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An association between a dendronotid nudibranch (Mollusca, Opisthobranchia) and a soft coral (Octocorallia, Alcyonaria) from the Red Sea

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The association between a dendronotid nudibranch and the soft coral *Parerythropodium fulvum fulvum* (Forskål, 1775) is described from the Red Sea. The nudibranch is a new species of the genus *Marioniopsis* Odhner, 1934 (Nudibranchia: Dendronotacea). This species feeds on the alcyonacean octocoral *P. f. fulvum*, and the slugs do not take zooxanthellae from their prey. The nudibranchs are randomly distributed on the soft coral host, usually one slug per colony, and 24.5% of the soft coral colonies found are occupied by slugs. The nudibranch matches the colour of its prey and the gill clusters have a shape similar to that of the soft coral polyps, and because of these they are very cryptic on its surface. *Marioniopsis fulvicola* sp. n. is characterized by a thin, elongated body with a smooth dorsal surface, a narrow foot, seven to nine clusters of gills, three to four velar processes per side, 22–32 stomach hard plates, and jaws with more than 100 denticles arranged in four to five rows. The radula presents a median tricuspid tooth, a simple first lateral, and the rest of laterals hamate, without denticles. *Marioniopsis fulvicola* sp. n. is usually brown-yellow in colour, with brown transverse stripes forming darker patches between the gill clusters. Rhinophores and gills have a bluish coloration.

KEYWORDS: Dendronotacea; Nudibranchia; *Marioniopsis*; Octocorallia; *Parerythropodium*; Red Sea

Introduction

While diving in Eilat (Israel, Red Sea), a nudibranch was found living in close association with the soft coral *Parerythropodium fulvum fulvum* (Forskål, 1775). This coral is commonly found at depths between 3 to 40 m among the coral reefs of the Gulf of Eilat (Benayahu and Loya, 1977; Benayahu, 1985). The colonies exist in two colour morphs: yellow-brown and grey, with no taxonomic differences between

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them (Benayahu and Loya, 1983; Green *et al.*, 1992). The yellow-brown morph is found at a wide range of depths, while the grey one is common usually below 20 m. Similarly to other soft corals, *P. f. fulvum* contains a rich assemblage of secondary metabolites (Green *et al.*, 1992). These metabolites are mainly sesquiterpenes such as the volatile dye, fulfulvene, which gives the living colony its yellow colour. Quantitative variation in concentration of the major yellow morph secondary metabolite fulfulvene is due to variability among colonies within the population, rather than spatial parameters such as depth or geographical site (Kelman, 1998). A feeding deterrence study using various extracts of *P. f. fulvum* and its sclerites against common generalist predatory reef fish, revealed that this coral is protected from predation by an effective chemical defence, rather than by its sclerites (Kelman, 1998). The same study revealed that chemical defence is present in both colour morphs, and in colonies from different depths.

The slugs, specialist predators of the coral, were only discovered after touching the coral surface, when the polyps retracted, thus exposing the nudibranch. The slugs were very cryptic on the soft coral surface because of the matching coloration, and also because the gills resembled in shape the coral polyps. Several studies have been dedicated to the opisthobranch fauna of the Red Sea (Rüppell and Leuckart, 1828; Vayssière, 1906, 1912; Eliot, 1908; White, 1951; Gohar and Abul-Ela, 1957, 1959; Marcus and Marcus, 1959; Engel and Van Eeken, 1962; Heller and Thompson, 1983; Yonow, 1986, 1988, 1989, 1990, 1996). The taxonomy of the dendronotid nudibranchs of the family Tritoniidae has been confusing for a long time, mainly because many descriptions included only external anatomy and lacked information on the radula, jaws, stomach plates, and internal anatomy. Odhner (1936, 1963) clarified the taxonomy of the family at the generic level, although some problems still remain unsolved (Willan, 1988). Within the family, the genus *Marioniopsis* Odhner, 1934 is characterized by having the digestive gland in one single mass and by possessing stomach plates. The genus contains eight described species, two of them previously recorded for the Red Sea. The specimens here described as *Marioniopsis fulvicola* sp. n. did not fit into the known species of *Marioniopsis* of the Red Sea, and differed also from the other known species of the genus. Therefore, they are described here as a new species.

Material and methods

The specimens were observed, counted, and collected by SCUBA at Eilat (Israel, Red Sea), near the Marine Biological Laboratory (M.B.L.), at 4–10 m depth during September 1995 and March 1997. Egg masses were observed during March–April 1996 and 1997. Morphological observations of external features as well as notes on coloration were taken from live specimens and underwater photographs. Measurements were taken from both live and preserved specimens. Radulae, jaws and stomach plates were studied by using scanning electron microscopy (SEM). Internal anatomy of five specimens preserved in 70% ethanol was studied using a dissecting microscope. One specimen was used for histological studies. Sections were stained either with haematoxylin: eosin, or with Mason's stain, following standard procedures.

Results

All specimens were found on the soft coral host, *Parerythropodium fulvum fulvum*, by touching the coral surface, making the polyps retract, and thus exposing the nudibranchs. This coral has an encrusting growth form and it is a common species on the coral reefs of Eilat (Benayahu and Loya, 1977; Benayahu, 1985). The slugs were found between 4 and 10 m depth mainly on the yellow-brown morph of the host, being very cryptic on its surface because of their coloration and polyp-shape of gills and rhinophores. The specimens found on the grey morph of *P. f. fulvum* were grey, thus matching their host coloration. Preliminary chemical studies showed that a single coral host secondary metabolite, lemnacarnol, is selectively sequestered by the nudibranch. However, further studies with a larger sample are needed to confirm this result. No data are yet available on the possible role of the sequestered metabolite.

