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NEW SPECIES OF RISSOIDAE FROM THE CAPE VERDE ISLANDS (MOLLUSCA: GASTROPODA) Part 1

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SUMMARY

Sediment samples collected at the Cape Verde Islands contained many interesting micromolluscs. Amongst them, four new species of the family Rissoidae (*Alvania peli*, *A. nicolauensis*, *A. stocki* and *A. planciusi*).

INTRODUCTION

During a cruise of the R.V. "Plancius" in 1986, sediment samples were collected at the Cape Verde Islands. These samples contained many micromolluscs amongst them several species belonging to the family Rissoidae. The second author collected sediment samples by dredging and SCUBA diving in May 1987 on five Cape Verdian Islands.

In an earlier draft of this publication, the first author intended to describe two new rissoids from this archipelago but in the meantime these taxa were described by Rolán (1987) (as *Manzonia caboverdensis* and *M. xicoi*) together with five other new species. According to Rolán (1987) all these new species belong to the genus *Manzonia*.

The marine molluscan fauna of the Cape Verde Islands is still poorly known. Von Cosel (1982) listed

non critically all molluscs known from the archipelago. In the subfamily Rissoinae he mentioned *Alvania calathus* (Forbes & Hanley, 1850), *?Alvania mariae* d'Orbigny, 1852 and *Putilla albugo* (Watson, 1873). These species were not found in our samples.

A fourth species was described from the Cape Verde Islands as *Rissoa milleri* De Folin, 1869. The poor original drawing and the fact that the type specimen(s) have not yet been traced (not in the Museum National d'Histoire Naturelle, Paris = MNHN) makes identification of this taxon dubious. Dautzenberg & Fischer (1906) mentioned another three rissoids from the Cape Verde Islands (*Rissoa fayalensis* Watson, *Alvania subcalathus* Monterosato ms, and *Alvania geryonius* Brusina) but these identifications need confirmation and are probably erroneous.

Several specimens found in the present material

appear to belong to new species. We describe four of these herein, viz. of which we have good specimens, enabling a study of the intraspecific variation.

***Alvania peli* n.sp.**
(Figs. 1, 5-6)

Type material

Holotype in ZMA (Moll. no. 3.88.021) and 71 paratypes (ZMA Moll. 3.88.022).

Type locality

Cape Verde Islands, São Nicolau, north west of Tarrafal, "Plancius" Sta. 186/06, 14 January 1986, leg. J. Vermeulen & J.H. Stock.

Other material studied

Cape Verde Islands, Island Sal, Praia do Cascalho, 19 January 1986, leg. J.H. Stock (18 specimens); Isl. Sal, Mordeira (12 spec.), Palhona (5 spec.), Monte Leste (4 spec.), Palmeira (2 spec.); Isl. Brava, Furna (141 spec.); Pedrinha (40 spec.); Isl. Santiago, Tarrafal (30 spec.); Isl. São Vicente, Porto Mindelo (6 spec.); Isl. Boavista, Bahia Teodora (6 spec.), Sal Rei (16 spec.). All May 1987, leg. E. Rolán.

Description of holotype

Shell length 1.8 mm, width 1.0 mm.

Protoconch of about one convex whorl. Initial part (apex) of protoconch with a sculpture of fine, irregular pustules gradually forming 9-10 zig-zag spirals. Suture deep.

Teleoconch of 31/2 slightly convex whorls, strongly sculptured with spiral and partly axial ribs, their intersections being nodulose.

First post nuclear whorl has two spiral ridges, the intervening area with 5-8 spiral lines (riblets).

Penultimate whorl with 3-4 spiral ridges crossed by axial prosocline ribs, nodulose on intersections.

Bodywhorl with four strong spiral ridges above the aperture, the first 3 abapical spirals crossed by axial ribs. The 4th ridge forms the periphery, the 5th reaches the top of the aperture (and forms the suture) and there are another six smooth spirals towards the base. In between two spiral ribs are very fine spirals. For example, between the 4th and 5th abapical ridge about 20 fine spiral lines.

Aperture ovate, entire, varix on outer lip, with closely gathered axial striae.

Colour. Protoconch and first 2 post nuclear whorls light brown, gradually growing white towards the bodywhorl. Sutures on bodywhorl and penultimate whorl dark brown, which is caused by a dark brown spiral ridge (being the 5th abapical on the body whorl). On the outer lip is a brownish spot on the upper part of the varix and the last part of the 6th abapical ridge is also brown.

Etymology

Named after Peter van Pel, honorary associate of the department of Malacology (Zoölogisch Museum Amsterdam). Without his assistance, this study would not have been finished yet.

