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A dwarf on the rocks: Ripkeniella petrophila gen. et spec. nov. (Gastropoda Pulmonata: Hygromiidae), a tiny petrophilous snail from La Gomera, Canary Islands

Notes on the malacofauna of the Canary Islands, No. 37[1]

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An enigmatic, very small, hygromiid, petrophilous snail from La Gomera, Canary Islands, is described as new to science. Specimens with full-grown genitalia have not yet been found. Therefore, the generic affinities of the new taxon remain unclear.

Key words: Gastropoda, Pulmonata, Hygromiidae, *Ripkeniella* gen.nov., taxonomy, Canary Islands.

INTRODUCTION

The mountains and sea-facing cliffs of the northern coast of La Gomera have not been thoroughly studied yet. Recent investigations of some of these wind-exposed cliffs brought to light a number of new species of Buliminidae, some of which have been described by Alonso et al. (1995). We report here on another discovery made during these campaigns: a very small hygromiid snail with a tiny shell, smaller than that of any other hygromiid known from the Canary Islands.

The following abbreviations are used for collections: AIT, M.R. Alonso & M. Ibañez, Tenerife; CHB, R. Hutterer, Bonn; CGH, K. Groh, Hackenheim; CNHN, Chicago National History Museum; MCNT, Museo de Ciencias Naturales, Tenerife; MNHN, Muséum National d'Histoire Naturelle, Paris; NMB, Naturhistorisches Museum, Bern; NNM, Nationaal Natuurhistorisch Museum, Leiden; SMF, Senckenberg Museum, Frankfurt am Main; ZMZ, Zoologisches Museum, Zürich.

DESCRIPTION AND DISCUSSION

Ripkeniella gen. nov.

Type species. — *Ripkeniella petrophila* spec. nov.

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Etymology. — Gender feminine. The genus is named for our friend and colleague Theo E. J. Ripken (Delft) in recognition of his contributions to the malacology of the Canary Islands.

Diagnosis. — As for the type species.

Ripkeniella petrophila spec. nov. (figs. 1-6)

Material studied. — Spain, Canary Islands, La Gomera. Mtña Beguira, 500 m alt. (UTM BS7320), 3.ii.1994, R. Hutterer & M. Ibañez leg. (78 shells: holotype NNM 57268; paratypes NNM 57269 /10; AIT/20; MCNT/10; SMF/10; ZMZ/2; NMB/2; MNHN/2; CNHM/2; CHG/10; CHB/9. 30 specimens in alcohol: NNM/10; AIT/10; SMF/5; CGH/5. Mtña Tejeleche, northern slope, 480 m alt. (UTM BS7116), 14.iv.1993, R. Hutterer leg. (32 shells, CHB), 2.iii.1994, R. Hutterer & M. Ibañez leg. (49 shells: AIT/10; CHB/39).

Diagnosis. — A very small hygromiid snail. Shell with a low subconical spire and an angular periphery, densely covered by radial riblets and without a distinct periostracal microsculpture.

Soft parts of the animal. — Sole and lower part of the body white, dorsal parts of