The nudibranchs were observed throughout the year on the soft coral host and egg masses were observed only during Spring. Extensive examination of the nudibranch distribution on 106 randomly selected colonies of *Parerythropodium fulvum fulvum* is given in table 1. The distribution of the slugs on the soft coral appears to be of a random pattern (G test for goodness of fit to a Poisson distribution; $G = 4.53$; $p > 0.05$). The slugs occupy 24.5% of the soft coral colonies. The observed density was one slug per colony, except for one case where two slugs inhabited the host. Feeding activity of the nudibranchs was noticed underwater because of the scars on the host surface showing its exposed sclerites.

Systematic description

Family **TRITONIIDAE** Children, 1823

Genus ***Marioniopsis*** Odhner, 1934
Marioniopsis fulvicola sp. n.
(Figures 1–8)

Material. A specimen of 9.5 mm (preserved length) was designated as holotype. This specimen is deposited at the Centre de Recursos de Biodiversitat Animal (Facultat de Biologia, Universitat de Barcelona, Spain). Three paratypes (ZMTAU MO 27888) are deposited at the Zoological Museum, University of Tel-Aviv, Israel. The preserved specimens studied here are deposited at the Centre d'Estudis Avançats de Blanes (C.E.A.B.–C.S.I.C., Girona, Spain). The remaining material consisted of 12 specimens, measuring from 6 to 40 mm.

Etymology. The species is named *Marioniopsis fulvicola*, indicating that the slug is an inhabitant of the octocoral *Parerythropodium fulvum fulvum*. The specific name, from the Latin *fulvus* (golden, yellow) is also indicative of the colour of both the soft coral and the nudibranch.

External anatomy. The size is up to 40 mm alive; maximum size of preserved specimens was 16 mm. The body is thin, rectangular in cross section, and elongated

Table 1. Distribution of *Marioniopsis fulvicola* sp. n. on 106 randomly selected colonies of *Parerythropodium fulvum fulvum* at Eilat.

Number of slugs per colony	Observed frequency	Poisson expected frequency
0	80	81
1	25	21
2	1	3

forming a tail (figures 1 and 2). The velum is bilobed with three to four finger-like processes, mainly simple, but sometimes bifurcated at their distal part. In the largest preserved specimen (16 mm length) two of the inner velar processes are bifurcated. The most lateral papillae are the tentacles, which are ventrally grooved. The rhinophores have a smooth, long sheath with an undulated margin, and are distally branched into thinner processes, with a main process in the middle.

The body colour of living specimens is yellow or brown-yellow, matching the soft coral where they were found. Occasionally, grey specimens were found matching the colour of the grey *P. f. fulvum* morph. The description given is for the yellow specimens since they are the most common. The rhinophores and the gills have a clear, bluish coloration, matching the shape and colour of the host soft coral polyps. The black eyes are situated just at the base of the rhinophores. The rhinophore sheath is unpigmented at the base, darker at the distal part, and bordered with a white line. The base and the tip of the rhinophores, as well as the tips of the processes, are light bluish-green. The dorsal surface of the mantle is smooth and is coloured dark brown in between the gill clusters (figure 1). Brown transverse stripes cover the body from the head to the tail, dorsally as well as laterally. The transverse brown lines are visible both in live and preserved specimens. There is a white line along the mantle margin, from gill to gill, observed only in live specimens and in the largest preserved slug. The gills are unpigmented at the base, dark brown at the top, and the tips are bluish-white.

The gill clusters, alternating in size, are nine per side in the three biggest specimens examined here (9.5, 11 and 16 mm preserved length), and seven in the smallest one (6 mm preserved length), which for its size could be a juvenile. The gills are divided into two main branches, one directed to the top, more ramified, and the other one orientated towards the sides, divided into two to three branches (figures 1 and 2). The smaller gills are directed mainly to the sides (figure 1).

Buccal armature and radula. The jaws are strong and broad, with coarse denticles at the posterior side (figure 3A). On the SEM photographs, several rows of denticles (four to five) are observed on the masticatory border (figure 3B, C). The number of rows decreases towards the posterior end, where there are fewer, coarser denticles (figure 3D, E, F). The last denticles towards the end of the masticatory border are blunt and thick, arranged in only one row with traces of a second one (figure 3F). At the anterior masticatory border, the denticles of the inner rows are large and rounded, the median rows consist of pointed denticles, and the outermost rows present groups of thin, long denticles, alternating (figure 3C). The total number of denticles in a row is more than 100.

The radular formulae of a specimen of 11 mm was 32×(38-1-1-1-38), and of a specimen of 16 mm was 40×(42-1-1-1-42). The rachidian tooth is broad and tricuspidate (figure 4A, C, D). The median cusp is pointed and the lateral cusps are blunt (figure 4C, D). Occasionally, the median tooth shows traces of one indentation on each side (figure 4D). The first lateral is different from the rest of the laterals, being wider and rounded, with a blunt cusp (figure 4C, D). The laterals are hooked and elongated (figure 4A, B), while the most marginal teeth are thinner and decrease in size towards the end of the row (figure 4E). None of the laterals bears denticles.

Stomach plates. The stomach possesses hard cuticular plates, which appear attached when air drying the sample, although they are still differentiated under SEM (figure 5). The shape of the plates is more or less rounded and flat, directed towards the stomach lumen. The number of plates in a 16 mm specimen was 32,

