



A new *Manzonina* (Gastropoda: Rissoidae) from northwestern Morocco

Una nueva *Manzonina* (Gastropoda, Rissoidae) del Noroeste de Marruecos

Serge GOFAS*

Recibido el 10-II-2010. Aceptado el 30-IV-2010

ABSTRACT

A new species of the family Rissoidae is described from the upper slope of Northwestern Morocco. Some characters of this species would relate it to the genus *Manzonina* whereas others are shared with species currently assigned to the genus *Alvania* (subgenus *Alvinia*). Some possible diagnostic characters of *Manzonina* are discussed.

RESUMEN

Se describe una nueva especie de la familia Rissoidae, de la parte superior del talud continental del Noroeste de Marruecos. Algunos caracteres de esta especie sugieren su inclusión en el género *Manzonina*, mientras otros se asemejan a especies que se clasifican actualmente en el género *Alvania* (sugénero *Alvinia*). Se comentan algunos caracteres posiblemente diagnósticos del género *Manzonina*.

INTRODUCTION

Small gastropods belonging to the family Rissoidae are a prominent part of the littoral, shelf and upper bathyal molluscan faunas in the Mediterranean, temperate Western Europe and are particularly species-rich in the north-east Atlantic archipelagos: Canary Islands and Madeira (VAN AARTSEN, 1981; ROLÁN, 1987; MOOLENBEEK AND FABER 1987; MOOLENBEEK AND HOENSELAAR 1989; ROLÁN AND FERNANDES, 1990; AMATI, 1992; HOENSELAAR AND GOUD, 1998; SEGERS AND SWINNEN, 2002), the Azores (GOFAS 1990; BOUCHET AND WARÉN 1993; HOENSELAAR AND GOUD 1998), and the Cape Verde Islands (ROLÁN 1987; MOOLENBEEK AND ROLÁN 1988). There are currently 317 species of

this family recognized as valid for the Mediterranean and Northeast Atlantic south to 28° N (CLEMAM database <<http://www.somali.asso.fr/clemam/>> searched April, 2010) and this inventory may be near completion. However, the species in this family are particularly prone to evolve towards the loss of planktotrophic larval development, therefore giving rise to "pairs" of related species where the non-planktotrophic species is derived and tends to have a restricted geographic range (OLIVERIO, 1994; 1996). For this reason, more discoveries of new species are to be expected.

This paper provides a description of a species encountered in the straits of

* Departamento de Biología Animal, Facultad de Ciencias, Universidad de Málaga, E-29071 Málaga, Spain. Correspondence: sgofas@uma.es

Gibraltar, presently known only from two specimens but definitely distinct from those previously known in the area.

The species is tentatively assigned to the genus *Manzonina*, and the definitive characters of *Manzonina* are discussed.

SYSTEMATICS

Genus *Manzonina* Brusina, 1870

Type species: *Turbo costatus* J. Adams, 1797, by original designation (= *Turbo crassus* Kanmacher, 1798; non *Turbo costatus* von Salis Marschlins, 1793)

Manzonina alexandrei n. sp. (Figs. 1-7)

Type material: Holotype MNHN 22876 (shell, 1.8 × 1.1 mm) from "Balgim" sta. DW57, and 1 paratype MNHN 22877 (specimen, 1.5 × 1.0 mm) from a sample collected in the vicinity of strait of Gibraltar, from fishermen, 1971. Only known from the type specimens.

Type locality: off NW Morocco, 35° 42' N, 06° 35' W, 548 m.

