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Myopedicellina, a replacement name for *Myosoma* Robertson (Entoprocta: Pedicellinidae)

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Abstract

Myosoma is a genus name proposed in 1900 by Alice Robertson for a colonial species of Entoprocta, *Myosoma spinosa* Robertson. *Myosoma* has been used for this genus up to the present time, which now includes two named species. However, we determined that Robertson's name is preoccupied by the parasitoid wasp genus name *Myosoma* (Hymenoptera: Braconidae), described by Brullé in 1846. Therefore, we propose another epithet for this entoproct genus: *Myopedicellina* **new replacement name**. Brief descriptions of the genus *Myopedicellina* and the two species belonging to it are provided.

Key words: goblet worms, nomenclature, preoccupied genus name

Introduction

Entoprocta is a small phylum of tiny, solitary or colonial, semi-transparent, sessile aquatic animals (Hayward & Ryland 1990; Nielsen 1964, 1989, 2012; Halanych 2016). About 200 entoproct species have been described worldwide, almost all of which are marine (Nielsen 2012). Only two entoproct species are known from freshwater habitats (Schwaha *et al*. 2010). During their development, entoprocts attach themselves to a substrate and often encrust upon stones, corals, shells, and algal mats (Nielsen 1971, 1989). Many entoprocts live in association with polychaetes, sponges, bryozoans or other invertebrates, in their tubes or attached commensally to their outer body surfaces (Nielsen 1964, 1989).

Entoprocts are assigned to the Lophotrochozoa, a lineage of mostly marine animals with trochophore-type immature forms (larvae) (Halanych *et al*. 1995; Halanych 2016). These are free-living planktonic larvae possessing bands of cilia, which allow them to create water currents to feed more easily on fine suspended particles (Nielsen 2018).

Mature entoprocts are goblet-shaped organisms with a concave cup-like body attached to the substrate by an elongated stalk (Franzén 1973). Because of this distinctive body shape, they are sometimes called "goblet worms." The rim of the "goblet" is ringed by a circlet of ciliated feeding tentacles with the mouth and anus located inside the circlet of cilia (hence the name Entoprocta, meaning "inside anus"). Although tiny, the anus is often visible as a dark spot due to food waste inside the rectum. This feature distinguishes entoprocts from the Bryozoa (moss animals), which have their anus located outside the circlet of ciliated feeding tentacles and hence are referred to as Ectoprocta (Nielsen & Jespersen 1997; Wasson 2002).

Entoprocts can be solitary or colonial. Individuals of solitary species are usually less than 1 mm long, whereas individuals in colonial species may reach several millimeters. Entoprocts are filtering suspension feeders. The

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ciliated tentacles create a water current between the tentacles and away from the mouth. Food particles are captured from this current by compound cilia on the lateral sides of the tentacles and moved to the mouth via mucus (Riisgård *et al*. 2000).

Myosoma spinosa Robertson, 1900, is a colonial species of goblet worm in the family Pedicellinidae and is the type-species of the genus. *Myosoma spinosa* has a bilaterally symmetrical stalked body and, like other entoprocts, it is a ciliary mucus feeder. Although rarely sampled or observed, the species is known to occur in the coastal marine waters of the western USA, where it has been found at a water depth of 42 meters (Wasson 1997; EOL 2024). A second species from the Philippines was assigned to this genus and described by Soule (1955). The etymology of the genus *Myosoma* was not explained in the original description, but based on the morphology of zooids it is possible to assume that the name is given because of their very muscular body: strong muscles are present not only in the stalk, which is characteristic for all pedicellinids, but also in the oral part of calyx, which is unique to this genus.

During our work, we discovered that the entoproct genus name *Myosoma* Robertson, 1900, is preoccupied by the parasitoid wasp genus *Myosoma* Brullé, 1846 (Class Insecta: Order Hymenoptera: Family Braconidae: Subfamily Braconinae). Brullé (1846) described and named the wasp genus *Myosoma* accompanied by the description of five new neotropical species. Szépligeti (1901) subsequently described six additional new *Myosoma* wasp species, including the first known Old-World species, *M. chinensis* (Szépligeti).

Most braconine wasps, including *Myosoma*, parasitize stem-boring insect larvae (Quicke 1987, 1997; Shaw 1995). Some provide biological control of crop pests (Shaw 1995; Quicke & Wharton 1989; Quicke 1997). For example, Quicke & Wharton (1989) described *Myosoma nyanzaensis*, an African species that attacks pyralid borers in maize and sorghum.

The greatest diversity of *Myosoma* wasp species is found in the New World, where they range from Brazil northwards to Arizona, New Mexico, and Texas. Mason (1978) described four new *Myosoma* species from Mexico and the southwestern USA. *Myosoma* species have also been recorded from Costa Rica by Shaw (1995) and from Honduras by Papp (2012). Quicke (1997) provided an identification key for the New World genera of braconine wasps, including *Myosoma*, and provided illustrations for the generic diagnostic features.