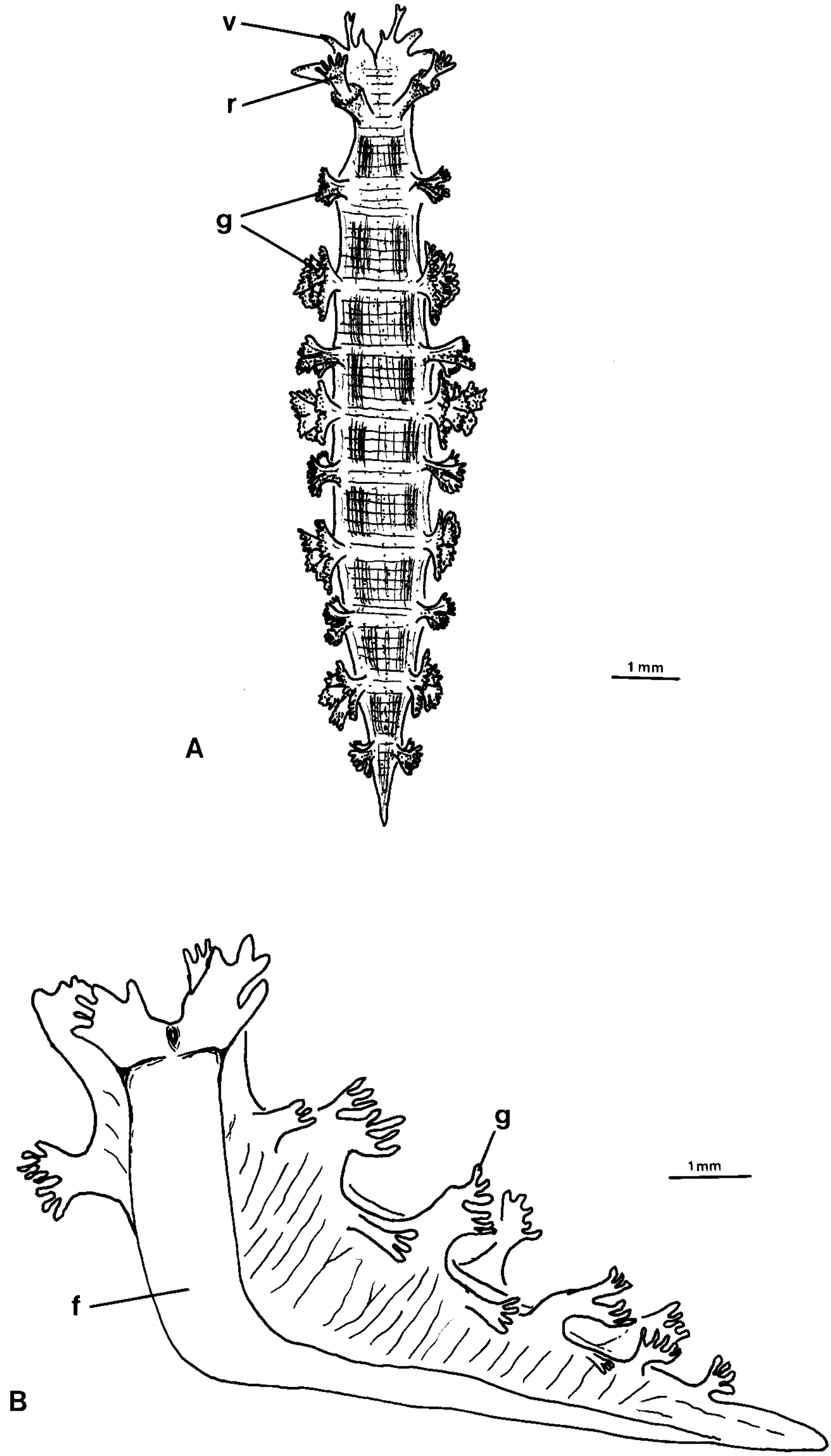


FIG. 1. *Marioniopsis fulvicola* n. sp. (A) Dorsal view of a preserved specimen, (B) Schematic view of the left side of a specimen when crawling up, showing the particular position of the gills. Abbreviations: f: foot; g: gills; r: rhinophores; v: velum.

and there were 22 in a 11 mm specimen. About half of the plates seem to be of a slightly larger size than the rest (the ones on the right and the bottom of figure 5A are larger). Between the thicker plates, a few thinner plates are irregularly distributed (figure 5B).

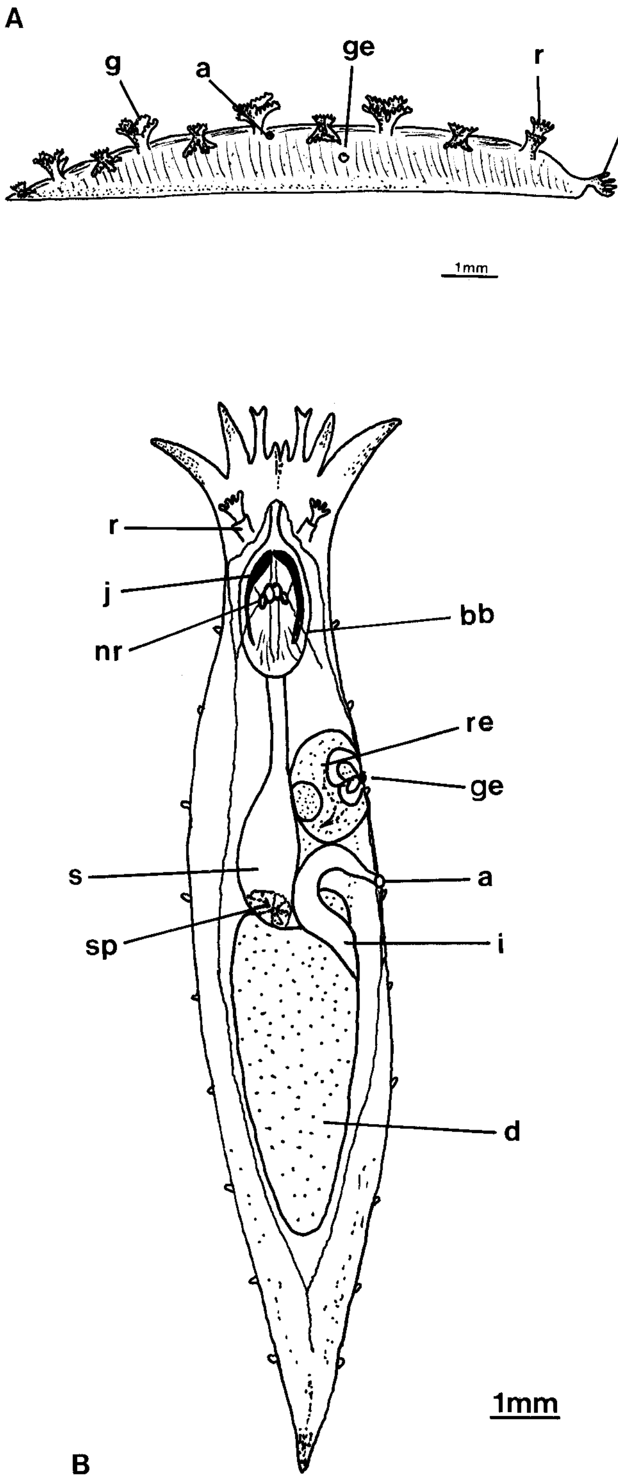
Internal anatomy. The buccal bulb is voluminous, containing the jaws and the radula. The oesophagus continues towards the posterior part of the animal by forming a stomach, full of alcyonacean sclerites in the largest animal dissected (16 mm length), and empty in the 11 mm specimen. At the posterior part of the stomach there are the stomach plates (figure 2B), as mentioned above. This part of the stomach lies behind and under the digestive gland, which actually encloses it (in figure 2 the stomach has been put forward in the scheme for clarity). The digestive gland duct enters the digestive gland, which consists of a single, compact mass. The intestine comes out from the right, anterior part of the digestive gland, turning forward to the exterior as the anus, situated just below the fourth gill cluster, on the right side of the body (figure 2). The nervous ring is situated surrounding the oesophagus, and is composed of four ganglia, with several nerves directed to the posterior part of the body and to the rhinophores.