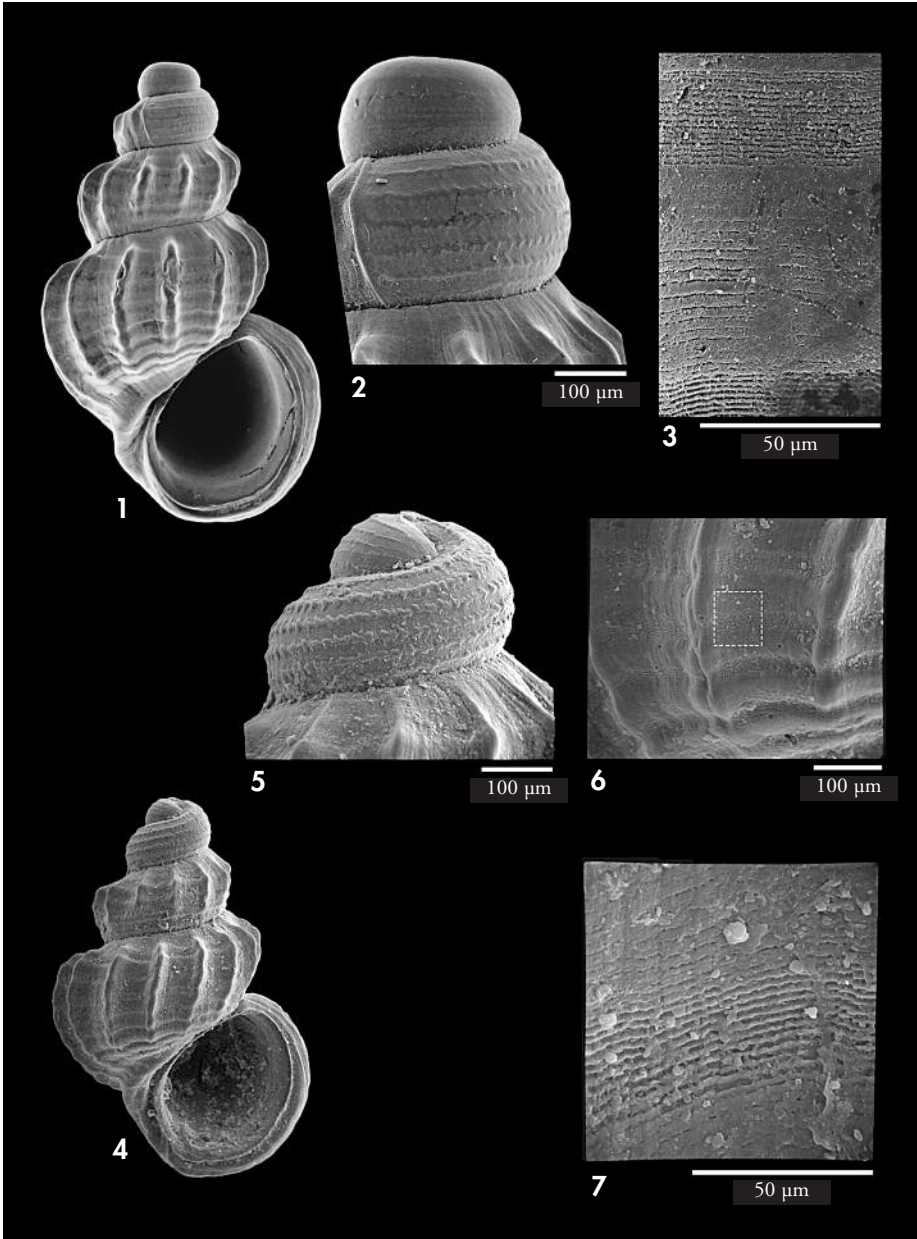
Etymology: The species is dedicated to my son Alexandre