Since the name *Myosoma* should be retained for the genus of parasitoid wasps, we propose a new name for entoproct genus: *Myopedicellina* **new replacement name**. We provide a brief description of this new genus with two named species.

Taxonomic treatment

Kingdom Animalia Linnaeus, 1758

Superphylum Lophotrochozoa Halanych, 1995

Phylum Entoprocta Nitsche, 1870

Order Solitaria Emschermann, 1972

Family Pedicellinidae Johnston, 1847

Genus *Myosoma* Robertson, 1900. Junior homonym, preoccupied by *Myosoma* Brullé, 1846

Genus *Myopedicellina* Shaw, Proctor & Borisanova, 2024 new replacement name for *Myosoma* Robertson, 1900

Etymology. We propose the replacement name *Myopedicellina* because the genus *Myosoma* Robertson is morphologically very similar to the genus *Pedicellina* Sars, 1835*,* the type-genus of the family Pedicellinidae. The genera differ mainly in details of musculature, therefore the name *Myopedicellina* seems appropriate ("*myo*" means "muscle" in Latin).

We have registered this article and new name with ZooBank (https//zoobank.org/) with the registration number as follows: urn:lsid:zoobank.org:pub:B949929D-E7D4-4358-9114-CB448D999ED7.

We intend to add this name change and synonymy to the WoRMS database (https://www.marinespecies.org/) once the paper is published and the name is available.

Taxonomic diagnoses

Genus *Myopedicellina* Shaw, Proctor & Borisanova, 2024, new replacement name for *Myosoma* Robertson, 1900

Stolon consists of fertile and sterile segments separated by septa (sterile segments are sometimes absent). The stalk is muscular, with strongly developed longitudinal and diagonal muscles. The musculature of the stalk does not enter the calyx. The star-cell complex is located on the border of the stalk and calyx. The calyx attaches to the stalk obliquely, closer to the oral side. The tentacle crown faces disto-frontally. Oral side of the calyx with well-developed musculature.