The genital opening is situated between the second and the third gill cluster, on the right lateral side of the body (figure 2). The thin, curved vas deferens widens into a thicker tube, the prostate, which goes into the ampulla (figure 6). The ampulla is wide and elongated, and at the other side connects with the hermaphroditic gland by a thin and long hermaphroditic duct. The female gland is also internally connected with the ampulla by a thin and short duct. The seminal receptacle is rounded and pumpkin-shaped, and it opens into the female gland. The penis, which was everted in the smallest specimen, is thin and elongated, slightly wider at the distal rounded end, and has a granulated surface (figure 6).

Histological studies revealed the absence of host symbiotic algae (zooxanthellae) in the nudibranch tissues. The shape of the body section was shown to be quadrangular (figure 7). A section through the anterior part of the body showed the massive musculature of the bucal bulb, containing the jaws (figure 7A), while a section through the central part of the body showed the digestive gland, the posterior part of the stomach (in an area not completely surrounded by the digestive gland) containing the stomach plates, and the gills. The gills contained no zooxanthellae (figure 7B).

Egg masses. Egg masses were observed only in Spring (March–April). The yellow-brown egg masses, with a flat spiral shape (figure 8), had a diameter of approximately 19 mm (n = 7), and were found attached to the base of the soft coral colonies. Each egg mass contained 280–350 eggs with a diameter of 450–600 μm for the capsula and approximately 320 μm for the larvae. The eyes of the larvae could be observed by transparency before hatching. Swimming veligers were released to

FIG. 2. *Marioniopsis fulvicola* n. sp. (A) Schematic view of the right side, showing gills' position, anus, and genital opening, in a preserved specimen of 11 mm length. (B) Schematic, dorsal view of the internal anatomy of a preserved specimen. The posterior part of the stomach is enclosed within the digestive gland, but it has been put forward in the scheme for clarity. Abbreviations: a: anus; bb: buccal bulb; d: digestive gland; g: gills; ge: genital aperture; i: intestine; j: jaws; nr: nervous ring; r: rhinophores; re: reproductive system; s: stomach; sp: stomach plates; v: velum.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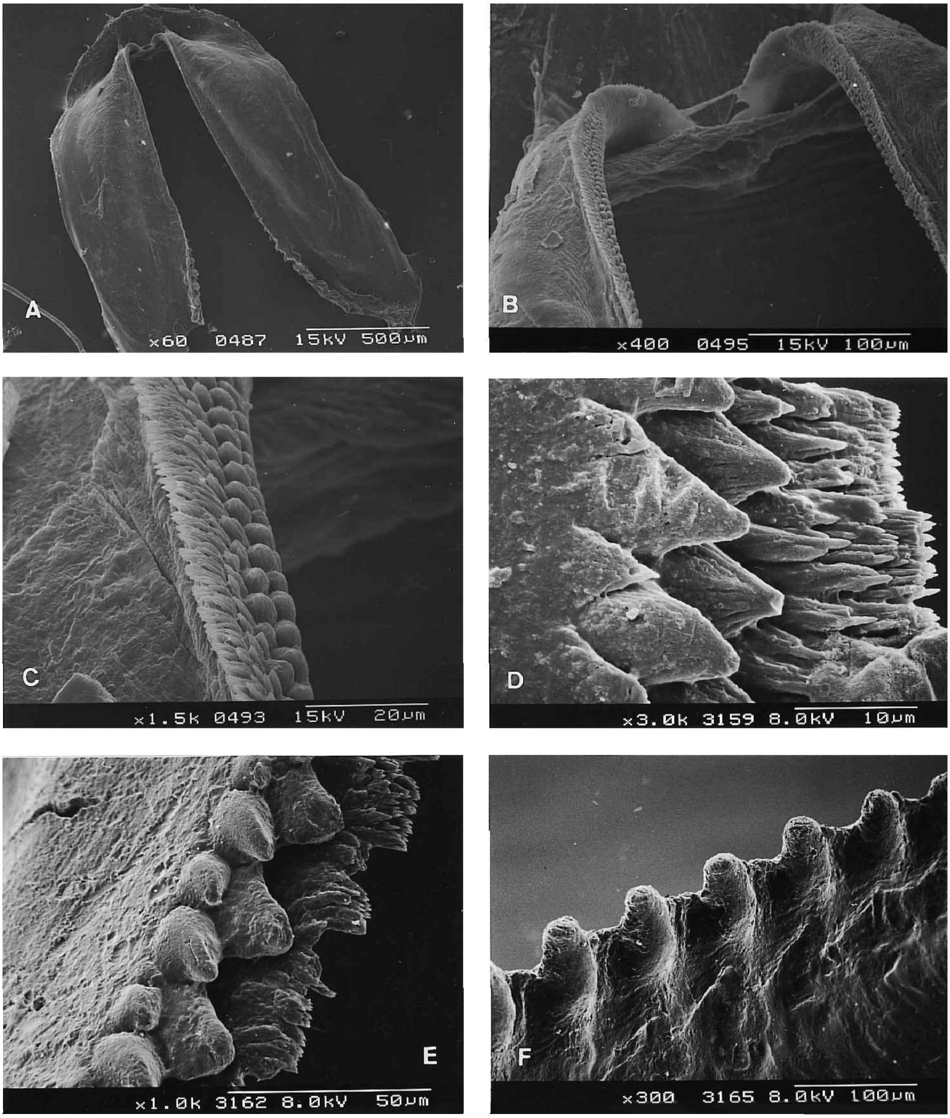

