Revision of *Flabelligera* Sars, 1829
(Polychaeta: Flabelligeridae)

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Abstract

*Flabelligera* Sars, 1829 is the type genus for *Flabelligeridae* de Saint-Joseph, 1894 and includes species common in temperate or cold waters in the world oceans. Together with *Flabelliderma* Hartman, 1969 they are the only genera whose neurohooks have multiarticulate handles and bending crests. However, *Flabelliderma* species differ because they form large notopodial lobes, and often have dorsal sediment tubercles. The revision of all type and non-type materials resulted in the distinction of five body patterns within *Flabelligera*; they can be recognized on the basis of body shape, tunic development, parapodial position, notopodial alignment, and shape of neurohooks. *Flabelliderma* is restricted and four genera are proposed: *Annenkova* (neurohooks with crests tapered, apparently segmented), *Flabesymbios* (notopodia in laterally descending series, notochaetae and neurochaetae in cylindrical sheaths, markedly longer than body width), *Flabehlersia* (body fusiform, notopodia ventrolateral) and *Flabesymbios* (body papillae not covered by tunic, notopodia dorsal with papillae in fan-shaped pattern, neuropodia ventral). *Flabelligera* contains 16 species with three newly described and a re-
placement name is proposed: F. haswelli n. n. pro F. affine Haswell, F. nuniezi n. sp. from the Northeastern Atlantic and Mediterranean Sea, F. orensanzii n. sp. from the Southwestern Atlantic, and F. salazarae n. sp. from the Eastern tropical Pacific. Annenkova is monotypic: A. mastigophora (Aannenkova, 1952) n. comb. from the Northwestern Pacific. Flabesymbios contains F. mundata (Gravier, 1906) n. comb. and F. profunda n. sp. both from the Antarctic. Flabehlersia includes two species: F. induta (Ehlers, 1897) n. comb. from Tierra del Fuego and F. persimilis (Aannenkova-Chlopina 1924) n. comb. from the Northwestern Pacific. Flabesymbios contains two species living on Northeastern Pacific sea-urchins: F. commensalis (Moore, 1909) n. comb. on Strongylocentrotus and F. roberti n. sp. on Centrostephanus.

**Key words:** Siphonostoma, Pherusa, hard-bottoms, soft-bottoms.

**Introduction**

Current understanding of the flabelligerid polychaetes is quite irregular since some groups have received more attention than others. For example, deep-sea, borers, or those provided with very thick cuticles are relatively less known than the more active, shallow water forms. Among the latter are the members of Flabelligera Sars, 1829. However, despite the fact that many species were described in the 19th century, there are many taxonomic problems in the whole family. Thus, after Grube’s (1877) revision, the definition of flabelligerid genera has been based upon the relative tunic development, together with the pattern of anterior end appendages, including branchiae, and chaetal features. Some later publications have been refining the early proposals, especially those made by Stöp-Bowitz (1948a), Day (1961, 1967), whereas the anterior end appendages were clarified by Spies (1975). Some species previously regarded as members of Flabelligera Sars, 1829 have been transferred to Flabelliderma Hartman, 1969; further, some morphological features like the formation of large, dorsal tubercles, were employed to provide a general approach to re-organize the species belonging to these two genera (Salazar-Vallejo 2007).

Because Flabelligera is the type genus for the family, understanding some historical details is relevant for the Flabelligeridae. Oken (1807:1168) proposed Pherusa for Amphitrite plumosa Müller, 1776; a few years later (Oken 1815:377), he defined the genus and the species. The first publication was overlooked while the second one prompted discussion, and even some replacement names, because by using the second publication by Oken, it would become a junior homonym of some previously used names in other groups. The date issue was resolved by Stöp-Bowitz (1948a:13), such that Pherusa has been retained for polychaetes.

In the original description for A. plumosa, Müller (1776:216) stated: “cirro longo utrinque, flabellis caput set-asque pediformis tegentibus” (long lateral branchiae, head with (chaetal) fan and chaetose foot-like). He attributed the name to Fabricius, probably because he had access to a supposedly, soon-to-be-published manuscript. Fabricius (1780:288–289) provided a more complete description; the more relevant features are (p. 288): “Haec sub involucro suo pupam mentitur … Corpus integrum bellucidum … Sub singulo flabello versus abdomin seta simplex robustior s. aculeus longior retro curvatus, aureo-nitidus … cuius labium superius tenuislimis brevibus numerosis purpureis obsitum … Flabella 2 maiora antnorsum tendentia caput obtegunt antice supraque connivencia, infra patentia. Involucrum cinereum sericeum, quasi exuviae, totum corpus cingit tam accurate… (p. 289) Interdum contigit feminudum vel plane nudum conspiciere vivacior em…. Extremeitatibus suis connuvens larvam simulat.” These fragments translate as (p. 288): ‘It simulates a pupa in its involucrum … Body completely transparent … Ventrally, one simple robust acicula-like chaeta, curved, golden… over the lip abundant thin purple filaments… Two large fans cover the head, imperceptible from above but visible from below. Involucrum gray, silky, dehiscent, cover the body … (p. 289) It can be seen without the cover behaving more actively … Resembles a larva by retracting the appendages.’

By following these characteristics, one has the impression that Fabricius studied at least two different forms: one would correspond with what is currently regarded as Flabelligera, because most of the above features can be easily seen in that genus; however, by referring to a form without a tunic, he might have included what we now regard as Pherusa. Conversely, the retractable appendices should be assigned to Flabelligera, since there are only eight branchial filaments in Pherusa. However, despite the fact that most features could be linked to Flabelligera, the confusion remained and was continued by the redescription made a few years later (Müller, 1789:16–17, Pl. 90, Figs. 1, 2). There, he still referred to the dehiscent tunic, added some biological notes, and two figures belonging to what now is regarded as Pherusa.

The confusion was resolved by Sars (1829:31–34, Pl. 3, Figs. 16–19). First, he restricted P. plumosa to those forms with long cephalic cage chaetae and only eight branchial filaments. Second, he described F. affinis to include