THE VELIGER

The Veliger 41(3):289–293 (July 1, 1998)

NOTES, INFORMATION & NEWS

Redescription of the Aeolid Nudibranch *Flabellina ischitana* Hirano & Thompson, 1990 (Gastropoda: Opisthobranchia)

by
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Samples from the southwestern Iberian Peninsula coast have permitted us to examine several specimens of *Flabellina* Voigt, 1834, identified initially as juveniles of *F. affinis* (Gmelin, 1791). However, a more detailed study of these specimens has shown them to be the recently described species. *Flabellina ischitana* Hirano & Thompson, 1990. We describe additional anatomical features in order to complete the descriptions of these species.

SYSTEMATICS

Family FLABELLINIDAE Bergh, 1889

Genus *Flabellina* Voigt, 1834

Flabellina ischitana Hirano & Thompson, 1990

(Figures 1–7)

Material examined: Compañia Española de Petróleos, S. A. harbor, Bay of Algeciras (Cádiz), Strait of Gibraltar (36°11′07″N; 5°23′08″W): 4 specimens of 15 to 20 mm in length, collected at 5 to 10 m depth on *Eudendrium racemosum* (Cavolini, 1758) (March 1994). Santa María del Mar beach, Cádiz. southwestern Iberian coasts (36°31′N; 6°17′W): 2 specimens of 5 mm in length, collected from the intertidal zone, under stones (December 1993). All specimens are deposited at the collections of the Laboratorio de Biología Marina of the University of Sevilla, Spain (LBM), which does not assign individual lot numbers.

Description: The general body color, including the rhinophores, oral tentacles, and ceratal bases is violet, though the apical region of oral tentacles and rhinophores is opaque white. The branches of the digestive gland can