FIG. 3. *Marioniopsis fulvicola* n. sp. Scanning electron micrographs of the jaws of two specimens (11 and 16 mm preserved length). (A) General view of the shape of the jaws and denticles in the masticatory border. (B, C) Detail of the rows of denticles in the anterior part. (D, E) Detail of the denticles in the median (D) and posterior (E) areas of the masticatory border, more pointed and with a reduced number of rows; (F) Terminal part of the masticatory border of the jaws, with only one row of coarse denticles and traces of a second row.

the water about 2–3 weeks later, although unfortunately no further data are available.

Discussion

Marioniopsis fulvicola sp. n. is a specialist predator on the soft coral *P. f. fulvum*, it is randomly distributed on its host and matches its colour and shape. It is a very

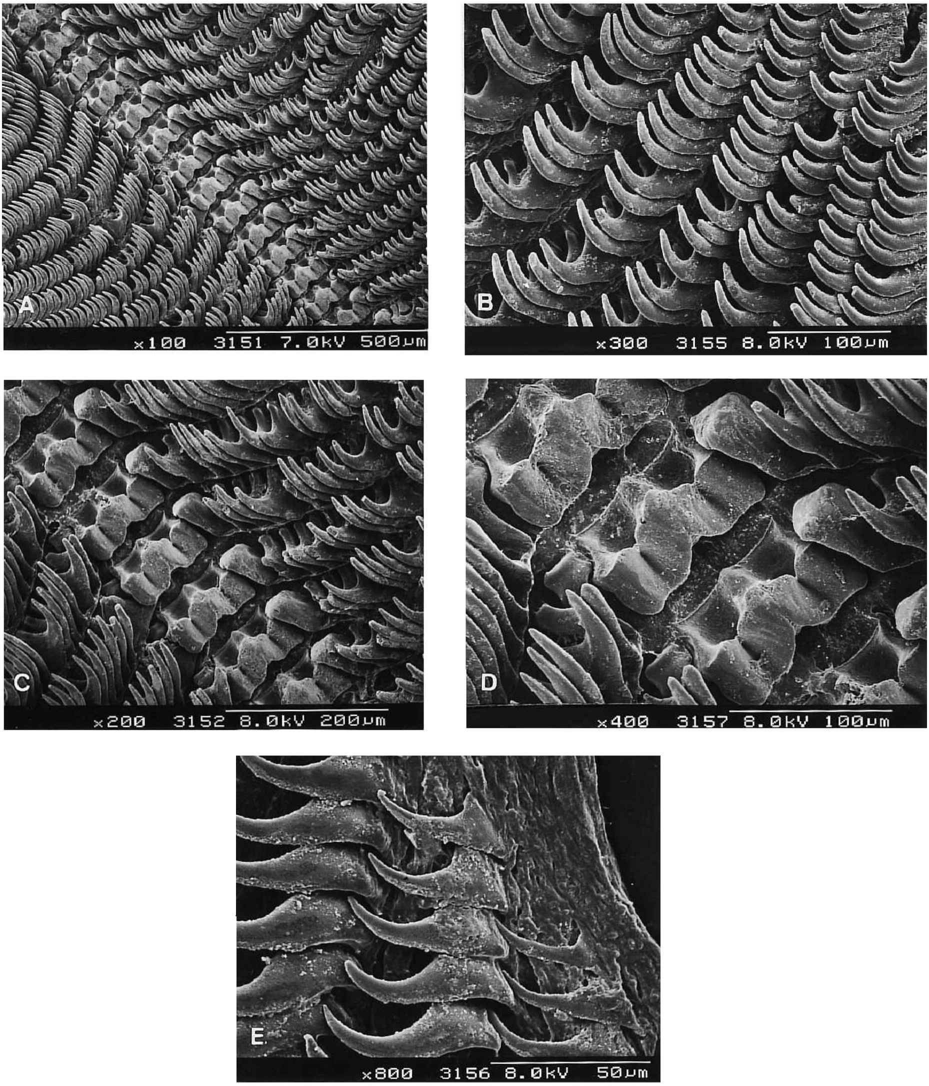

FIG. 4. *Marioniopsis fulvicola* n. sp. Scanning electron micrographs of the radula of a 16 mm preserved specimen. (A) General view of the radular teeth at the central area; (B) Detail of the teeth of the lateral-medium side; (C, D) Details of the central and first lateral teeth at the central (C) and posterior (D) part of the radula; (E) Most marginal teeth of the central part of the radula.

specific association where the nudibranch appears very cryptic on the soft coral surface. The slugs also seem to sequester a secondary metabolite from the soft coral, and are not deterred by the chemicals of their host. These chemicals, however, are deterrent to generalist fish predators from the same habitat (Kelman, 1998). Nudibranch molluscs have been previously described as very cryptic in order to avoid predation, or alternatively, being aposematic and possessing other means of defense, such as behavioural and chemical defenses (Todd, 1981; Faulkner and Ghiselin, 1983; Avila, 1995). Many cryptic species, however, also have chemical

