

Remarks on the non-marine molluscan fauna of the Azores. 1-2.

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Punctum azoricum spec. nov. is described from the Azorean Island of São Miguel. This species was probably previously reported as *Punctum minutissimum* (Lea). *Deroceras agreste* (L.) is removed from the Azorean list. Attention is drawn to the possible occurrence of aphallic specimens in *Deroceras panormitanum* (Lesson & Pollonera).

Key words: Gastropoda, Pulmonata, Punctidae, *Punctum*, Agriolimacidae, *Deroceras*, taxonomy, aphally, Azores.

GENERAL INTRODUCTION

In July 1987 Mr. Jan Wieringa, Wageningen, collected land and freshwater Mollusca on the Azorean Island of São Miguel. This collection comprises about 35 species from 29 localities, both dry and in alcohol.

Despite the monograph by Backhuys (1975), the non-marine molluscs from the Azores are still insufficiently known. The Wieringa collection contains a number of additions and is the source of critical remarks regarding this work; I intend to publish the data in a series of notes. A complete list of the species and localities will be available upon request.

I would like to express my thanks to the collector for the generous gift of this interesting material.

Abbreviations used: FMNH, Field Museum of Natural History, Chicago; RD, private collection of Th.E.J. Ripken, Delft; RMNH, Rijksmuseum van Natuurlijke Historie, Leiden; WW, author's collection, Wageningen; ZMA, Zoölogisch Museum, Amsterdam.

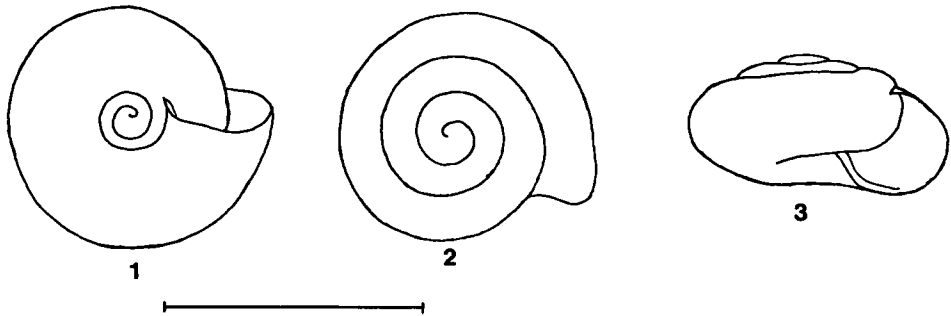
1. A NEW PUNCTUM (PULMONATA, PUNCTIDAE) FROM THE AZORES

The Wieringa collection contains three samples of a *Punctum* species. It is probably what was referred to by Backhuys (1975) as *P. minutissimum* (Lea, 1848). Comparison with specimens of this species kindly provided by Dr. Alan Solem, Field Museum of Natural History, Chicago, as well as with the description by Pilsbry (1948) shows that the present material is not *P. minutissimum*.

***Punctum azoricum* nov. spec.**

(?) *Punctum minutissimum* (Lea); Backhuys, 1975: 116, fig. 21.

Material. — Holotype: RMNH 56027. Azores, São Miguel, 1 km SE. of Agua de Pau, N. of Coloura; slope with herbacious vegetation and scattered trees; UTM PG3175, alt. 80 m. Paratypes: Type locality (RMNH 56028/10, WW 5670/10). São Miguel, 3 km NE. of Lagoa; *Pittosporum-Laurus* forest; UTM PG2780, alt. 200 m (RMNH 56029/ca. 50, alc. 9228/6, ZMA/10, FMNH/10, RD/10, WW 5705/ca. 50).