Remarks

Alvania peli n.sp. is compared to *A. rudis* (Philippi, 1844) and *A. isolata* (Laseron, 1956). *A. rudis* differs from the new species in having a completely smooth protoconch and in being more slender (ratio length to width = 2.2 : 1). *A. isolata*, a species from the Indian Ocean, is different by having a protoconch with about 5 strong spiral ridges (see Ponder, 1985, fig. 93A).

Living animals of *A. peli* n.sp. from Sal, Mordeira Bay were completely white with a yellowish translucent operculum.

***Alvania nicolauensis* n.sp.**
(Figs. 2, 7)

Type material

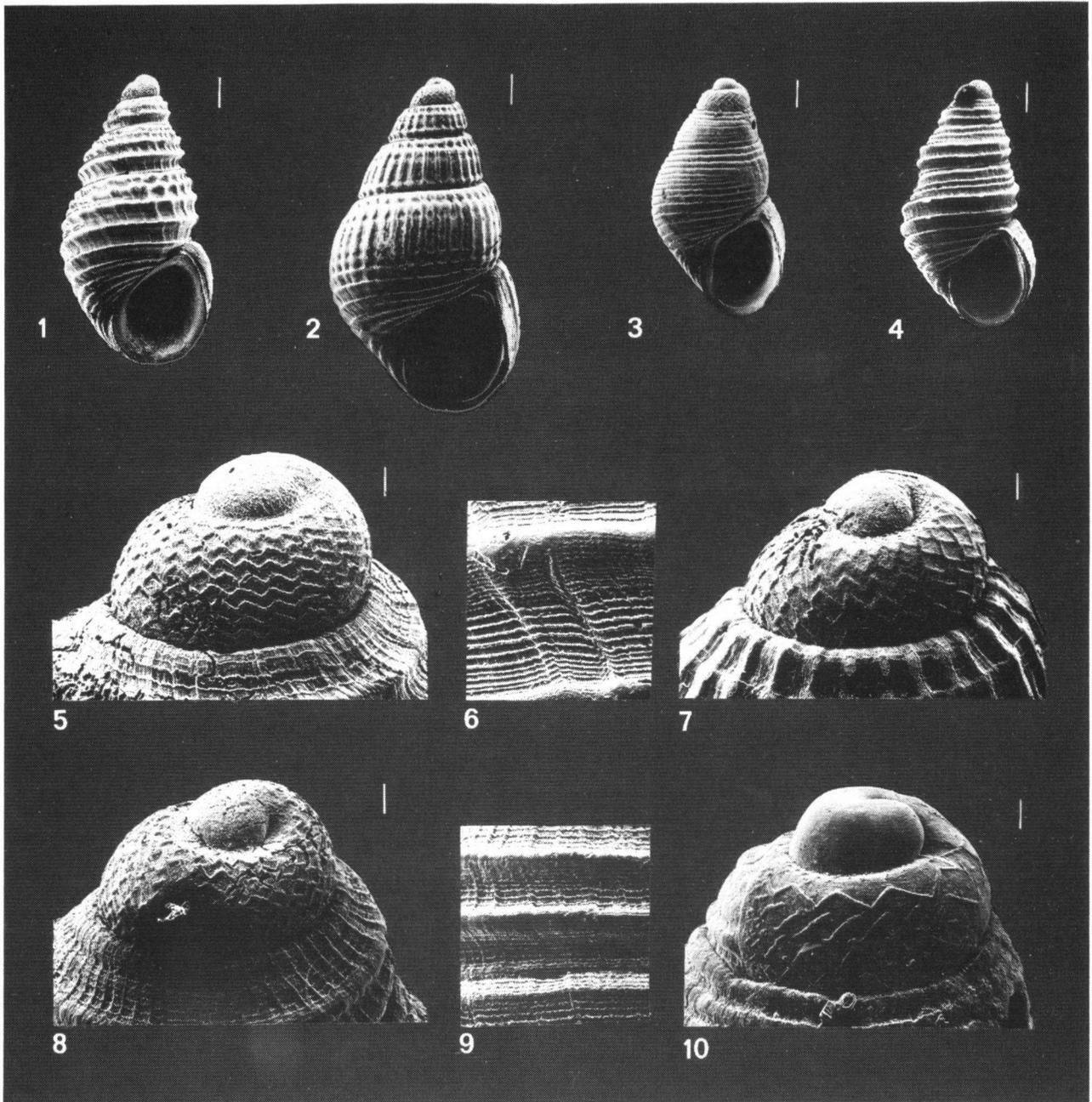
Holotype in ZMA (Moll. no. 3.88.023) and 7 paratypes (ZMA Moll. no. 3.88.024).

Type locality.

