

A new, possibly extinct species of *Canariella* from Tenerife, Canary Islands (Gastropoda: Hygromiidae)¹

R. HUTTERER

Museum Alexander Koenig, Adenauerallee 162, D-53113 Bonn, Germany

HUTTERER, R. (1994): Una nueva especie, posiblemente extinguida, de *Canariella* de Tenerife, Islas Canarias (Gastropoda: Hygromiidae). *VIERAEA* 23: 143-148.

ABSTRACT: A new species, *Canariella pontelirae* n. sp., is described on the basis of subfossil shells collected in the north-western coast of Tenerife. The species has not been found alive so far, although other shells taken in the same deposit represent species which still exist in the Teno mountains. The new species has no relatives in Tenerife but is related to yet undescribed extant species of La Gomera and El Hierro, suggesting a closer zoogeographical relationship between the latter islands and Teno.

Key words: Gastropoda, Hygromiidae, *Canariella*, new species.

RESUMEN: Se describe una especie nueva, *Canariella pontelirae* n. sp., en base a conchas subfósiles recolectadas en la zona noroeste de Tenerife, cerca de la costa. Esta especie no ha sido encontrada viva, a pesar de que en el mismo depósito se recogieron otras conchas de caracoles que aún viven en las montañas de Teno. *C. pontelirae* está emparentada con otras especies vivientes (aún no descritas) de La Gomera y El Hierro, mientras que no hay especies tan próximas en Tenerife; esto sugiere la existencia de relaciones zoogeográficas más estrechas de lo esperado entre Teno, La Gomera y El Hierro.

Palabras clave: Gastropoda, Hygromiidae, *Canariella*, nueva especie.

Terrestrial snails of the genus *Canariella* have diversified in the Canary Islands and form a characteristic part of the endemic fauna. A high number of species have adapted for living in the humid zones as well as in semi-desert coastal areas. The genus has recently been the subject of revisional studies (GROH et al., in press; PONTE-LIRA 1992) and therefore is comparatively well-known.

Five extant species of *Canariella* have been cited for Tenerife (ALONSO et al. 1990) but in fact there exist more species (PONTE-LIRA 1992) which will be described in due course. In 1988, I found a shell fragment of a *Canariella* in a slope deposit opened at that time by a fresh roadcut in a new urbanization in the mountain slopes

¹ Notes on the Malacofauna of the Canary Islands, No. 27. - No. 26: Estudio de *Napaeus baeticatus* (Férussac)(Gastropoda Pulmonata: Enidae) y descripción de dos nuevas especies de su grupo conquiológico. Bull. Mus. Nat. Hist. Nat. (in press).

south of the Acantilado de los Gigantes; the fragment did not match any of the extant species known at that time. Further visits of the site in 1989 and 1993 yielded a few complete shells, but attempts to find evidence of the living animal in the surrounding mountains and above the site have failed. Also the species has not been found since by the members of the Zoology Department of the University of La Laguna, despite their intensive work in Tenerife island (ALONSO et al., 1992). The species therefore is possibly extinct, although some hope remains that it may still live in an unknown place in the Teno mountains. As the fossil site is now (May 1993) almost entirely covered by walls and buildings, the species shall be described on the basis of the material obtained to date.

***Canariella pontelirae* n. sp.**

Holotype

Adult shell (Fig. 1), collected by the author on 22 February 1989 from Quaternary sediments approx. 1 m below soil surface at a fresh roadcut in the Urbanizacion Los Gigantes (UTM 28RCS1925), 150 m a.s.l., Acantilados de Los Gigantes, Tenerife, Canary Islands. Holotype deposited in the Senckenberg-Museum Frankfurt (SMF 309931).

Paratypes

3 complete shells, 3 shell fragments, collected at the same site in 1988, 1989, and 1993. One shell each will be deposited in the Museo de Ciencias Naturales de Tenerife (TFMC) and in the Collection Alonso-Ibañez, Department of Zoology, University of La Laguna (AIT), the other materials are in the author's collection (CHB).