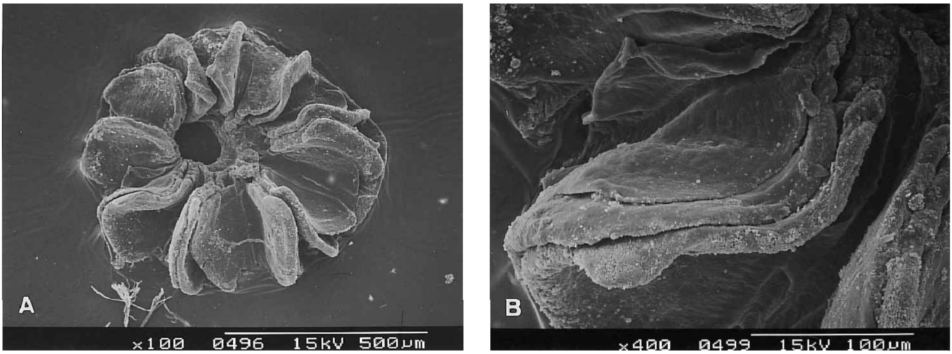

FIG. 5. *Marioniopsis fulvicola* n. sp. Scanning electron micrographs of the stomach plates of a 11 mm length specimen. (A) General view of the plates. (B) Detail of the plates, showing the thinner ones situated between the thicker ones.

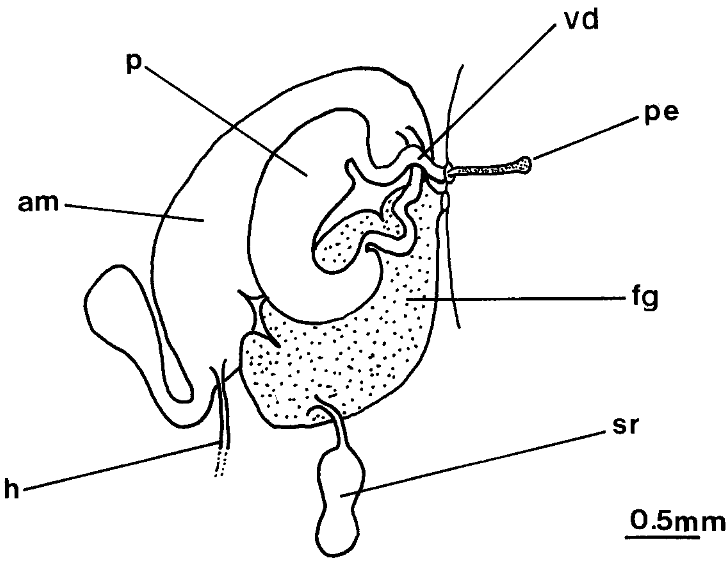

FIG. 6. *Marioniopsis fulvicola* n. sp. Schematic view of the reproductive system of a preserved specimen, showing the disposition of the different organs. Abbreviations: am: ampulla; fg: female gland; h: hermaphroditic duct; p: prostate; pe: penis; sr: seminal receptacle; vd: vas deferens.

defenses (Avila, 1995). Whether *M. fulvicola* sp. n. is a cryptic species protected also by a chemical defense remains to be established.

Regarding the taxonomy of the nudibranch, it is a new species of the genus *Marioniopsis*. Within the Family Tritoniidae, *Marionia* is the only genus with the digestive gland divided into two distinct masses. *Marioniopsis*, *Tritonia*, *Paratritonia*, *Tritoniella*, and *Tritoniopsis* possess one single mass in the digestive gland (Odhner, 1934, 1936, 1963; Willan, 1988). Furthermore, *Marionia* and *Marioniopsis* are the only two genera with hard stomach plates (Odhner, 1934, 1936, 1963). Therefore, due to the presence of stomach plates in our specimens, and to the fact that the digestive gland is composed of one single mass, identification of our specimens as a species of the genus *Marioniopsis* as described by Odhner (1934) is clear. Other