Cape Verde Islands, São Nicolau, north west of Tarrafal, "Plancius" Sta. 186/06, 14 January 1986. leg. J. Vermeulen & J.H. Stock.

Other material studied

Cape Verde Islands, Island Santiago, Tarrafal (1 spec.); Isl. Boavista, Bahia Teodora (23 spec.), Sal Rei (1 spec.); Isl. Sal, Mordeira (17 spec.), Palhona (3 spec.), Monte



Figs. 1, 5, 6. *Alvania peli* n.sp., holotype, Cape Verde Islands, São Nicolau; 1, apertural view (scale bar 204 μm); 5, protoconch (scale bar 32.3 μm); 6 microsculpture bodywhorl (scale bar 20.4 μm).

Figs. 2, 7. *Alvania nicolauensis* n.sp., holotype, Cape Verde Islands, São Nicolau; 2, apertural view (scale bar 159 μm); 7, protoconch (scale bar 32.2 μm).

Figs. 3, 10. *Alvania planciusi* n.sp., holotype, Cape Verde Islands, Island Sal; 3, apertural view (scale bar 204 μm); 10, protoconch (scale bar 41.5 μm).

Figs. 4, 8, 9. *Alvania stocki* n.sp., holotype, Cape Verde Islands, Island Sal; 4, apertural view (scale bar 208 μm); 8, protoconch (scale bar 34.5 μm); 9, microsculpture bodywhorl (scale bar 41.5 μm).

Leste (4 spec.), Palmeira (16 spec.), all May 1987, leg. E Rolán.

Description of holotype

Shell length 1.66 mm, width 0.96 mm. Protoconch a little more than one convex whorl. Initial part with a rough sculpture of small pustules separated clearly from the 2nd part of the protoconch which has a sculpture of 6 zig-zag spiral lines. Between those spiral lines is a microsculpture of fine granules. Teleoconch of 3 1/2 convex whorls, strongly sculptured with axial ribs and spiral ridges.

First postnuclear whorl with about 20 axial ribs, crossed by three spirals. One spiral just below the suture, the 2nd at about 2/3 of the height of the whorl and the 3rd just above the lower suture. On intersections are small nodules. Penultimate whorl with more prominent axial ribs and nearly invisible spirals forming concave grooves below upper suture and one above the lower suture. This give the impression of a deep canaliculated suture.

Body whorl with about 25 axial ribs, which stop just below the periphery (corresponding with the top of the aperture), and are followed by 6-7 spiral riblets. A very narrow umbilical chink is situated towards the aperture, which is entire. Outer lip with varix and with 6-7 denticles inside.

Colour

Protoconch milky-white. Teleoconch semitransparent, white with reddish-brown dots, which on the bodywhorl form irregular proso- and/or orthocone axial bands. Aperture shining, translucent to milky white.

Etymology

Named after the island of São Nicolau.

Remarks

This new species shows some resemblance to *Alvania imperspicua* (Pallary, 1920) sensu Gofas & Warén, 1982. It differs by having a protoconch with only six zig-zag spiral lines, whereas *A. imperspicua* has about 12 lines. Also *A. nicolauensis* n.sp. has less pronounced spiral ridges on the teleoconch, and lirae (denticles) on the throat (inner side outer lip). *A.*

zylensis Gofas & Warén, 1982 seems to be the most closely related species. However, *A. nicolauensis* n.sp. never reaches lengths around 2.0 mm like *A. zylensis*, has less convex whorls and a brown colour pattern on the post nuclear whorls. *A. zylensis* is always white to grayish.

Living animals of *A. nicolauensis* n.sp. were studied on Sal, Mordeira Bay. The body is light translucent with yellow spots around the eyes. The transparent flattened tentacles have a yellow line in the middle. Sides of the body with black spots, which become smaller towards the operculum, which is light and translucent.

Alvania stocki n.sp.

(Figs. 4, 8-9)

Type material

Holotype in ZMA (Moll. 3.88.027) and 35 paratypes (ZMA Moll. 3.88.028 and coll. Rolán).

Type locality

Cape Verde Islands, Island Sal, Praia do Cascalho, 19 January 1986, leg. J.H. Stock. The paratypes are from Isl. Sal, Mordeira (1 spec.), Regona (25 spec.), Palhona (1 spec.), Monte Leste (2 spec.), and Palmeira (6 spec.), May 1987, leg. E. Rolán.

Other material studied

Cape Verde Islands, Isl. Santiago, Tarrafal (7 spec.); Isl. Boavista, Bahia Teodora (26 spec.), all May 1987, leg. E. Rolán.