Etymology

The species is dedicated to Dra. Elena Ponte-Lira (Tenerife), whose revision of the extant species of *Canariella* has greatly improved our knowledge of this genus.

Diagnosis and Description

A small species of *Canariella* (mean shell width 10,82 mm; n=4) with broad irregular ribs on the upper surface but only faint striae on the underside of the shell. Umbilicus moderately wide. 5 to 5,25 whorls.

The shell (Figs 1-3) is slightly flattened; it has 5 to 5 1/4 regularly increasing whorls. The periphery is strongly keeled in both juvenile and adult shells, forming also a characteristic suture. The flat and oblique aperture is of an elliptical shape; the lip is thickened. The columellar part of the lip is reflected and covers part of the umbilicus. Very little parietal callus is present. The umbilicus is moderately wide, measuring about 15% of the total shell diameter. The protoconch is small and only faintly striated. The upper surface of the shell bears irregular ribs with a density of about 10 ribs per 5 mm at the penultimate whorl (Fig. 2). Otherwise the surface of the shell is glossy and smooth and shows no microsculpture. The ventral surface of the shell shows a fine striation but otherwise is smooth.

Four adult shells measure as follows (holotype represented by first figure): shell width 11,05-11,80-10,23-10,21 mm; shell height 5,21-5,86-4,69-5,09 mm; width of aperture 5,39-5,79-4,99-4,95 mm; height of aperture 2,96-3,41-3,35-3,16 mm.

Distribution

At present known only from the southern end of the Acanilado de los Gigantes, Teno, Tenerife, Canary Islands.

Description of the deposit

The deposit is situated in the uppermost part of the new Urbanización Los Gigantes, along the Avenida Maritima and a short parallel road above. Houses and roads have been cut into the fairly steep slopes running from the top of the mountain down to the sea. These slopes are composed of large bloques of basalt mixed with soil and debris. Gastropod shells are preserved in the sediment between rocks but also in more homogenous sediment lenses 1-2 meters below the actual surface. The type level where most shells including the holotype were found is at the border of the upper road, opposite to house number 15. About 1 meter below the surface there is a level of greyish sand and clay. The shells are often encrusted by the soil and are difficult to detect.

Besides the new species, shells of six further molluscs were obtained: another new species of the *Canariella hispidula* group which has been found alive since (PONTE-LIRA 1992), *Hemicycla mascaensis* Alonso & Ibañez, 1988, *Hemicycla incisogranulata* (Mousson, 1872), *H. consobrina* (Férussac, 1821), *Caracollina lenticula* (Férussac, 1821), and *Napaeus* cf. *rupicola* (Webb & Berthelot, 1833).

The age of the deposit is difficult to estimate. Similar slope deposits in the Anaga mountains in northern Tenerife have been regarded as Pleistocene (CRIADO HERNANDEZ & YANES LUQUE 1982), but for the Los Gigantes deposit an unspecified Quaternary age is the closest approximation which can be made at present.

Comparisons

Of the five extant species of *Canariella* cited by ALONSO et al. (1990) from Tenerife, none is similar to *C. pontelirae* n. sp. In its general form, the shell resembles that of *C. hispidula* (Lamarck, 1822) (Fig. 4; a syntype of *hispidula* was figured by MERMOD 1951), but *pontelirae* n. sp. is flatter, keeled, and has a very different sculpture (Fig. 2).

Among the species of *Canariella* currently known only *C. eutropis* (Shuttleworth, 1860), a species endemic to the Jandia Mountains of Fuerteventura, is superficially similar. However, its shell is considerably larger and the crests are much stronger (MOUSSON 1872: plate 3, fig. 13). Also the surface of the shell between the crests shows a microsculpture of very fine parallel grooves which is absent in *C. pontelirae* n. sp. Moreover, PONTE-LIRA (1992) has demonstrated that from the anatomical point of view *C. eutropis* is not related to any of the species occurring in the western Canary Islands.