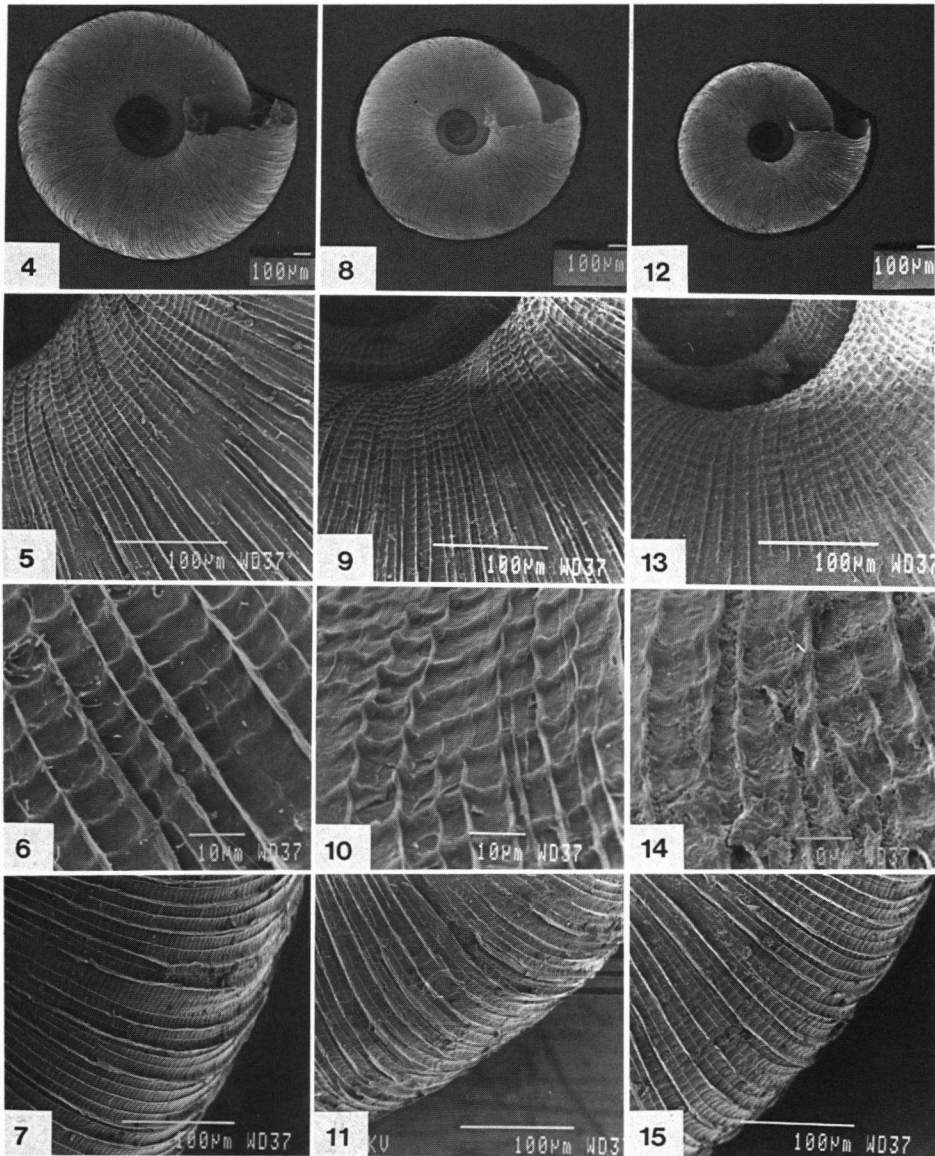
Figs. 1-3. *Punctum azoricum* nov. spec. Outlines of shell of holotype. Scale 1 mm.

São Miguel, 1 km SE. of Feteiras, 10 km NW. of Ponta Delgada; *Pittosporum* forest; UTM PG0783, alt. 250 m (WW 5648/2).