DESCRIPTION OF HOLOTYPE

Shell length 1.60 mm, width 0.90 mm. Protoconch one whorl with about 8 zig-zag spiral lines.

Teleoconch of 3 1/2 whorls, sculptured with strong spiral ridges and grooves. First postnuclear whorl with a small spiral ridge just below suture and two strong spiral ridges. Microsculpture of very fine spirals (about 8-12 between two spirals, Fig. 9) and many fine prosocone axial riblets crossing the spirals.

Second postnuclear whorl (= 2 pnw) with 2 minor spiral ridges below suture, followed by two prominent ridges and again a small one just above or at the suture. Microsculpture is like the first pnw but less

ture. Microsculpture is like the first pnw but less dense.

Body whorl with three minor spirals, then two strong spiral ridges (of which the abapical one forms the periphery) and followed by 6-7 minor spirals. Same microsculpture as on the 2nd pnw.

Aperture entire, ovate and with 4-5 minor denticles on inside of outer lip. Varix strong, and enlarged a little as a very thin outer lip (peristome). Small umbilical chink.

Colour

Protoconch vitreous to white. Teleoconch transparent with brown dashes on the spiral ridges. These brown dashes form a more or less irregular axial pattern (about 6-7 rows on body whorl).

Etymology

Named after Prof. Dr. J.H. Stock, who collected part of the material and added so many interesting molluscs, from all over the world, to the collection of the Zoölogisch Museum Amsterdam.

Remarks

There is no European rissoid that shows any resemblance in conchological characters with this new species. Only some West African species in the subgenus *Lirocingula* show affinities, in particular *Cingula* (*Lirocingula*) *aequa* (Smith) from St. Helena. However, this taxon has a completely different protoconch sculpture (strong spiral ridges instead of zig-zag pattern) and lacks axial microsculpture. *A. stocki* n.sp. has the same kind of colour pattern (reddish-brown dots on spiral ridges, falling under each other and forming longitudinal series) as *Cingula perfecta* (Smith) but the latter differs in having only 6 spiral ridges on the body whorl and only 2 1/2 post-nuclear whorls. *Cingula varicifera* (Smith), with its varix at a short distance from the extremely thin edge of the labrum, shares this characteristic with the new species but differs by its spirally ridged protoconch (vide Ponder, 1985: figs. 107 C-D).

Alvania (*Crisilla*) *planciusi* n.sp. (Figs. 3, 10)

Type material

Holotype in ZMA (Moll. no. 3.88.025) and 30 paratypes (ZMA Moll. 3.88.026 and coll. E. Rolán).

Type locality

Cape Verde Islands, Island Sal, Praia do Cascalho, 19 January 1986, leg. J.H. Stock. Six paratypes are from the type locality, the others from Sal, Mordeira (2 spec.), Regona (10 spec.), Palhona (2 spec.), Monte Leste (3 spec.), and Palmeira (7 spec.). All paratypes collected in May, 1987, leg. E. Rolán.

Other material studied

Cape Verde Islands, Isl. Brava, Furna (16 spec.), Pedrinha (2 spec.); Isl. Santiago, Tarrafal (1 spec.); Isl. Boavista, Bahia Teodora (26 spec.), all May 1987, leg. E. Rolán.

DESCRIPTION OF HOLOTYPE

Shell length 1.55 mm, width 0.98 mm. Protoconch 1 whorl with about 4 zig-zag spiral lines, its initial part smooth. The first or second abapical spiral loses the zig-zag pattern towards the teleoconch and only opisthocline sticks remain.

Teleoconch of 2 1/2 convex whorls, sculptured with spiral ridges and grooves. First postnuclear whorl starts with 4 strong spiral ridges and towards the 2nd postnuclear whorl the ridges increase to 7. Ridges smooth, twice as broad as the grooves, the latter with a rough sculpture.

Body whorl with about 15 spiral ridges (bands) of which 8-9 are situated above the posterior tip of aperture.

Aperture entire, and ovate with 6-7 denticles on inside of outer lip.

Colour

Protoconch vitreous; teleoconch cream transparent with brown spots on 2 spiral bands above the periphery and on 3 spiral bands just below the periphery.

Etymology

Named after the R.V. Plancius, during a cruise of which the material was collected.

Remarks

Alvania planciusi n.sp. differs from *A. semistriata* (Montagu, 1808) by having a different type of protoconch (a zig-zag pattern whereas *A. semistriata* has spiral lines with granules in between, see Ponder, 1985, fig. 96C). Also *A. semistriata* has more spiral riblets on the bodywhorls (20-25). *A. callosa* (Manzoni, 1868) differs by having a protoconch with a sculpture of 7 spiral rows of large granules and has the outstanding swelling near the columella.

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