There are two species from La Gomera and El Hierro which resemble *Canariella pontelirae* n. sp. more closely (PONTE-LIRA 1992); both species have not yet been described formally and will therefore only be mentioned briefly. These new species are easily distinguished by the presence of prominent ribs also on the underside of the shell; such ribs are faint or lacking in *C. pontelirae* n. sp.

DISCUSSION

Judged from the morphology of the shell, *Canariella pontelirae* n. sp. forms a monophyletic group with two not yet described species from La Gomera and El Hierro (PONTE-LIRA 1992). If this proves to be correct, then the species has no relatives in Tenerife. This is interesting because it indicates a closer zoogeographical relationship between the Teno mountains and La Gomera and El Hierro. The same counts for *Napaeus* cf. *rupicola* of which two shell fragments were obtained from the fossil deposit. At present the species is regarded as an endemic of north-eastern Gomera, but a similar (if not identical) form apparently existed in the Teno mountains as well. The two corresponding species of *Canariella* and *Napaeus* have their distributions along the coast of north-eastern Gomera, facing the cliffs of the Teno mountains in Tenerife. This distribution pattern suggests a faunal exchange across the sea between both islands.

Of the six species of gastropods found along with *Canariella pontelirae* n. sp., five are still represented in the living fauna.

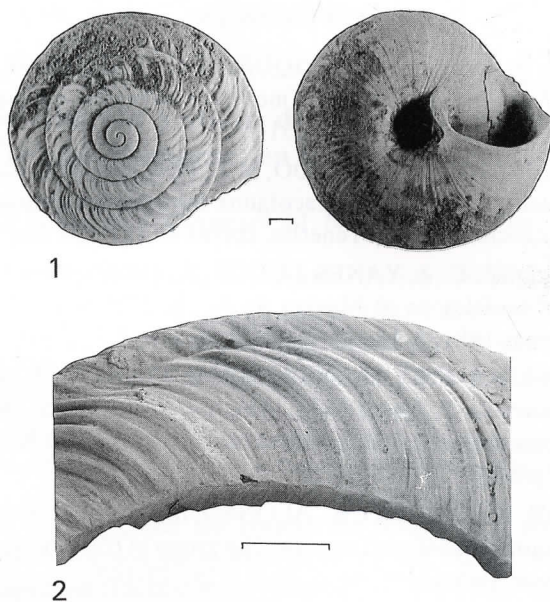
Hemicycla mascaensis and *Canariella* n. sp. are local endemics of the Teno mountains (IBANEZ et al., 1988; PONTE-LIRA 1992). The record of *H. mascaensis*, previously known only from the type locality near Masca, is of special interest. The species has been classified as 'vulnerable' by ALONSO et al. (1992). Numerous shells on the surface of the slope above the fossil site as well as one living specimen show that a further extant population of this rare species existed in the cliff now almost entirely covered by the urbanization Los Gigantes.

Hemicycla incisogranulata has its main distribution in the Teno mountains but a few relict populations exist in the valleys along the west coast of the island (IBANEZ et al., 1987). Two further species (*Hemicycla consobrina*, *Caracollina lenticula*) are widely distributed in Tenerife (ALONSO et al., 1990).

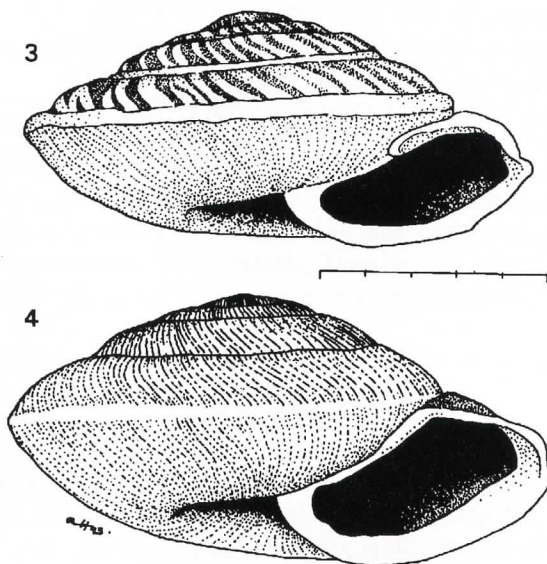
The few fragments of *Napaeus* cf. *rupicola* either indicate a link with La Gomera or alternatively may represent another Teno endemic. Hopefully this species and *Canariella pontelirae* n. sp. will be found alive one day in the Teno mountains. This would further increase the present diversity of gastropods in Tenerife and would also allow to test the hypotheses suggested here on the basis of the fossil shells.

