, 2C). From abdominal chaetiger 2-5 on (depending upon specimens), intermediate hooks numbering two (Fig. 1E). On notopodium, smallest and largest hooks face dorsally, and intermediate sized ones face ventrally (vice versa at neuropodium) (Fig. 1H). On posterior chaetigers, hooded hooks in two sizes, a single small hook nearest to lamellae, and several larger hooks (Fig. 1F); on most posterior chaetigers all hooks of one size, all similar (Figs. 1I, 2D). The hooks, on posterior chaetigers, more numerous (5-6) than those on anterior abdom-

inal chaetigers, oriented 4 to 2 in notopodium, 4 hooks face dorsally and 2 ventrally, and vice versa in neuropodium (Fig. 1I); and in others combinations (3 to 2, 4 to 1, 5 to 1). No lateral pouches. Conical pygidium with two short digitiform cirri (Fig. 1C). Abdominal chaetigers of some specimens (from chaetiger 40 in holotype, from the first abdominal chaetiger in others) with pronounced, rounded, lateral, glandular areas anterior to parapodia, also pronounced, dark to red, and covered with small papillae (Fig. 1B, C).

*Remarks.*—*Magelona magnahamata* is characterized by having a large, strongly curved, hooded hook on each anterior abdominal parapodial ramus and by lacking modified chaetae on chaetiger 9. Some lesser differences have been found between the Atlantic and Pacific material. For instance, the apical tooth of the large hooks is very

small in some specimens from the Gulf of México, while in other specimens from this area and in those of Coiba it is long, but this condition probably can be attributed to intra-specific variation. In some specimens of the Gulf of México, the large hooks seem to be slightly more robust than those from Coiba. Finally, the size is also somewhat different: specimens from the Gulf of México are smaller than those Coiba, the largest being 10 mm long and 0.14 mm wide (at level of chaetiger 5), whereas in Coiba, the holotype is 19 mm long and 0.39 mm wide. However, these differences are not sufficient to consider the populations as belonging to two different species.

The closest species known from the Pacific Ocean is *Magelona pettiboneae* Jones, 1963. Both seem similar in the capillary chaetae, bidentate hooks, and the absence of modified chaetae in chaetiger 9; however, the hooks of *M. pettiboneae* are not so curved in anterior abdominal chaetigers, its lateral lamellae are shorter and rounded, and the hooks are more numerous.

*Magelona magnahamata* is also related to three other species from the Atlantic coast of North America (*M. papillicornis* Müller, 1858, *M. californica* Hartman, 1944b, and *M. minuta* Eliason, 1962) for which Jones (1977) established common characteristics. In this way, all four species would share a subtriangular prostomium with rounded anterolateral margins, absence of dorsal medial and neuropodial lobes at the anterior region, abdominal chaetigers with subtriangular or sublanceolate lateral lamellae, dorsal medial and neuropodial lobes papilliform, and bidentate hooded hooks, one of them, the nearest to lamellae, smaller than the remaining. However, the presence of very bidentate and strongly curved hooks separates *M. magnahamata* from the others.

Some specimens of *M. magnahamata* also possess modified posterior abdominal chaetigers with dark colored areas covered with papillae. These papillae have never

been cited for any described species in the genus.

*Etymology*.—The specific name comes from Latin *magna* = large and *hamulus*, diminutive of *hamus* = hook, referring to the large strongly curved hooded hooks.

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