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## ON THE DOUBTFUL RECORDS OF *ALVANIA PLATYCEPHALA*, *ALVANIA PAGODULA* AND *ALVANIA DIDYMA*, WITH THE DESCRIPTION OF TWO NEW RISSOID SPECIES (MOLLUSCA; GASTROPODA: RISSOIDAE)

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### ABSTRACT

Two new species of *Alvania* are described from Bermuda. Both species have been wrongly identified in the past. The generic classification is discussed but a definitive statement based only on conchological characters seems impossible.

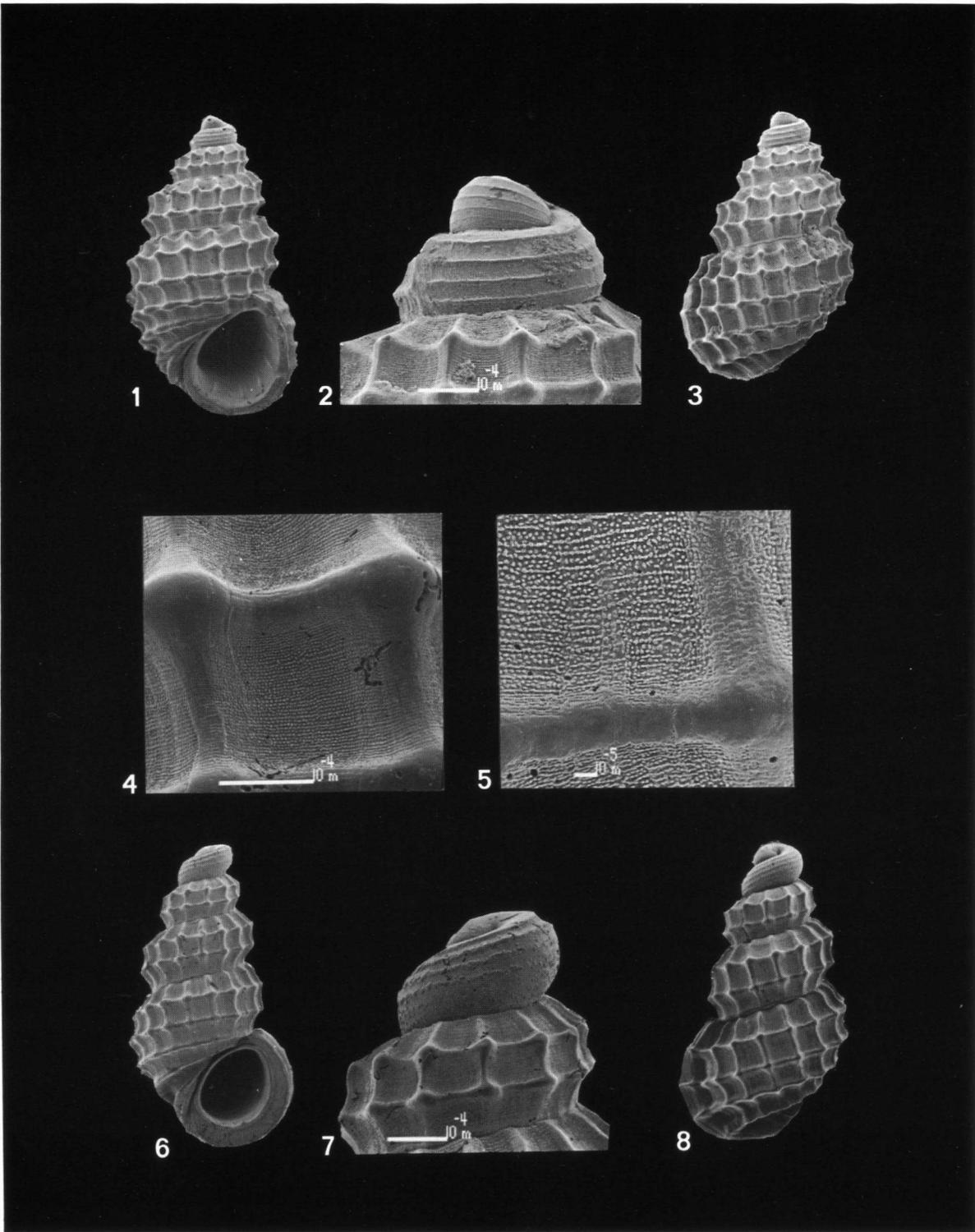
### INTRODUCTION

Samples of shell-sand, dredged from Gibbons Bay, Bermuda, in April 1985 contained three interesting Rissoid species; one being the common *Alvania* (s.l.) *auberiana* (d'Orbigny, 1842), a species occurring abundantly throughout the West Indies. Its presence on Bermuda, which has a mainly West Indian mollusc fauna, is not surprising, since this species has a multispiral protoconch, indicating a planktotrophic development (Thorson, 1950). This type of larval development enables gastropod species to disperse over considerable distances.