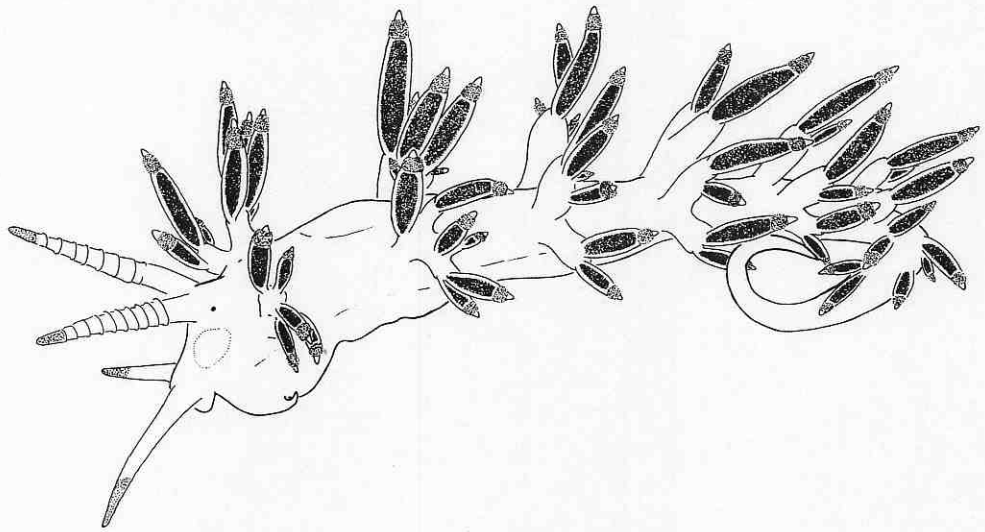
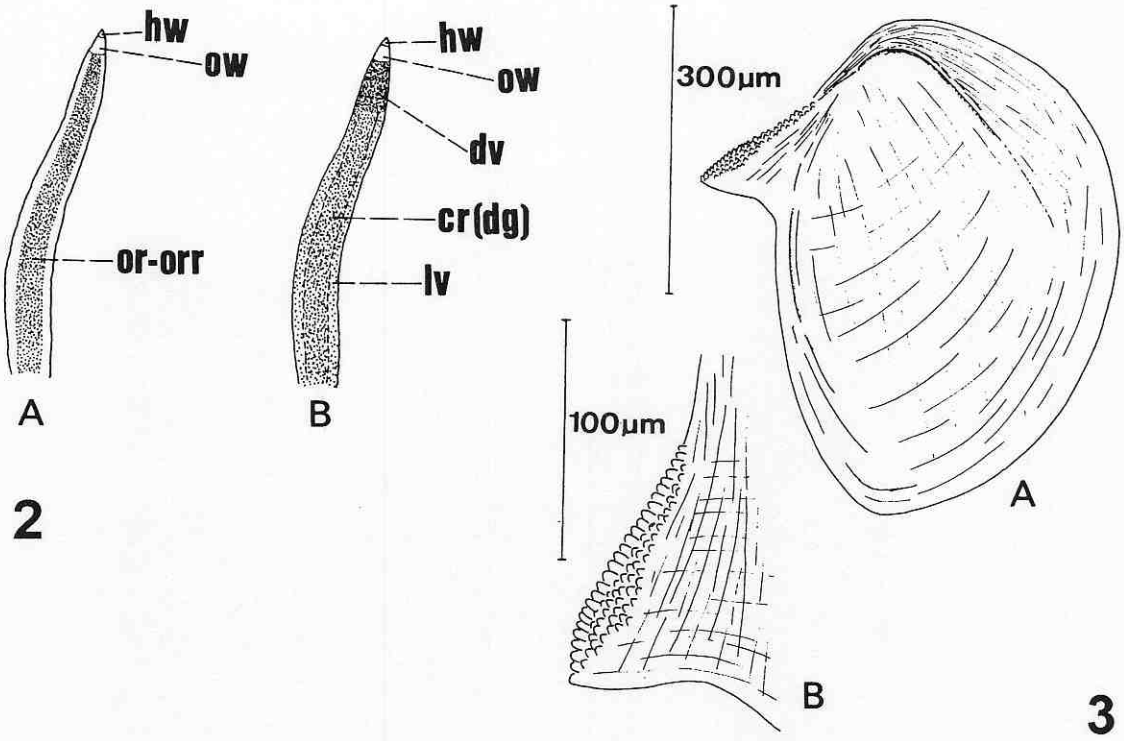


Figure 1

Flabellina ischitana. External morphology of one specimen of 35 mm in length.



Explanation of Figures 2 and 3

Figure 2. A. Coloration of a ceras of *Flabellina ischitana*. B. Coloration of a ceras of *F. affinis*. Key: cr(dg), cream digestive gland; dv, dark violet; hw, hyaline white; lv, light violet; or-orr, orange-orange red; ow, opaque white.
Figure 3. *F. ischitana*. A. Jaws. B. Detail of the masticatory border of the jaw.

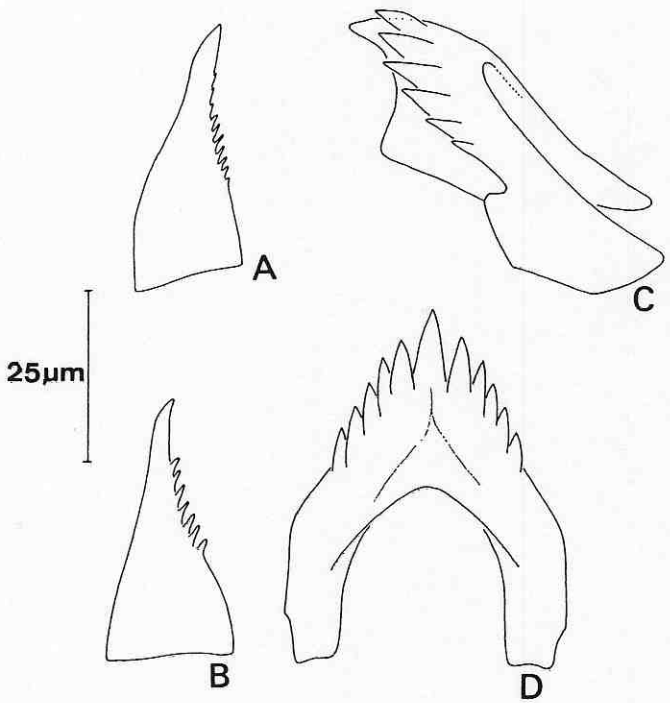


Figure 4

Flabellina ischitana. A & B. Lateral radular teeth. C. Lateral view of the rachidian tooth. D. Doral view of the rachidian tooth.