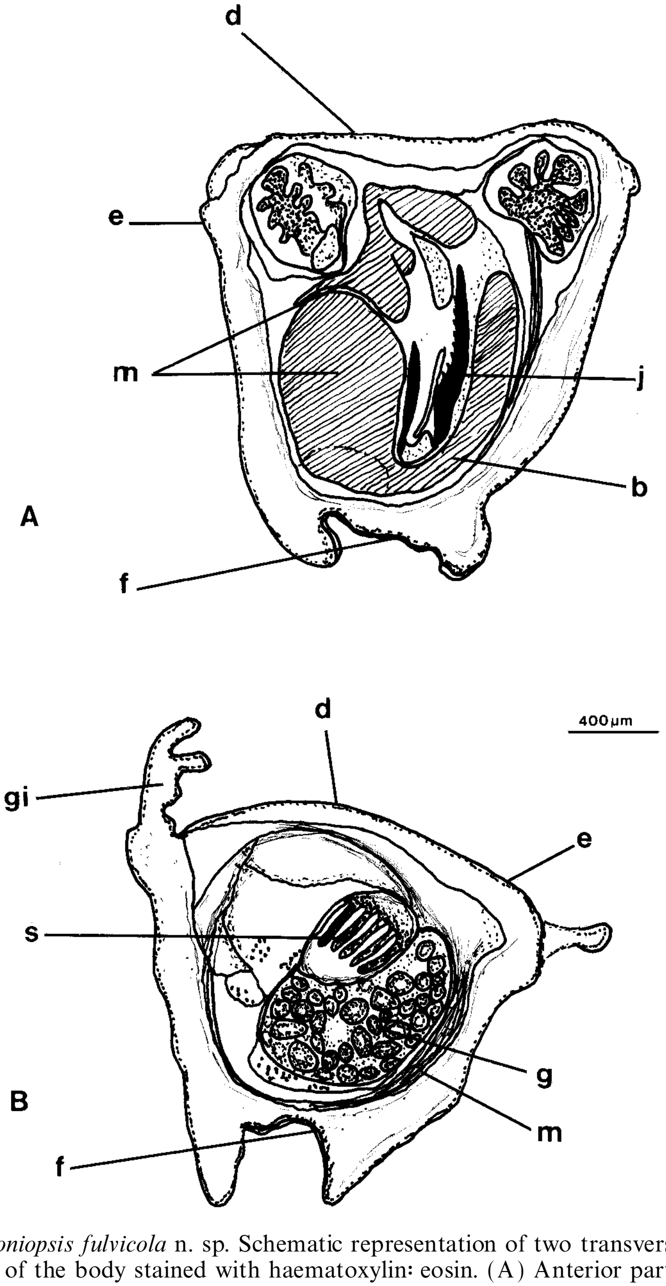

FIG. 7. *Marioniopsis fulvicola* n. sp. Schematic representation of two transverse histological sections of the body stained with haematoxylin: eosin. (A) Anterior part of the body, at the level of the buccal bulb. (B) Central part of the body, at the level of the stomach plates. Abbreviations: b: buccal bulb; d: dorsum; e: epithelium; f: foot; g: digestive gland; gi: gills; j: jaws; m: musculature; s: stomach plates.

differences with the species of the genus *Marionia*, apart from the division of the digestive gland, are the position of the genital aperture (beneath the third cluster or further back), and the velar processes always very ramified (Odhner, 1936). We agree with Willan (1988) that the presence of stomach plates should have greater systematic value, and thus, that a revision of the tritoniid genera is needed. In the

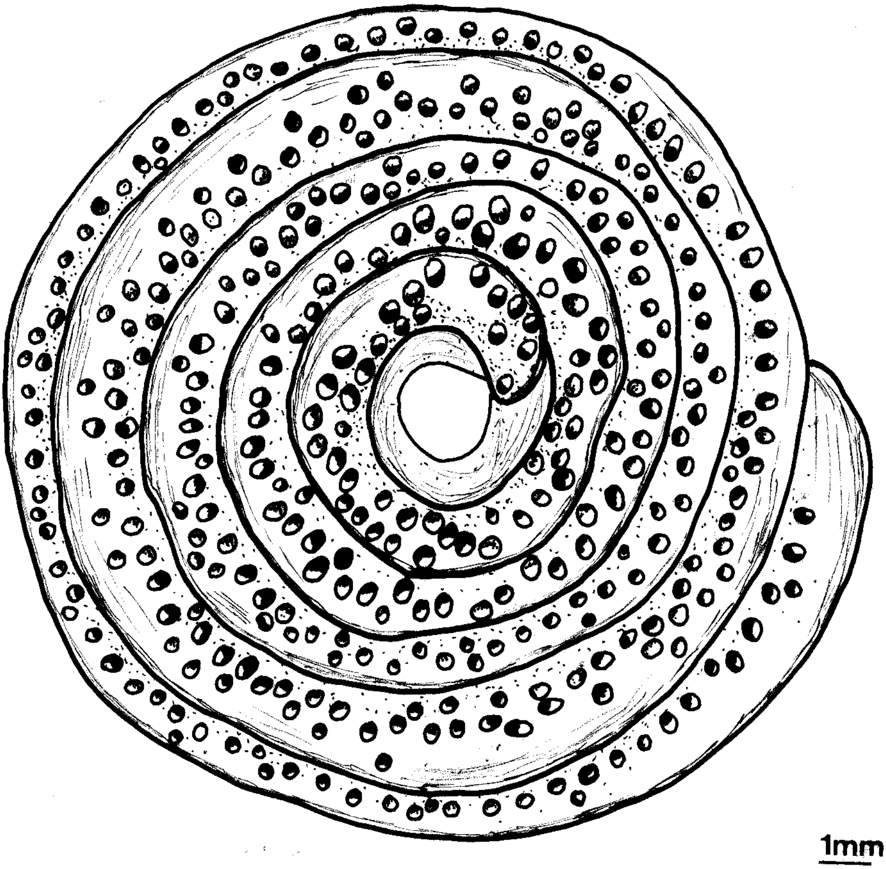

FIG. 8. *Marioniopsis fulvicola* n. sp. Schematic dorsal view of an egg mass.

meantime, and as Willan (1988) discussed, it seems better to keep the new species within the genera described by Odhner (1936, 1963).

Within the genus *Marioniopsis*, eight valid species exist, none of which have the characteristics of our specimens (tables 2 and 3). Six of the described species possess a warty dorsal surface, while only *M. levis* (Eliot, 1904), *M. platyctenea* Willan, 1988, and our species have a smooth surface. The species with warty dorsal surface differ from *M. fulvicola* sp. n. in several other characteristics, such as the presence of more than 100 stomach plates, and only one row of denticles on the jaws (table 3). Among the species with warty dorsal surface there are the two Red Sea species. *M. cyanobranchiata* (Rüppell and Leuckart, 1828) and *M. rubra* (Rüppell and Leuckart, 1828). *Marioniopsis cyanobranchiata* is similar in coloration to *M. fulvicola* n. sp. (table 2). However, *M. cyanobranchiata* is different in possessing a median radular tooth with two denticles on each side of the cusp (different from all other *Marioniopsis* species), and in possessing more than 100 stomach plates, and only one row of denticles on the jaws (table 3).

Of the species with smooth dorsal surface, *M. platyctenea* is very peculiar in its flat shape and has other characteristics atypical for the genus (the high numbers of gill clusters, its small size, etc; see Willan, 1988); *M. platyctenea* was described from Australia, and is clearly distinct from *M. fulvicola* sp. n. The external description of

Table 2. Comparative biological features of the species of the genus *Marioniopsis*. Abbreviations: E04: Eliot (1904); RL28: Rüppell and Leuckart (1828); O36: Odhner (1936); G87: Gosliner (1987); W88: Willan (1988); p.s.: present study.