The other two species of *Alvania* found in Gibbons Bay have protoconchs of less than 1½ whorls, indicating a non-planktotrophic larval development. They seem to be less widely distributed than *A. auberiana*, and are probably endemic to Bermuda.

Ponder (1985), in his recent and most exten-

sive review of the Rissoidae, considered the genus *Alvania* Risso, 1826 (type-species *Alvania europea* Risso, 1826 = *Turbo cimex* Linnaeus, 1758) as generically different from *Alvinia* Monterosato, 1884 (type species *Alvania weinkauffi* Mohrenstern MS Weinkauff, 1868). Also he considered *Alvinia* as a subgenus of *Manzonina* Brusina, 1870 (type species *Turbo costatus* J. Adams, 1797 (non Von Salis, 1793 = *Turbo crassus* Kanmacher in G. Adams, 1798). The main difference between *Alvania* and *Alvinia* is the presence of a thickened outer lip in the latter, giving the impression of a duplicated peristome (Ponder, 1985: 48), and the presence of strong and rather smooth basal spiral grooves. We agree that both should be considered as distinct on the genus-level. But, after examining several dozen specimens of *Alvania weinkauffi*, we could not find any indication of a duplicated peristome although some worn or beached specimens superficially gave that impression. Likewise, *Manzonina* s. s. should



be considered as generically different as well. The latter is an exclusively North East Atlantic group, with a microsculpture different from *Alvinia*. The spiral sculpture in *Manzonina* is not always "conspicuously weaker than axials" (vide Ponder, 1985: 47; Moolenbeek & Faber, 1987a, b).

All species of *Manzonina* have a smooth furrow on the base, which is lacking in both *Alvania* and *Alvinia*. Several West Indian Rissoid species closely resemble the type-species of another subgenus of *Manzonina* (sensu Ponder, 1985), viz. *Simulamereлина* Ponder, 1985 (type-species *Merelina corrugata* Laseron, 1956). Provisionally, we use the subgenus *Simulamereлина* for one of our new species. However, on shell characters alone, we cannot give an alternative to the systematics as proposed by Ponder (1985). The other new species shows conchological resemblance to the genus *Alvinia* but has a prominent duplicated peristome and smooth spiral grooves on the base. According to Ponder (1985), this indicates a relation with the genus *Manzonina*. We provisionally use, however, the subgenus *Flemellia* (type-species *Turbo zetlandica* Montagu, 1815) for the smaller new species, because in shell characteristics, it resembles the type of this genus rather than *Manzonina* s.s.

***Alvania (Simulamereлина) bermudensis* nov. spec.**  
figs. 1-4

*Alvania (Alvinia) platycephala*, Verrill & Bush, 1900: 539, pl LXV fig. 24. - *Alvania didyma*, Waller, 1973: 39, fig 20. - *Alvania platycephala*, Waller, 1973: fig. 21.

*Type material.* Holotype in ZMA (Moll. no. 387010) and 1550 paratypes (ZMA Moll. no.

387011). Paratypes will be distributed to Muséum national d'Histoire Naturelle (Paris), United States National Museum (Washington), Los Angeles County Museum, Australian Museum (Sydney), and New Zealand National Museum (Wellington).

*Type locality.* Bermuda, Gibbons Bay, April 1985; leg. A. T. Guest.

*Other material studied.* Bermuda; leg. A. J. Peile, 1947, 3 specimens (ZMA).

*Description of holotype.* Shell length 2.4 mm, width 1.25 mm. Protoconch of 1¼ rounded whorls, slightly tilted with about 6 smooth spiral riblets at equal distances from each other covering the whorls.

Teleoconch with 3½ convex whorls, strongly sculptured with spiral and axial ribs of nearly equal strength, their intersections being nodulose. Sutures deep. The first postnuclear whorl has two well developed spiral ridges and one more just above the suture, which is poorly developed; there are three well developed spirals on the penultimate whorl; the body whorl has seven spirals of which four are above the apertural rim and three smaller ones are on the base. Body whorl with 15-16 axial ribs which cross the spiral ridges except for the lowest 2-3.