Description (figs. 1-3, 12-17). — Shell very small, brittle, whitish, somewhat translucent. Diameter about 1 mm with about three whorls; an exceptionally large specimen measured 1.12 mm. For shell measurements see table 1. Umbilicus perfectly round, shallow. Spire low, height/width ratio 0.56-0.61. Sculpture consisting of sharp major ribs with 1-3 second order ribs between these, crossed by relatively widely spaced spiral ribs on the outer edge of the ventral side and upper side of post-embryonic

Specimen	Maximum diameter	Height	Umbilical width	H/D	Number of whorls
Água de Pau	0.98	0.57	0.25	0.58	3 ¹ / ₅
"	1.00	0.58	0.28	0.58	3 ¹ / ₅
"	1.12	0.67	0.28	0.60	3 ¹ / ₃
"	0.98	0.57	0.27	0.58	3 ¹ / ₄
"	1.00	0.58	0.23	0.58	3
"	1.00	0.60	0.22	0.60	3+
"	1.06	0.58	0.28	0.55	3 ¹ / ₅
"	1.02	0.60	0.27	0.59	3
"	1.03	0.60	0.29	0.58	3+
"	1.00	0.60	0.27	0.57	3
"	1.00	0.57	0.27	0.61	3-
"	1.06	0.65	0.28	0.60	3+
"	1.03	0.61	0.28	0.59	3+
holotype	1.02	0.60	0.25	0.57	3+
type locality	1.00	0.60	0.25	0.56	3
"	0.98	0.55	0.25	0.56	3-
"	0.98	0.56	0.23	0.57	3+
"	0.90	0.52	0.23	0.57	2 ³ / ₄

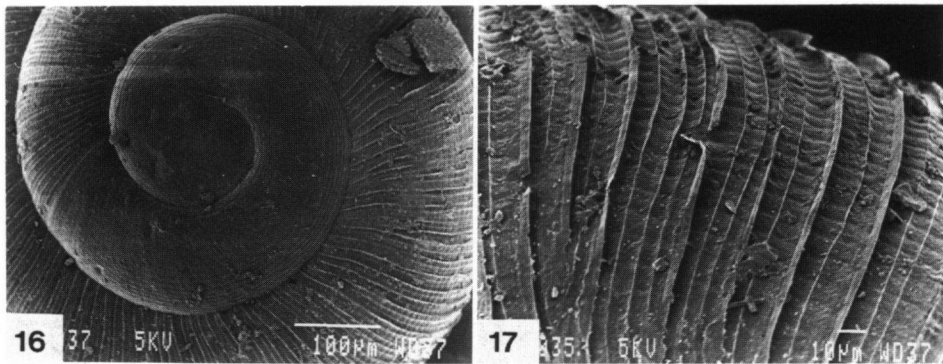
Table 1. Measurements of shells of *Punctum azoricum* nov. spec. in mm. Whorl counting according to Gittenberger et al., 1984, fig. 4.



Figs. 4-7. *Punctum pygmaeum* (Draparnaud). France, Gémenos (Bouches du Rhône), E. Gittenberger leg. (RMNH). 4, ventral side of shell; 5, umbilical region; 6, detail of fig. 5; 7, outer edge of ventral side of body whorl.

Figs. 8-11. *P. minutissimum* (Lea). Canada, Ontario, Tecanagami forest, J. Oughton leg. (RMNH, ex FMNH). Figs. 8-11 cf. figs. 4-7.

Figs. 12-15. *P. azoricum* nov. spec., paratype from type locality (RMNH). Figs. 12-15 cf. figs. 4-7. (S.E.M. photographs by J.H.W. Krom, RMNH).



Figs. 16-17. *Punctum azoricum* nov. spec., paratype from type locality (RMNH). 16, apical whorls; 17, detail of sculpture on upper side of body whorl, $\frac{1}{4}$ whorl from aperture (S.E.M. photographs by J.H.W. Krom, RMNH).

whorls. Protoconch without axial sculpture, only with fine spiral ribs, especially above the suture. On the ventral side around the umbilicus about 15 rows of very prominent, blunt spiral ribs crossed by axial ribs, followed by an area with only axial sculpture towards the outer edge of the body whorl.