Species	Synonyms	Colour	Prey	Geographical distribution	References
M. cyanobranchiata (Rüppell and Leuckart, 1828)	*Marionia arborescens* Bergh, 1890 *Marionia ramosa* Eliot 1904	Yellow; black, brown reticulate; bluish gills, velum and rhinophores	unknown	Red Sea, Ceylon, east and south Africa, Philippines	RL28, O36 E04, G87
M. rubra (Rüppell and Leuckart, 1828)	—	Yellow, rose; blue gills	unknown	Red Sea, Mauritius	RL28, O36
M. babai Odhner, 1936	*Duvaucelia irrorata* Baba, 1933	Dark yellow, green; white, red or brown spots	unknown	Japan	O36
M. albotuberculata (Eliot, 1904)	—	White; red-brown reticulate; white tubercles inside reticulate	unknown	East Africa	O36 E04
M. viridescens (Eliot, 1904)	—	Red-brown; green reticulate; white spots	unknown	East Africa	O36 E04
M. dakini (O'Donoghue, 1924)	—	Grey or pink; marbled brown	unknown	Australia	O36
M. levis (Eliot, 1904)	*Marionia distincta* Bergh, 1905	Purple-brown; brown stripes and dots; pink gills and rhinophores with red spots	unknown	East Africa	O36 E04
M. platyctenea Willan, 1988	—	Pale brown; brown and white patches	*Parerythropodium hicksoni*	Australia	W88
M. fulvicola sp. n.	—	Yellow, brown; brown stripes; bluish gills and rhinophores	*Parerythropodium fulvum*	Red Sea	p.s.

Table 3. Comparative morphological features of the species of the genus *Marioniopsis*. Abbreviations: E04: Eliot (1904); RL28: Rüppell and Leuckart (1828); O24: O'Donoghue (1924); O36: Odhner (1936); W88: Willan (1988): p.s.: present study.

Species	Size (mm)	Dorsal surface	Number of gill clusters	Velar processes per side	Radula	Jaws	Stomach plates	References
M. cyanobranchiata	up to 60	warty	9–13	4–7, simple	(36-60) × (15-50)-1-1-1-(15-50)	1 row, traces of a 2nd, > 100 denticles	100–120	RL28 O36, E04
M. rubra	up to 70	warty	10–12	6, branched	45 × (50-55)-1-1-1-(50-55)	1 row 100–120 denticles	—	O36 RL28
M. babai	up to 60	warty	7	6, branched	40 × 25-1-1-1-25	> 100 denticles	—	O36
M. albotuberculata	up to 45	warty	9	5, some branched	40 × 95-1-1-1-95	1 row, traces of a 2nd few denticles, 10 larger	> 100	E04 O36
M. viridescens	up to 42	warty	10	7, largest branched	37 × 90-1-1-1-90	1 row, traces of a 2nd few denticles, 10 larger	≈ 120	E04 036
M. dakini	up to 88	warty	13	6-7, branched	67 × 135-1-1-1-135	1 row, ≈ 40 denticles	present	O24
M. levis	up to 50	smooth	9–10	3-5, branched	(45-52) × (80-130)-1-1-1-(80-130)	1–3 rows, 14–30 denticles	≈ 150	E04 O36
M. platyctenea	up to 17	smooth	100	5-7, simple	(36-48) × (71-103)-1-1-1-(71-103)	10 rows	30–35	W88
M. fulvicola sp. n.	up to 40	smooth	7–9	3-4, simple few branched	(32-40) × (38-42)-1-1-1-(38-42)	4–5 rows > 100 denticles	22–32	p.s.

M. levis indicates a similarity with *M. fulvicola* sp. n. (tables 2 and 3; also see figure 4 in Plate IV of Eliot, 1904). However, internal anatomy allows clear distinction of both species; *M. levis* possesses 14 to 30 denticles on the jaws, disposed in one to three series, while *M. fulvicola* possesses more than 100 denticles arranged in four to five series (figure 3). Furthermore, *M. levis* has about 150 stomach plates, while *M. fulvicola* sp. n. has only 22–32 plates (figure 5). *Marioniopsis levis* is also different in that the velar processes are all branched, the number of radular teeth are about or more than 100 per half row, and the cusps of the radular teeth are irregular and denticulated (Eliot, 1904).

The fact that different species (*M. cyanobranchiata* and *M. fulvicola* sp. n.) may share a similar external pattern and coexist in the same geographical area, the Red Sea, suggests the presence of a mimetic group, as described for many other nudibranchs (e.g. Ros, 1976). Another unrelated species which could belong to this colour group is *Tritoniopsis elegans* Savigny, 1826 [*Tritonia*]. Odhner (1936) stated that a 'strikingly similar coloration' exists in *M. cyanobranchiata* and *Tritoniopsis elegans* (and its synonyms *Tritonia glauca* Rüppell and Leuckart, 1828, *T. glama* Rüppell and Leuckart, 1828, and *Tritoniopsis gravieri* Vayssière, 1912). *Tritoniopsis elegans* is also similar in coloration to *M. fulvicola* sp. n., and furthermore, *T. elegans* also presents alternating gills. In fact, alternating gills were considered typical of *Tritoniopsis* species (Odhner, 1936), and were not previously described in *Marioniopsis* species. Since confusion among these two genera existed in the past (see Odhner, 1936; Marcus, 1983), and some species may coexist geographically in the Red Sea (Rüppell and Leuckart, 1928; Odhner, 1936), a careful examination of the internal anatomy is needed for a correct classification. Comparison of their radulae (unicuspidate median tooth in *Tritoniopsis*), and the absence/presence of stomach plates would be enough to distinguish between the two genera. It must be emphasized again that external descriptions are often not sufficient to allow identification of nudibranchs, and detailed studies of the hard structures and internal anatomy are needed to clarify the systematics of particularly confusing groups.

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