Description. Shell with a moderately high spire, adults up to 1.8 × 1.1 mm. Protoconch of 1.25 convex whorls, with a sculpture of six rather flat, beaded spiral cords, narrower than the interspaces; the nodes on the cords extend towards the interspaces in which they determine faint axial folds. Teleoconch of 2 1/4 to 2 1/2 convex whorls, angulated at a distance abapically from suture so as to make the whorls shouldered. Axial sculpture of flexuous, narrow and very elevated folds, highest at the shoulder of whorls, fading out prior to reaching the suture which is not at all undulated, and reaching quite far towards the abapical surface of the body whorl. Spiral sculpture of very flat cords, broader than the interspaces, bearing irregular, very faint grooves along spiral lines forming irregular pits; interspaces with those grooves much more definite, separating ca. 15 raised spiral threads; the spiral cords are more elevated towards the abapical half of the body whorl, below the line prolonging the suture. The base of the body whorl with a rather strong and elevated spiral cord, situated very close to a small umbilical chink and separated from the rest of the whorl by a distinct spiral depression. Outer lip opisthoclinal, bent in its adapical part and thickened externally by a broad rim sloping gently

towards the adjacent surface of body whorl; smooth inside. Inner lip rather thin, slightly detached from the preceding whorl except in the centre of the parietal area. Shell colour white.

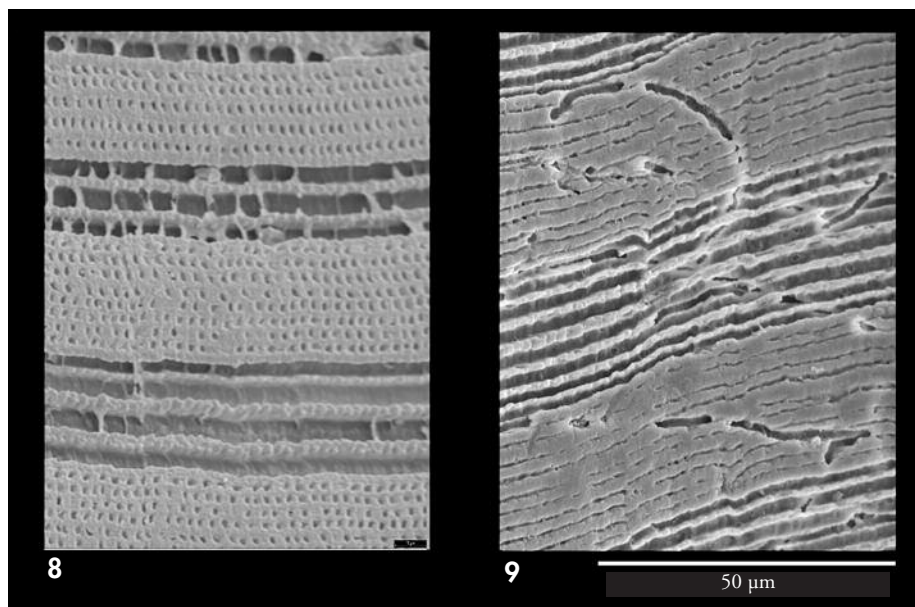
Remarks: This species seems to be living on hard substrate in rather deep-water, which would explain its rarity, or difficulty of collection. The specimen from the strait of Gibraltar was retrieved from a large stone riddled with cavities, together with many specimens of *Alvania zylensis* Gofas and Warén 1982 and other gastropods.

The new species features a combination of character states which are not found together in any of the species described in the eastern Atlantic or Mediterranean. The protoconch with nodose spirals differs drastically from the pattern seen in most species of *Manzonina* with paucispiral protoconch from Macaronesia (see MOOLENBECK AND FABER, 1987) or from the Lusitanian seamounts (see GOFAS, 2007) where the cords, if any, are smooth. It is reminiscent of the kind of protoconch seen in *Alvania weinkauffi* Weinkauff, 1868 (see PONDER, 1985, fig. 102B) and in its sibling *Alvania fischeri* (Jeffreys, 1884) but there, the nodes are even more separated, looking under high magnification like small patches aligned over a minute spiral thread and pasted over the underlying surface.



Figures 1-7. *Manzonina alexandrei* n. sp. 1: holotype from off NW Morocco, 548 m, apertural view (actual size 1.8 mm); 2: protoconch of the holotype; 3: detail of microsculpture of the holotype; 4: paratype from near the strait of Gibraltar, apertural view (actual size 1.5 mm); 5: protoconch of the paratype; 6, 7: detail of microsculpture of the paratype.