be seen through the skin of the cerata (Figure 2A). Their color is orange to red-orange. The subapical zone of the cerata has an opaque white ring that partially obscures the cnidosacs, while the apex is hyaline white. The foot sole is whitish. The body is elongate, with 5–15 ceratal groups per side. Each group inserts on a stalk and has numerous cerata which vary in number between seven to nine in the more anterior groups to only one in the most posterior group. The cerata are long and slender. The corners of the foot are curved and prominent. The rhinophores usually are annulate (8–12 lamellae), but they can be also simply rough, without well-defined annulli. The oral tentacles are elongate and similar in size to the rhinophores. The genital pore opens at the right side, in front of the first group of cerata, while the anus opens between the first and the second groups, in a pleuroproctic position. The pericardium is situated between the first and the second groups of cerata. The tail is long and pointed.

The jaws are ovoid and transluscent, with a denticulate masticarory border with several distinct rows of denticles (Figures 3A, B; 5A, B). The radular formula in a 20 mm specimen is 21 × 1.1.1. The rachidian tooth has a well-developed depressed central cusp and five to six strong denticles on either side of it. The narrow lateral teeth have up to eight to nine more or less prominent denticles (Figures 4A, D; 5C, E). The genital system (Figure 6) has a

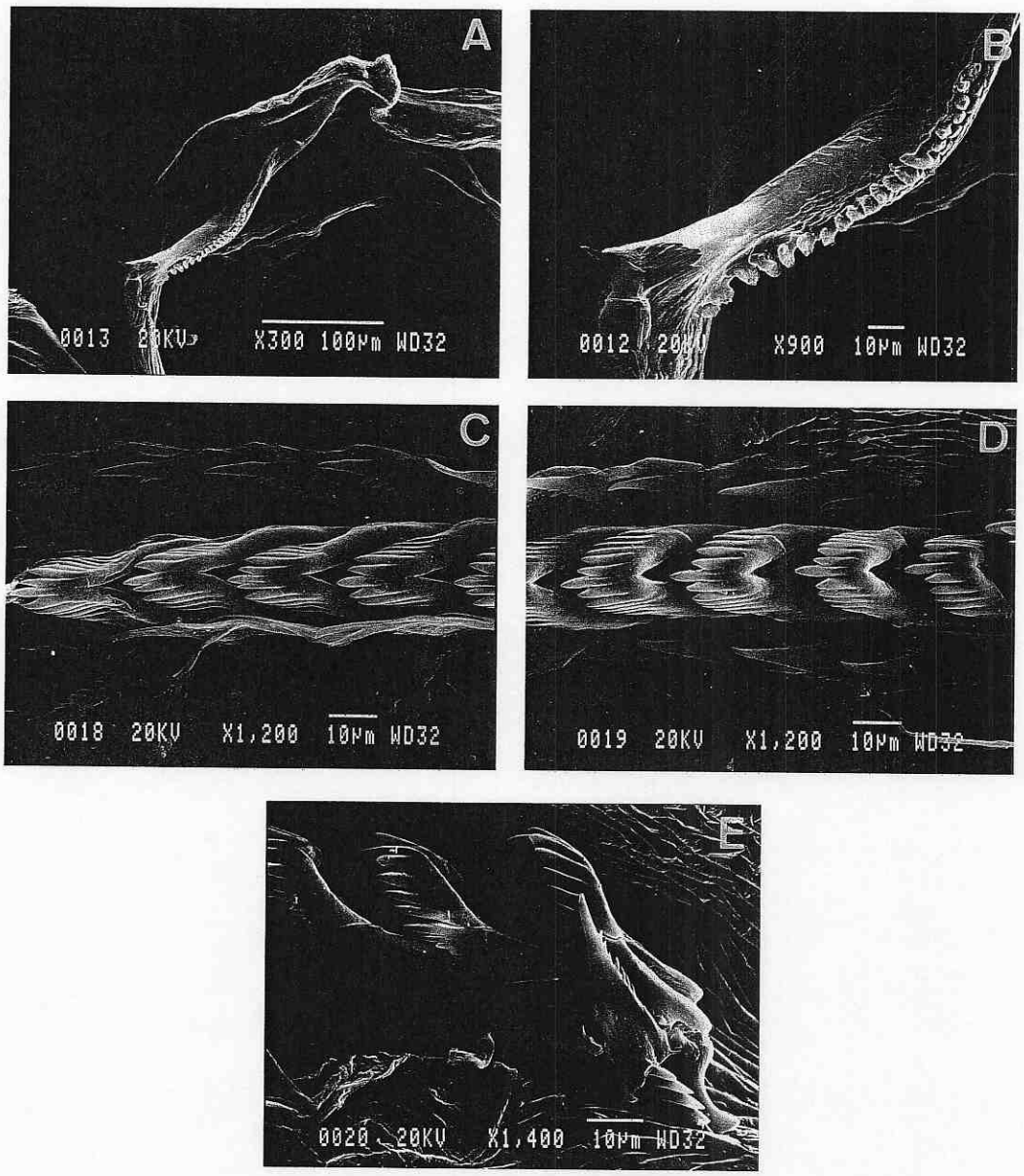


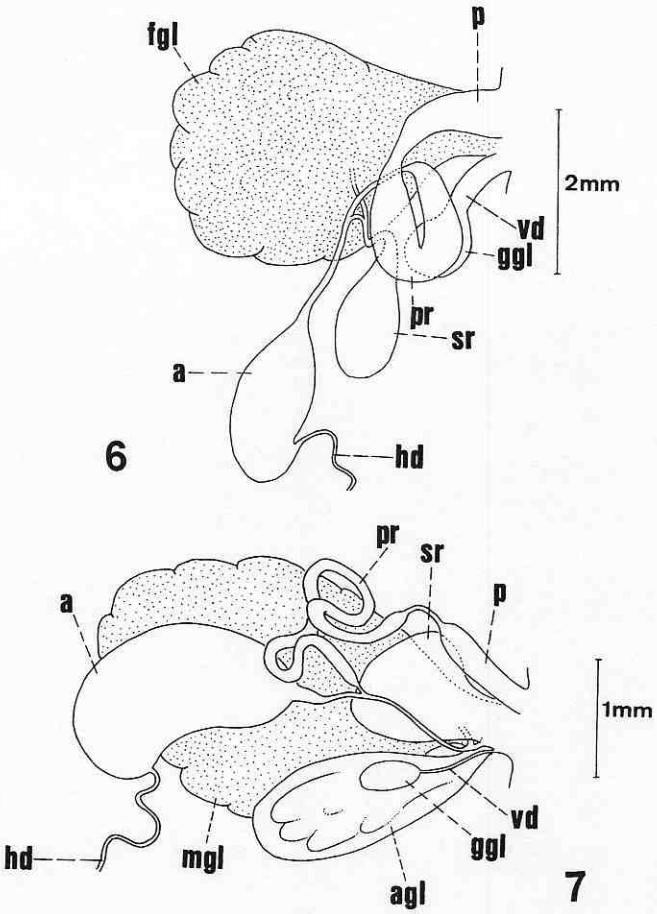
Figure 5

Flabellina ischitana. Scanning electron micrographs. A & B. Details of the masticatory border of the jaws. C, D & E. Details of the radular teeth.

large, ovoid hermaphroditic ampulla that continues as a relatively long deferent duct, which is wide along two-thirds of its length. This portion corresponds to the prostatic part, which folds over itself once, before joining the penis. The seminal receptacle is pyriform and large, while the gametolytic gland is rounded and smaller than the former. There is a thick and relatively short vaginal duct.