ACKNOWLEDGEMENTS

I am grateful to Klaus Groh, Miguel Ibañez, and Elena Ponte-Lira, who freely shared their knowledge on the genus *Canariella* with me and improved this note with their comments. I thank also Obdulia M^a Molina who translated the abstract into Spanish, and Gerhard Oleschinski for the stereoscan photograph.



Figs 1-2: *Canariella pontelirae* n. sp., (1) dorsal and ventral aspect of the shell (SMF 309931, holotype); and (2) part of the last whorl of a fragment (CHB, paratype). Scales represent 1 mm.



Figs 3-4: Lateral view of a shell of *Canariella pontelirae* n. sp. (SMF 309931, Los Gigantes) and of *Canariella hispidula* (CHB, Candelaria). Scale represents 5 mm.

REFERENCES

- ALONSO, M.R., M. IBANEZ, M., HENRIQUEZ, F.C., VALIDO, M.J., PONTE-LIRA, C.E. (1990). Atlas preliminar de los moluscos terrestres endémicos de Canarias, presentes en Tenerife. *Vieraea* 19: 251-265.
- ALONSO, M.R., M. IBANEZ, M., VALIDO, M.J., PONTE-LIRA, C.E., HENRIQUEZ, F. (1992). Catalogación de la malacofauna terrestre endémica de Canarias, con vistas a su protección. Isla de Tenerife. *Iberus* 8: 121-128 (for 1988).
- CRIADO HERNANDEZ, C. & YANES LUQUE, A. (1982). Depositos torrenciales y formaciones coluviales en el Macizo de Anaga (Tenerife). *Ann. Dept. Geogr., Univ. La Laguna*, 1981: 8-14.
- GROH, K., PONTE-LIRA, C.E., ALONSO, M.R. & IBANEZ, M. (1994): Revision of the genus *Canariella* P. Hesse 1918. *Alvaradoa* n. subgen., with description of one new species from El Hierro (Gastropoda Pulmonata: Hygromiidae). *Arch. Moll.* 123 (in press).
- IBÁÑEZ, M., GROH, K., CAVERO, E., ALONSO, M.R. (1987). Revision of the group *Hemicycla* Swainson 1840 on Tenerife: The group of *Hemicycla plicaria* (Lamarck 1816) (Mollusca: Helicidae). *Arch. Moll.* 118: 77-103.
- IBÁÑEZ, M., GROH, K., ALONSO, M.R., CAVERO, E. (1988). Revision of the group *Hemicycla* Swainson, 1840 (Mollusca, Helicidae) from Tenerife: *Adiverticula* n. subgen. and description of three new taxa. *Bull. Mus. natn. Hist. nat., Paris*, 10 A: 309-326.
- MERMOD, G. (1951): Les Types de la Collection Lamarck au Muséum de Genève. *Mollusques vivants. II. Rev. suisse Zool.* 58: 693-753.
- MOUSSON, A. (1872): Révision de la faune Malacologique des Canaries. - *N. Denkschr. allg. schweiz. Ges. gesamt. Naturw.*, 25: 1-176, 6 pls.
- PONTE-LIRA, C.E. (1992): La subfamilia Ciliellinae (Mollusca Gastropoda: Hygromiidae) en el Archipiélago canario. Doctoral thesis, Univ. La Laguna (unpublished).