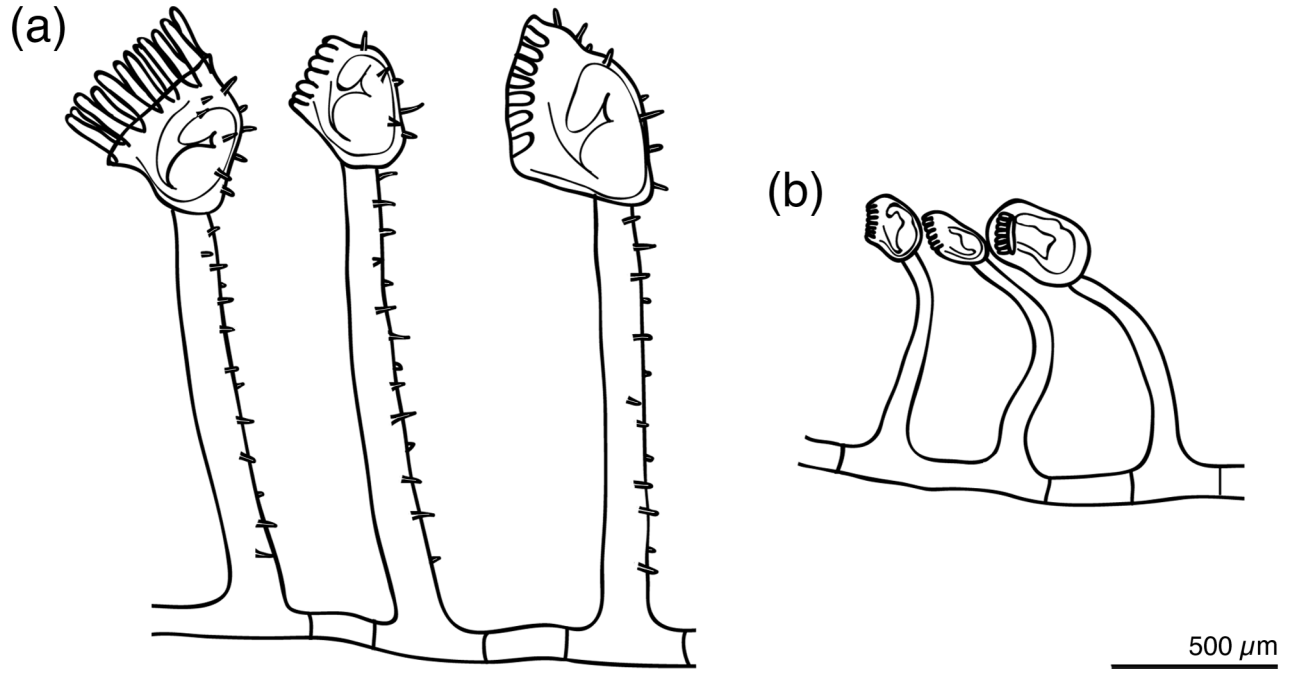

FIGURE 1. Colony structure of the two described species of *Myopedicellina* **new replacement name**. Scale bar: 0.5 mm. 1a. *Myopedicellina spinosa* (Robertson, 1900) **n. comb.** based on Figs 1a, 2 in Wasson (1997). 1b**.** *Myopedicellina hancocki* (Soule, 1955) **n. comb.**, based on Fig. 2 in Soule (1955).

Myopedicellina spinosa (Robertson, 1900) n. comb.

Type-species of the genus *Myosoma* Robertson, 1900
(Figs 1a, 2)

Diagnosis. Body size: 0.64-3.6 mm.

Stolon pale, narrow (narrower than stalk). Sterile segments often short, making the colony resemble a dense mat. Stalk wide, tapering slightly from base to apex. Longitudinal musculature on oral side of stalk more strongly developed than on aboral side. Aboral side of stalk bearing spines (Fig. 1a). Calyx large, usually with 14 short tentacles (number of tentacles ranges from 10 to 18) (Figs 1a, 2). Tentacular membrane wide. Aboral side of calyx usually with spines.

Distribution: Pacific coastal waters of southern California, United States, northwards to British Columbia, Canada.