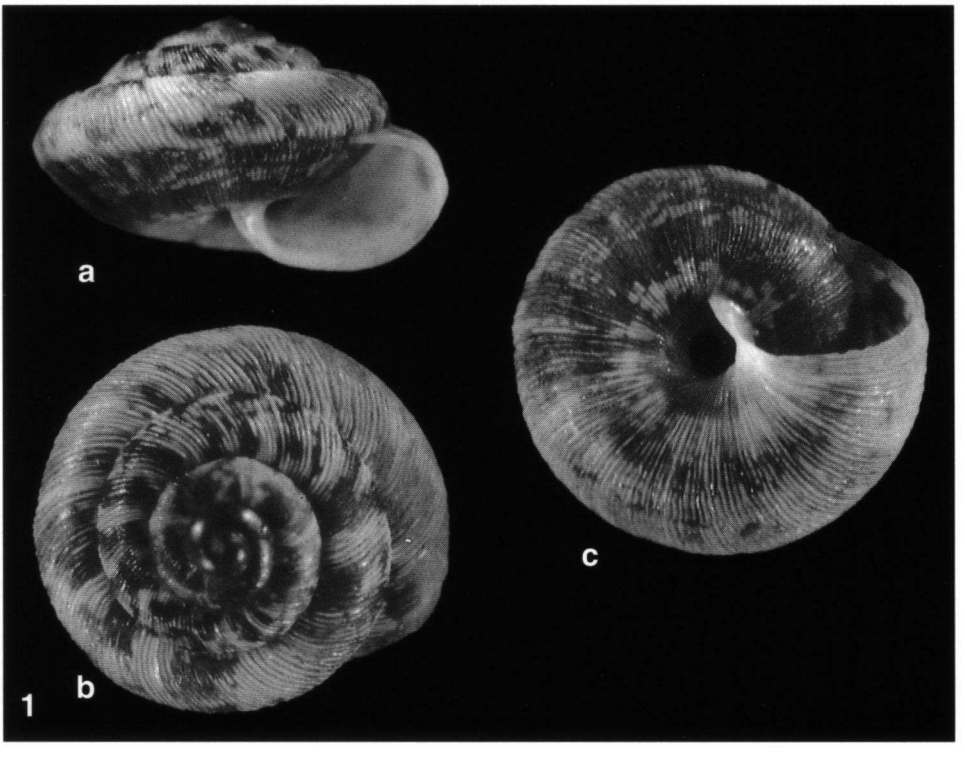


Fig. 1. *Ripkeniella petrophila* spec. nov., holotype (NNM 57268). Photographs: A. 't Hooft.

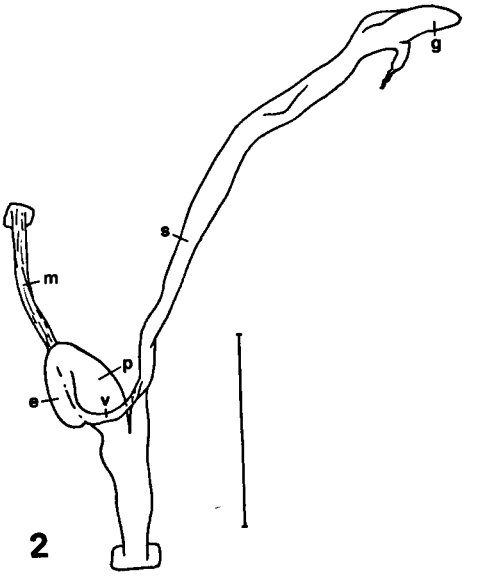


Fig. 2. *Ripkeniella petrophila* spec. nov., genitalia of a conchologically full-grown specimen. Abbreviations: e, epiphallus; g, glandula albuminifera; m, penis retractor muscle; p, penis; s, spermoviductus with bursa copulatrix united; v, vas deferens. Scale 1 mm.

body and head black. Mantle with very few black, elongated dots or irregular lines. Length of sole varying from 2.2 to 3.4 mm in six subadult specimens after fixation in alcohol.

The genitalia proved to be equally immature in all specimens studied anatomically (fig. 2). Dissection proved to be difficult and the results are unsatisfactory. The penis is somewhat longer than the epiphallus, which is sharply differentiated from the vas deferens, without a flagellum, which might develop from the blunt end, however. There is no trace (?yet) of dart sac(s) or mucous gland(s) in the female part of the genitalia. The bursa copulatrix has a long pedunculus; a diverticulum was not observed.

Radula and jaw. — The radula (figs. 3, 4) was studied in two specimens. The central tooth has a main cusp with a prominent denticle at each side. Next to it, there are 16-17 teeth in a halfrow. In the margin of the radula there is a gradual change from laterals with two cusps to marginals: in only the most marginal 2-4 teeth the side cusp splits up. There may be a minute, extra, inner denticle on the main cusp of some of the laterals. There is an odontognathous jaw (figs. 5, 6) with c. 12 irregular, relatively broad ribs.

Shell. — The shell (fig. 1) has a low-conical spire, and an angular periphery with a flattened zone just below it. The aperture is clearly broader than high and broadly interrupted by the penultimate whorl. Apart from the c. 2 protoconch whorls, the shell is densely covered with radial riblets. Additionally, there is a vague microsculpture of spiral lines. We could not find periostracal sculptural elements, but their occurrence on well-preserved, in particular on juvenile specimens, cannot be excluded. On wet

specimens shortly before drying completely, and under favourable light conditions, a punctation may be observed on the shell surface, recalling the pattern shown by hair scars in various hygromiids.

Shell measurements (n = 20), with extremes and mean values: width 2.8-3.0-3.5 mm; height 1.7-2.0-2.5 mm. Number of whorls: 3½-4¼.