Distribution: *Flabellina ischitana,* described originally from specimens collected from the Gulf of Naples (Hirano & Thompson, 1990), has been also recorded in Northern Sardinia (Cattaneo-Vietti et al., 1990) and along the Mediterranean coasts of Spain (Almería) (García-Raso et al., 1992). Our specimens constitute the westernmost record of the species and the first in Atlantic waters. It is probable that many earlier records attributed to *F. affinis* (Gmelin, 1791) along the European coasts, before the description of *F. ischitana,* should be attributed to the latter species and not to the former. For example, this is the case of those of Cervera & García (1986) and Cervera et al. (1988) for the western Andalusian coasts.

Remarks: The species most similar to *Flabellina ischitana* is *F. affinis* (Gmelin, 1791). These two could be confused easily. Hirano & Thompson (1990) described the differences between both species. In *F. ischitana* the



Explanation of Figures 6 and 7

Figure 6. *Flabellina ischitana.* Reproductive system. Figure 7. *F. affinis.* Reproductive system. Key: a, ampulla; agl, albumen gland; fgl, female gland; ggl, gametolytic gland; hd, hermaphroditic duct; mgl, mucus gland; p, penis; pr, prostate; sr, seminal receptacle; vd, vaginal duct.

ceratal surface is translucent, without violet coloration. In *F. affinis,* the zone immediately under the subapical opaque white ring has another dark violaceous ring which obscures the digestive gland. This detail allows us to distinguish the species externally, even in preserved animals (Figure 2A, B). According to Hirano & Thompson (1990), the lateral teeth of *F. ischitana* usually lack denticles (only one specimen of their material had three to five tiny denticles). However, our specimens have very well developed denticles, even more so than in *F. affinis.* It could be that the teeth observed in the specimens examined in the original description were never formed or are not typical of the normal form of the teeth. Moreover, the basal zone of the lateral teeth is clearly wider in *F. affinis* than in *F. ischitana.* The most important difference observed between the reproductive systems of our specimens and those described by Hirano & Thompson is the considerably larger size of the seminal receptacle, vaginal duct, and gametolytic gland. Perhaps, the specimens on which the original description of the reproductive syste was based were collected in a nonreproductive period. spite of these differences, the arrangement of the repr ductive system of our specimens is the same of those Hirano & Thompson (1990) and those specimens of "*affinis* with an aberrant reproductive system" (probab belonging to *F. ischitana*) described by Schmekel (197 and Schmekel & Portmann (1982). In order to compa the reproductive system of the above cited species, fo specimens of *F. affinis* (30–35 mm in length, at 10–1 m depth on *Eudendrium* sp., Tarifa, Strait of Gibralta southern Iberian Peninsula, July 1994) were examine (these specimens were deposited at the collections of th LBM). If we compare the arrangement of the reproduc tive systems of *F. ischitana* (Figure 6) and *F. affinis* (Fig ure 7), differences between both species can be observe The latter species has the vaginal duct joining the du of the seminal receptacle, while the duct of the semin receptacle of the former enters the female gland, and n connection with the vaginal duct has been observe Moreover, the prostate in *F. ischitana* is thicker and shor er than in *F. affinis.* The egg masses of these two specie are also different, since they are pinkish to violaceous i *F. affinis* and white in *F. ischitana.*

Acknowledgments

We are deeply grateful to César Megina for his help i several aspects of this work and Drs. T. M. Gosliner an A. Medina for their valuable comments on the manu script. We also thank Mr. Juan González from the Se vicios Centralizados de Ciencia y Tecnología de la Univ ersidad de Cádiz for supplying facilities for the scannin electron photographs. This paper has been supported b the project "Fauna Ibérica III" (DGICYT PB92-0121) as well as by the Compañia Española de Petróleos. S. A (CEPSA), the Compañia Sevillana de Electricidad, th Excmo. Ayuntamiento de Los Barrios, and the Manco munidad de Municipios del Campo de Gibraltar throug the project "Estudio biológico de la Bahía de Algeciras."