Figures 1-7. Manzonina alexandrei n. sp. 1: holotipo, frente a la costa NO de Marruecos, 548 m, vista apertural (tamaño real 1,8 mm); 2: protoconcha del holotipo; 3: detalle de la microescultura del holotipo; 4: paratipo, cerca del estrecho de Gibraltar, vista apertural (tamaño real 1,5 mm); 5: protoconcha del paratipo; 6, 7: detalle de la microescultura del paratipo.



Figures 8, 9. Details of microsculpture of *Manzonina*, comparable to Figures 3 and 7. 8: *Manzonina crassa* (Kanmacher, 1798), specimen from Benalmádena, southern Spain; 9: *Manzonina arata* Gofas, 2007, shell from Ampère seamount.

Figuras 8, 9. Detalles de la microescultura de Manzonina, comparables con las Figuras 3 y 7. 8: Manzonina crassa (Kamacher, 1798), ejemplar de Benalmádena, sur de España; 9: Manzonina arata Gofás, 2007, concha del banco Ampère.

The most similar species with respect to characters of the teleoconch may be *Manzonina arata* Gofas, 2007, described from the Ampère seamount off western Morocco, which shares the general outline and aspect of the spiral sculpture. The latter is nevertheless clearly different in having the ribs protruding against the suture so as to make it strongly undulated; the completely different protoconch, keeled with indistinct and smooth spirals, may indicate that they are unrelated. There is also a superficial resemblance with *Frigidoalvania thalassae* Bouchet and Warén, 1993, described from deep water of Bay of Biscay, but the latter differs in being much larger and in having more numerous and less raised axial ribs. The protoconch of *F. thalassae* is radically different, being rather conical in shape with faint spiral striae.

The generic placement in *Manzonina* is backed by the general build of the

shell and the presence of a spiral depression around the base of the body whorl. Nevertheless it must be stressed that the separation between the genera *Manzonina*, *Alvania* s.l. and *Onoba* is not at all clearcut. *Manzonina*, as currently recognized, may form a monophyletic group around its type species *Manzonina crassa*. Its diagnostic character states (MOOLENBEEK AND FABER, 1987) include (1) the presence of a "duplicate" peristome i. e. a strong outer rim on which the sculpture of the outer surface of the body whorl is usually continued, and an inner rim continuing the inner surface of the aperture, (2) the presence of a spiral depression and/or stronger spirals on the abapical part of body whorl, and (3) a peculiar microsculpture where the larger spirals bear spirally aligned rows of minute (ca. 1 µm) pits whereas the intervening spaces are furnished with minute, raised spiral lamellae, and still

more minute axial threads abutting between these. The value of this latter character has been treated as doubtful by BOUCHET AND WARÉN (1993: 657)

The microsculpture seen in *Manzonina alexandrei* n. sp. is not as characteristic as that seen in the type species and in many Macaronesian coastal species. It is nevertheless not structurally different, and differs from *Manzonina crassa* (figure 8) in that the spiral elements in the grooves are more closely packed together and the pits are not so neatly demarcated. However such a structure can be seen to be very similar in *Manzonina arata*, which from other characters can be assumed to be phylogenetically related to *Manzonina lusitanica* Gofas 2007, *M. crispa* (Watson, 1897) and to the type species.

PONDER (1985: 48) advocated that the subgenus *Alvania* Monterosato, 1884 (with *Alvania weinkauffi* as type species)

should belong to *Manzonina* rather than to *Alvania*, based on shared characters such as the presence of a duplicated peristome, of stronger spiral cords on the abapical part and the radula with numerous cusps on the inner side of the laterals. This view is also supported by the fact that *Alvinia* has a simple triangular metapodial tentacle like *Manzonina*, and unlike *Alvania* s. str. (see PONDER, 1985: 39) which has a bundle of separate metapodial tentacles.