Ecological data. — The snails were found in a peculiar microhabitat, i.e. steep cliffs of volcanic rock, exposed to wind and fog emerging from the Atlantic Ocean. The animals were often hidden in small cavities at the rock surface and less frequently in rock fissures. A few lichens form the only vegetation on these rocks. Many fresh shells (c. 50%) proved to be filled with pupae of Diptera in the last whorl; two flies could be raised in the laboratory, both representing yet unidentified species of Sarcophagidae.

The snails collected alive, February 3, 1994, looked full-grown conchologically, but had very immature genitalia. Maybe the animals are sexually active later on in spring and die after reproduction.

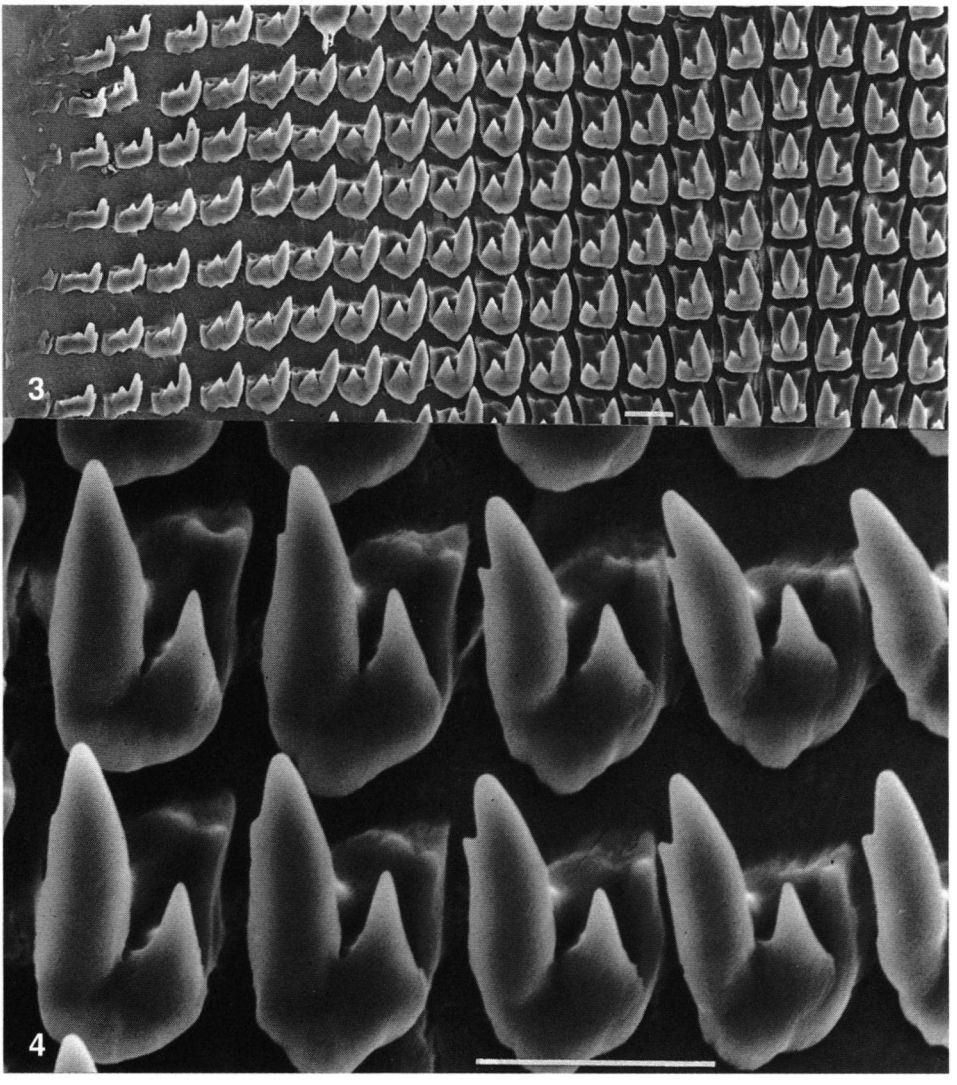
Distribution. — The species is known so far from only two localities in NW. Gomera.

Discussion. — *Ripkeniella petrophila* is the smallest hygromiid snail in the Canary Islands. Its shell is rather similar to that of some species of *Xerotricha* Monterosato, 1892, but differs in that it has no hairs, prominent radial riblets, and a relatively thick wall. It also differs in its habitat. According to the volume (table 1), *R. petrophila* is 14 times smaller than *X. orbignyi* (Webb & Berthelot, 1839) from Tenerife (Alonso et al., 1990) and Gran Canaria (personal observation), seven times smaller than *X. adoptata* (Mousson, 1872) from La Gomera and still four times smaller than *X. pavida* (Mousson, 1872) from La Palma and *X. nubivaga* (Mabille, 1882) from Tenerife, both of which have very small and delicate shells (Gittenberger et al., 1989). *X. adoptata*, currently synonymized with *X. orbignyi*, is recognized here as a separate species, with constantly smaller dimensions.