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The Veliger 41(3):293–296 (July 1, 1998)

THE VELIGER

BOOKS, PERIODICALS & PAMPHLETS

Mollusca: The Southern Synthesis Fauna of Australia, Volume 5

edited by P. L. BEESLEY, G. J. B. ROSS & A. WELLS, with contributions by 70 authors. 1998. Published by CSIRO Publishing, Melbourne. xiv + 1234 pp. in two volumes. ISBN 0-643-05756-0. Available from CSIRO Publishing, P.O. Box 1139, Collingwood, Victoria 3066, Australia; may be ordered from home page http://www.publish.csiro.au.

Mollusca: The Southern Synthesis is the malacological component of the *Fauna of Australia,* an amibitious project that aims to provide authoritative syntheses of the primary zoological literature on all Australian taxa, to the level of generality expressed by what canonical systematics calls the family.

It is described, without exaggeration, as "the most comprehensive and authoritative treatment yet" of Australia's mollusks, with contributions from over 70 international authors (mentioning some of their names here would slight the contributions of others), 200 color and 500 black and white photographs, over 2500 line drawings, targeted for "a broad non-specialist readership, including ecologists, biologists, paleontologists, conservationists, land managers, and senior secondary and tertiary students." This somewhat understates the usefulness of the work, because it will be a valuable resource for molluscan specialists as well.

The price—$295 US ($295 A), plus shipping and handling—undoubtedly means there will be more institutional than individual buyers. Without denigrating the contribution of the authors and compilers, which deserves to be compensated—no doubt much more richly than it has been—I would still suggest that an educational committee, somewhere, should address the question of how to get a comprehensive overview of the Mollusca into the hands of the ordinary citizen for less than 300 bucks.

It would take a committee to evaluate all parts of the work in detail. A thoughtful review from a traditional systematist's point of view has appeared recently in a shell club publication (McLean, 1998) and on the MOLLUSCA Internet list (archived at http://www.ucmp.berkeley.edu/mologis/mollusca.html; search on keywords "southern synthesis" using the quotation marks). Many of its well-taken points need not be repeated here. McLean notes that dates and authorship are left off the names of taxa. That probably makes smoother reading for the "broad non-specialist readership"; but practicing taxonomists will miss the convenience of authors and dates.

A second and more serious problem stems from the fact that the work inhabits a kind of nether world between being a strictly Australian manual and a truly worldwide resource. The in-depth treatment of general biology and natural history transcends regional boundaries. Much of the information on widespread (i.e., not merely Australian) taxa is based on studies of mollusks from other regions. Because of its scope and depth, *The Southern Synthesis* bids fair to become the *de facto* global sourcebook on matters molluscan. But workers who adopt it for more than regional purposes do so at their own risk. (Whether or not this is fair payback for previously Eurocentered texts such as Woodward's *Manual of the Mollusca* could be debated at length down at the local Malacologists' Tavern.)

It is quite likely, for instance, that the classification will be adopted for many personal and institutional reference collections and as a schema for course outlines at various levels. This is anticipated by the inclusion in the work of a separate, loose-leaf classification chart. From the viewpoint of pulmonate systematics (my specialty), that would be a decidedly retrograde step. Except for the use of standard "-oidea" endings for superfamily names and some diddling with ranks, the pulmonate taxonomy is basically the Australian subset of the classification of Solem (1978), the most conservative of recent classifications of stylommatophoran land snails (Emberton et al., 1990). From this work, one could not guess the existence of the Humboldtianidae, the probable sister-group of the Helicidae, which together compose a major Laurasian clade. One would conclude that the Hygromiidae, Helicodontidae, and other taxa accepted by practically all serious