Microsculpture of slightly irregular spiral rows of microscopic pustules. Aperture ovate, not entire, with 5 literate "teeth" inside. Outer lip thickened, peristome duplicated.

*Colour* white.

*Variability of paratypes.* The new species shows some variation in size (length 2.1-2.6 mm), but greater variability in the colour. Most often it is white but at times yellowish or with yellow spiral bands and sometimes also spirally

- Fig. 1. *Alvania (Simulamereлина) bermudensis* nov. species; holotype, length 2.4 mm, ventral view, from Bermuda, Gibbons Bay.  
Figs. 2-3. *Alvania (Simulamereлина) bermudensis* nov. species; paratype. 2, protoconch; 3, dorsal view, length 2.3 mm, from Bermuda, Gibbons Bay.  
Fig. 4. *Alvania (Simulamereлина) bermudensis* nov. species; microdetail of body whorl, holotype, from Bermuda, Gibbons Bay.  
Figs. 5-7. *Alvania (Flemellia) guesti* nov. species; holotype. 5, micro-detail of body whorl; 6, ventral view, length 1.76 mm; 7, protoconch, all from Bermuda, Gibbons Bay.  
Fig. 8. *Alvania (Flemellia) guesti* nov. species; paratype, length 1.7 mm, dorsal view, from Bermuda, Gibbons Bay.

arranged spots of deeper yellow to red occur.

*Remarks.* The species (2.1-2.6 mm, when adult) has been called "*Alvania (Alvinia) platycephala* Dautzenberg and Fischer" by Verrill & Bush (1900), who also provided a figure of a Bermudian specimen. According to Waller (1973: 49) "Their identification was apparently based on Dautzenberg and Fischer's illustration, and the specimens themselves were evidently not compared. The species was subsequently reported from ...Walsingham Pond. These specimens ... bear an even closer resemblance to the illustration of Dautzenberg and Fischer than the rather poor line drawing of Verrill and Bush would indicate." Both figures in Verrill & Bush (though imperfect indeed) and Waller (1973: fig. 21) clearly represent the species we have from Gibbons Bay, but are different from *Alvania platycephala* as described by Dautzenberg & Fischer (1896: 63-64, Pl. XIX, fig. 12). That species was described from a depth of 1395 m near the Azores. One of the specimens, with a coarser sculpture (their plate XIX, fig. 13) was considered a variety "*exasperata*".

*Alvania bermudensis* nov. spec. is known only from Bermuda. It differs from *Alvania platycephala* in having more spirals on the protoconch (6 compared to 4), having three instead of four spiral ridges on the first postnuclear whorl and having a sculpture of squares instead of rectangles on the body whorl.

We are of the opinion that the differences between the specimens from the Azores and Bermuda are of specific value, and since no other name seems to be available for the Bermudian species, we describe *A. platycephala* of authors (non Dautzenberg & Fischer, 1896) as new in this paper.

*Etymology.* Named after the island Bermuda.

***Alvania (Flemellia) guesti* nov. spec.**  
figs. 5-8

? *Alvania (Alvinia) pagodula*, Verrill & Bush, 1900: 539.  
- ? *Alvania didyma*, Waller, 1973: 49.

*Type material.* — Holotype in ZMA (Moll. no. 387012) and 165 paratypes from the type

locality (ZMA Moll. no. 387013). Paratypes will be distributed to the Muséum national d'Histoire Naturelle (Paris), United States National Museum (Washington), Los Angeles County Museum, Australian Museum (Sydney), and New Zealand National Museum (Wellington).

*Type locality.* Bermuda, Gibbons Bay, April 1985, leg. A. T. Guest.

*Description of holotype.* Shell length 1.76 mm, width 0.94 mm. Protoconch of 1¼ rounded whorls, dome shaped, slightly intorted, with about six spiral cords, consisting of irregularly arranged and more or less fused granules. The two cords just above the suture are more diffuse, and less pronounced.

Teleoconch of 3¼ whorls, deeply sutured. The first postnuclear whorl and penultimate whorl have two spiral ridges. The body whorl has six spiral ridges of which four are on the base, the lower most weakly developed. About 15 axial ribs cross the two upper spiral ridges on the body whorl. Intersections nodulose. Microsculpture of spirally arranged minute granules (in bands), the intervening areas with irregularly arranged granules. Aperture slightly ovate, entire. Outer lip with a well pronounced varix, peristome duplicated.

*Colour* transparent white.

*Variability of paratypes.* Except for the size, which can vary from 1.4-1.8 mm, this species is very uniform in conchological characteristics.