Species	Island	N	shell height	width	volume
Ripkeniella petrophila	La Gomera	20	2.0	3.0	9.4
Xerotricha pavida	La Palma	5	2.8	5.0	36.6
Xerotricha nubivaga	Tenerife	3	2.8	5.2	39.6
Xerotricha adoptata	La Gomera	10	4.2	5.4	64.1
Xerotricha conspurcata	Gran Canaria	10	4.5	6.9	112.2
Xerotricha orbignyi	Tenerife	10	5.5	6.8	133.2

Table 1. Shell dimensions (in mm) and volume (in mm³) of *Ripkeniella* and some *Xerotricha* species from the Canary Islands (means, based on material in the collections AIT, NNM, and CHB). The volume is calculated as for an ellipsoid.

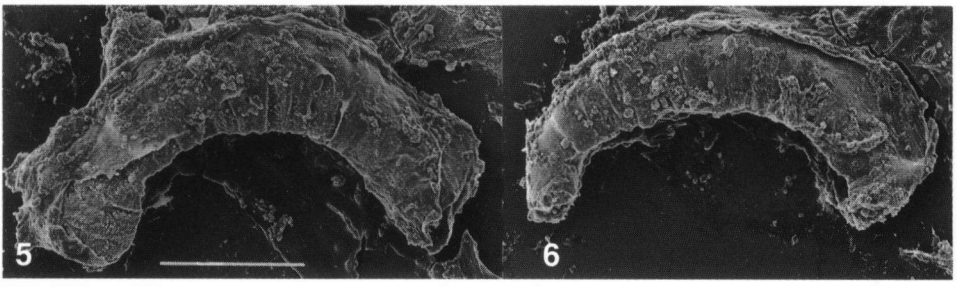
There are several hygromiid (sub)genera next to *Xerotricha*, with species which are conchologically somewhat similar to *Ripkeniella petrophila*, viz. *Alvaradoa* Ibañez & Alonso, 1994, *Canariella* Hesse, 1918, *Ciliellopsis* Giusti & Manganelli, 1990, *Cryptosaccus* Prieto & Puente, 1994, *Microxeromagna* Ortiz de Zárate, 1950, *Monilearia* Mousson, 1872, *Montserratina* Ortiz de Zárate, 1946, *Obelus* Hartmann, 1843, *Schileykiella* Manganelli, Sparacio & Giusti, 1989, and *Tyrrheniella* Giusti & Manganelli, 1989. However, in all these genera, the petrophilous, small hygromiid species dealt with here, would



Figs. 3, 4. *Ripkeniella petrophila* spec. nov., radula, half row (3) and teeth 6-9 (4). Scale 10 µm. SEM photographs: J. Goud.

be exceptional in its combination of characters. Classifying the new species with one of these genera, in the absence of data on the structure of the genitalia, is potentially misleading. Despite serious efforts, no anatomical characters could be made available. Therefore we decided not to wait any further and describe the new species here, with a new genus.

Etymology. — The epithet is derived from the Greek *petros* (rock) and *philos* (loving).



Figs. 5, 6. *Ripkeniella petrophila* spec. nov., jaw. Scale 0.1 mm. SEM photographs: J. Goud.

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REFERENCES

ALONSO, M.R, F.C. HENRIQUEZ & M. IBANEZ, 1995. Revision of the species group Napaeus variatus (Gastropoda, Pulmonata, Buliminidae) from the Canary Islands, with description of five new species. – Zoologica Scripta 24: 303-320.

——, M. IBANEZ, F.C. HENRIQUEZ, M.J.VALIDO & C.E. PONTE-LIRA, 1990. Atlas preliminar de los moluscos terrestres endémicos de Canarias, presentes en Tenerife. — Vieraea 19: 251-265.

GITTENBERGER, E., M.R. ALONSO & M. IBANEZ, 1989. Helix pavida Mousson, 1872, and H. nubivaga Mabille, 1882 (Gastropoda Pulmonata: Helicidae), poorly known Helicellinae from the Canary islands. — Basteria 53: 117-125.