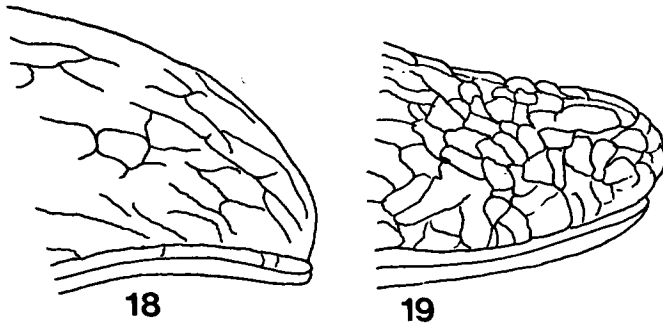
P. azoricum differs from *P. pygmaeum* (Draparnaud, 1801) (figs. 4-7) in being much smaller with a similar number of whorls (*P. pygmaeum* measures 1.3-1.5 mm with about $3\frac{1}{2}$ whorls). Moreover, it has a lower spire, coarser spiral ribs around the umbilicus, much more widely spaced spirals on the body whorl (clearly visible at a magnification of $40\times$), and a whitish instead of brown shell. Shells of *P. minutissimum* (figs. 8-11) are generally larger (1.1-1.51 mm, fide Pilsbry, 1948: 644), have more close-set, sharper spirals around the umbilicus, a more raised spire, more inflated whorls and a darker colour. The spiral sculpture on the body whorl is more dense than in *P. azoricum*, but more widely spaced than in *P. pygmaeum* (cf. Solem, 1977: 151, fig. 5).

Backhuys probably first reported the species from the Azorean islands of São Miguel, São Jorge, Faial, Pico and Flores as *P. minutissimum*, and considered it the only autochthonous Nearctic element of the Azorean malacofauna. Unfortunately this material was not available for study in the RMNH.

2. NOTES ON DEROCERAS (PULMONATA: AGRILIMACIDAE) FROM THE AZORES

Deroceras agreste (L., 1758). — This species was reported by Backhuys (1975: 177) from four Azorean islands. He found the species in the surroundings of human settlements, which is suspect, because the species is typically anthropophobic, in contrast to the allied species, *D. reticulatum* (Müller, 1774). Examination of the material mentioned by Backhuys, now in the RMNH, revealed that all specimens are either too young for a reliable identification, or clearly belong to juvenile *D. reticulatum*.

Specimens of *D. reticulatum* without external pigmentation seem to be relatively common on the Azores, as is also evident from the Wieringa collection.



Figs. 18-19. Tails of *Deroceras* species. 18, *D. laeve* (Müller); 19, *D. panormitanum* (Lessona & Pollonera).

For the time being there appear to be no grounds for considering *D. agreste* a member of the Azorean malacofauna.

Deroceras panormitanum (Lessona & Pollonera, 1882) and *D. laeve* (Müller, 1774). — Backhuys (1975: 184) gives only one record of *D. panormitanum* from São Miguel s.n. *D. caruanae* (Pollonera). The Wieringa collection shows that the species is not uncommon. It was found at five localities scattered over the island, sometimes accompanied by *D. reticulatum* and *D. laeve*. *D. panormitanum* can be externally distinguished from the latter species by its rounded tail, which usually extends beyond the foot-fringe (figs. 18-19). Otherwise these species may be remarkably similar, especially as genital characters are often useless because of the frequent occurrence of aphyallic specimens in *D. laeve*. I possess one aphyallic, somewhat distorted, specimen of which the tail strongly resembles that of *D. panormitanum*. With this note I hope to stimulate more thorough observations on aphyallic *Deroceras* specimens.

In contrast to the observations of Backhuys (1975: 183), both aphyallic and ephyallic specimens of *D. laeve* occur on the Azores. Ephyallic specimens were found both in the material of Backhuys and in the Wieringa collection.

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