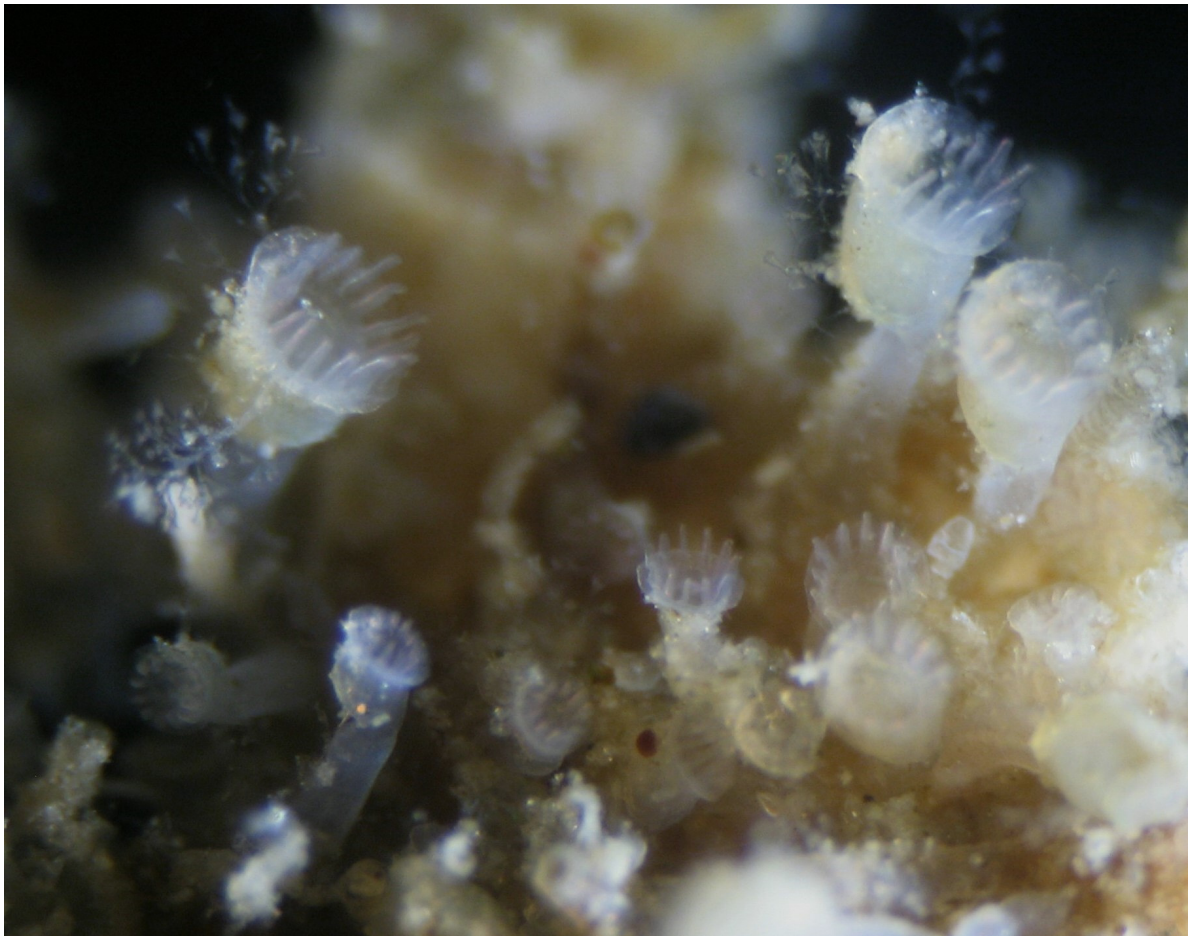

FIGURE 2. *Myopedicellina spinosa* (Robertson, 1900) **n. comb.**, collected 2 May 2010 from the underside of a boulder in a low-intertidal pool at Naples Point, 34.4337°, -119.9501°, Santa Barbara County, CA, USA, and photographed under a dissecting microscope in the lab. Photo courtesy of Jeff Goddard, Marine Science Institute, University of California, Santa Barbara. The largest calyx shown here was approximately 400 microns in diameter. Branching colonial ciliates are visible growing on the calyces of the entoproct, especially on zooids at upper left and upper right. The stolons connecting the zooids, and the spines on their calyces and stalks, are not visible. Two species of nudibranch sea slugs that specialize in feeding upon entoprocts, *Ancula pacifica* MacFarland, 1905 and *A. lentiginosa* Farmer, 1964, were found at Naples Point on the same date as this specimen of *M. spinosa*.

Ecology. Natural enemies include the nudibranch sea slugs *Ancula lentiginosa* Farmer (Fig. 3) and *Ancula pacifica* MacFarland, which can often be found on colonies of *M. spinosa* (J. Goddard, pers. comm.). *Ancula pacifica* is considered a specialized predator that feeds on entoprocts (McDonald & Nybakken 1978; Nybakken & McDonald 1981; Picton & Morrow 1994; Behrens 2004).

Myopedicellina hancocki (Soule, 1955) n. comb.

(Fig. 1b)

Diagnosis. (based on Soule, 1955). Body size: ~ 0.9 mm (stalk from 515 to 745 µm; calyx from 250 to 345 µm). Stolons branch and cross, forming dense masses on the substrate. The stalk is covered with cuticle, which forms transverse wrinkles or annulations. Spines are completely absent on stalk as well as on calyx (Fig. 1b). Calyx small, bearing 14 tentacles.

Distribution. Coastal waters of the Philippine islands.

Ecology. Unknown.

FIGURE 3. Dorid nudibranch sea slug *Ancula lentiginosa* Farmer 1964 and its white egg masses and entoproct prey, *Myopedicellina spinosa*, (Robertson, 1900) **n. comb.**, in situ, low rocky intertidal, Tarantula Reef, Jalama Beach, 34.4949°, -120.4970°, Santa Barbara Co., CA, USA, photographed 7 July 2016. Photo courtesy of Jeff Goddard, Marine Science Institute, University of California, Santa Barbara. The nudibranch slug was only 4 mm long, but it looks like a giant in this "micro-forest" growing on the underside of a low intertidal cobble at Jalama. *Myopedicellina spinosa* are the translucent, wine-glass-shaped zooids bent over (probably in defensive posture) on their relatively thick and flexible stalks and visible underneath the slug and in the foreground. The skinny, semi-opaque white tubes at lower left appear to be zooids of a cyclostome bryozoan. The fuzzy-looking stalks across the top and in front of the slug are colonial hydrozoans covered with translucent, branching colonial ciliates and a few brown benthic diatoms.

Discussion

To the casual reader it might seem remarkable that a generic junior homonym could persist in taxonomic literature for 124 years before being corrected. However, the organisms involved are exceedingly different creatures: submerged sessile marine invertebrates on the one hand, and terrestrial mostly tropical and subtropical parasitoid wasps on the other. In both cases, the animals involved are tiny with specialized life habits and are known mainly to taxonomists who study one group or the other. Few individuals would be expected to be familiar in depth with either group of animals, much less both. The growth of citizen science biodiversity platforms may help to bring such problematic names to light. Indeed, the *Myosoma* homonymy was noted by contributors to iNaturalist in 2019 (https://www.inaturalist.org/observations/19904118); however, the concern was not passed on to relevant taxonomists. The recent proliferation of scientific data available on the internet and internet search engines such as Google makes it easier to find such homonyms, but internet search engines are not designed to acknowledge or correct such subtleties of the International Code of Zoological Nomenclature (ICZN), nor are they designed to direct such problems to the attention of specialist scientists who might care. Biologists still need to remain vigilant and observant for homonyms and synonyms that may persist in the scientific literature, form collaborations to work to correct them, and endeavor to keep the taxonomic classification of animals in line with the strictures of the ICZN. With more than one million animal species already named and millions more estimated to exist (e.g., Li & Wiens 2023), nomenclatural homonyms and synonyms are likely to need correcting for many years to come.

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