The combination of characters seen in *Manzonina alexandrei* n. sp. further supports Ponder's view that some species which lack the typical *Manzonina*-microsculpture may nevertheless be more closely related to *Manzonina* than to *Alvania* s. str. More independent characters, including those based on molecular sequences, are needed to assess the value of this morphological character to be held as diagnostic of *Manzonina*.

BIBLIOGRAPHY

- AMATI B. 1992. On a new species of *Manzonina* from Selvagens Islands, (Gastropoda, Prosobranchia, Rissoidae). *Publicações Ocasioneis da Sociedade Portuguesa de Malacologia*, 16: 9-12.
- BOUCHET P. AND WARÉN A. 1993. Revision of the Northeast Atlantic bathyal and abyssal Mesogastropoda. *Bollettino Malacologico*, supplement 3: 579-840.
- GOFAS S. 1990. The littoral Rissoidae and Anabathridae of São Miguel, Azores. *Açoreana*, supplement: 97-134.
- GOFAS S. 2007. Rissoidae (Mollusca: Gastropoda) from northeast Atlantic seamounts. *Journal of Natural History*, 41 (13-16): 779-885
- HOENSELAAR H.J. AND GOUD J. 1998. The Rissoidae of the Cancap expeditions, I: the genus *Alvania* Risso, 1826 (Gastropoda Prosobranchia). *Basteria*, 62: 69-115.
- MOOLENBEEK R.G. AND FABER M.J. 1987. The Macaronesian species of the genus *Manzonina*. *De Kreukel*, 23 (1): 1-16, pl. 1; 23 (2-3): 23-31; 23 (10): 166-179, pl. 2-3.
- MOOLENBEEK R.G. AND ROLÁN E. 1988. New species of Rissoidae from the Cape Verde Islands (Mollusca, Gastropoda) part 1. *Bulletin, Zoologisch Museum, Universiteit van Amsterdam*, 11 (14): 121-126.
- MOOLENBEEK R.G. AND HOENSELAAR H.J. 1989. The genus *Alvania* on the Canary Islands and Madeira (Mollusca, Gastropoda) part 1. *Bulletin, Zoologisch Museum, Universiteit van Amsterdam*, 11 (27): 215-228.
- OLIVERIO M. 1994. Developmental vs. genetic variation in two Mediterranean rissoid complexes. *Journal of Molluscan Studies*, 60: 461-465.
- OLIVERIO M. 1996. Contrasting developmental strategies and speciation in N.E. Atlantic prosobranchs: preliminary analysis. En: *Origin and evolutionary radiation of the Mollusca* (Taylor, J. ed.), Oxford University Press, pp. 261-266.
- PONDER W. 1985. A review of the genera of the Rissoidae (Mollusca: Mesogastropoda: Rissooacea). *Records of the Australian Museum*, supplement 4: 1-221.
- ROLÁN E. 1987. El género *Manzonina* Brusina, 1870 en el Archipiélago de Cabo Verde. *Publicações Ocasioneis da Sociedade Portuguesa de Malacologia*, 9: 27-36.
- ROLÁN, E. 1987. Aportaciones al estudio de los Risoaceos de las Islas Canarias: I. Descripción de tres especies nuevas. *Publicações Ocasioneis da Sociedade Portuguesa de Malacologia*, 8: 1-4.

- ROLÁN E. AND FERNANDES F. 1990. Tres nuevas especies del género *Manzonia* (Mollusca, Gastropoda) para la costa occidental de Africa. *Publicações Ocasionais da Sociedade Portuguesa de Malacologia*, 15: 63-68.
- SEGERS W. AND SWINNEN F. 2002. *Manzonia ba-calladoi*, a new species from the Madeiran archipiélago. *Gloria Maris*, 40 (6): 120-125.
- VAN AARTSEN J.J. 1981. *Manzonia overdiepi*, a new marine gastropoda (Rissoidae) from Canary and Madeira Is. *La Conchiglia*, 15 (168-169): 6-7.