*Remarks.* This small Rissoid from Bermuda (mean length 1.5 mm, when adult) is probably the one mentioned by Verrill & Bush as "*Alvania (Alvinia) pagodula* Buq., Dautz. and Dolff." They remark that "Although specimens from Bermuda have but four whorls, they so agree in the form and character of the sculpture with descriptions of this species as to leave little doubt as to their identity". We do not accept this view. *Alvania pagodula* (Bucquoy, Dautzenberg & Dolffus, 1884) from the Mediterranean has recently been figured by Ponder (1985: fig. 92A-D). In fact it is very different from the Bermudian species, and it also has a paucispiral protoconch, indicating the absence of a planktotrophic larval development.

Thus it is unlikely that this Mediterranean species occurs in Bermudian waters. Moreover, there are no reliable records of Mediterranean species without a planktotrophic larval stage that occur in Bermuda and/or the Caribbean.

We suppose that Waller (1973) suggested the name *Alvania didyma* (Watson, 1886) for this Bermudian species, which he found at depths exceeding 30 m. But his figure 20 obviously represents the same species as *A. platycephala* auctt.

*Rissoa (Alvania) didyma* Watson, 1886 was described from north of the Culebra Islands in 390 fathoms (= 715 m). Although collected from deep water, according to Moore (1972: 886) "This station was made close to shallow water, and evidently shallow-water sediments had washed down from the bank. At least one other shallow-water species was described from this haul." Indeed, except for *Caecum lineacinctum* De Folin, 1879, discussed in detail by Moore (1972), at least the following species from this locality actually occur in shallow water: *Odostomia (Turbonilla) phrikalea* Watson, 1886 (= *Turbonilla pupoides* (d'Orbigny, 1842)); *Schismope tabulata* Watson, 1886 (= *Scissurella tabulata*); *Iphitus tuberculatus* Watson, 1886 (= *Sansonia tuberculata*); and *Rissoa (Alvania) didyma* Watson, 1886 (= *Alvania didyma*). The latter is also known from shallow bays on St. Maarten, Netherlands Antilles. Comparisons of the smaller Bermudian Rissoid with *Alvania didyma* as figured by Watson, and specimens from St. Maarten reveals that they are different in shell-characters.

*Alvania guesti* nov. spec. differs conspicuously in being smaller, with fewer spiral ribs, and by its slightly intorted or tilted protoconch. It differs also from the sympatric *Alvania (Simulamerelina) bermudensis* nov. spec. by being smaller, having spirals of granules (instead of smooth spirals) and a more pronounced duplicated peristome.

*Etymology.* Named after Mr. Arthur T. Guest, malacologist on Bermuda.

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## REFERENCES

- BUCQUOY, E., P. DAUTZENBERG & G. DOLLFUS, 1882-1886. Les mollusques marins du Roussillon. Tome I. Gasteropodes: 1-565. (J. B. Baillière & fils, Paris).
- DAUTZENBERG, P. & H. FISCHER, 1896. Campagnes scientifiques de S.A. le Prince Albert Ier de Monaco. Dragages effectués par l'Hirondelle et par la Princesse Alice, 1888-1895. Mém. Soc. zool. Fr. 9: 1-104.
- MOOLENBEEK, R. G. & M. J. FABER, 1987a. The Macaronesian species of the genus *Manzonina* (Gastropoda: Rissoidae), part I. *Kreukel* 23: 1-16.
- & —, 1987b. The Macaronesian species of the genus *Manzonina* (Gasteropoda: Rissoidae), part II. *Kreukel* 23: 23-31.
- MOORE, D. R., 1972. Ecological and systematic notes on Caecidae from St. Croix, U.S. Virgin Islands. *Bull. mar. Sci.* 22: 881-899.
- PONDER, W. F., 1985. A review of the genera of the Rissoidae (Mollusca: Mesogastropoda: Rissoidea). *Rec. Aust. Mus., suppl.* 4: 1-221.
- THORSON, G., 1950. Reproductive and larval ecology of marine bottom invertebrates. *Biol. Rev.* 25: 1-45.
- VERRILL, A. E. & K. J. BUSH, 1900. Additions to the marine Mollusca of the Bermudas. *Trans. Conn. Acad. Arts Sci.* 10: 513-544.
- WALLER, T. R., 1973. The habits and habitats of some Bermudian marine mollusks. *Nautilus* 87: 31-52.
- WATSON, R. B., 1886. Report on the Scaphopoda and Gasteropoda collected by H.M.S. Challenger during the years 1873-76. *Rep. scient. Results Voy. Challenger (Zoology)* 42: 1-756.

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