Description of a new *Canariella* P. Hesse, 1918 (Stylommatophora: Canariellidae) from the Quaternary of Fuerteventura, Canary Islands

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ABSTRACT

A new fossil species of the genus *Canariella, C. gerti*, classified in the subgenus *Majorata* Alonso & Ibáñez, 2006, is described from Quaternary eolianites from the northwestern part of Fuerteventura, Canary Islands. Its relationships to other taxa of the family occurring on the Canary Islands and especially on Fuerteventura are discussed.

Key words: Mollusca, Gastropoda, Pulmonata, fossil, *Majorata*, new species.

INTRODUCTION

Canariella P. Hesse, 1918 is the third largest genus of land snails on the Canary Islands, with 19 Recent endemic species in six subgenera (Alonso & Ibáñez, 2015a) after *Napaeus* (Enidae, 69 extant species; Alonso & Ibáñez, 2015b) and *Hemicycla* (Helicidae, 41 extant species; MolluscaBase, 2021). Three of these species live in the geologically oldest, eastern Canary Islands of Fuerteventura and Lanzarote and their surrounding islets. *Canariella* (*Majorata*) *eutropis* (L. Pfeiffer, 1861) and *C.* (*M.*) *jandiaensis* Ibáñez & Ponte-Lira, 2006 (Alonso et al., 2006) are found exclusively on Fuerteventura whereas *C.* (*Simplicula*) *plutonia* (R.T. Lowe, 1861) is also found on Lanzarote, Lobos and La Graciosa.

In contrast to the extant fauna, *Canariella* species are rare in deposits older than the Holocene. The remarkable lack of extant members of the genus on Gran Canaria, where four Pliocene species are known, is discussed in Hutterer & Groh (2008). An additional fossil species from the Early Pliocene of Lanzarote was described by Gittenberger & Ripken (1985). An assumed Quaternary fossil species from Tenerife, i.e. *C. pontelirae* Hutterer, 1994, was recently found alive (Ibáñez et al., 2006).

A single specimen of a hitherto unknown species of *Canariella* was found in March 1989 in younger fossil deposits in the northwestern part of Fuerteventura. Despite further extensive searches in 1989, and during four subsequent visits prior to 2018, no additional specimens of this remarkable species were found either by myself, or by a number of colleagues with whom I shared information on this specimen.

Although only a single specimen is currently known, I decided that the unique and distinguishing features of the shell justify a description as a new species to contribute to the knowledge of the rich and diverse fossil Canarian fauna.

METHODS

Shells (Figs 1–2) were photographed with a digital camera (Olympus DP70) mounted on a stereoscopic microscope (Olympus SZX12). Measurements were taken with callipers to 0.10 mm. Counting of shell whorls followed Kerney et al. (1983: 21).

SYSTEMATICS

Order Stylommatophora A. Schmidt, 1855

Suborder Helicina Schileyko, 1979

Infraorder Helicoidei Schileyko, 1979

Superfamily Helicoidea Rafinesque, 1815

Family Canariellidae Schileyko, 1991

Genus *Canariella* P. Hesse, 1918

Type species by monotypy (Hesse, 1918: 107): *Carocolla hispidula* Lamarck, 1822.

Subgenus ? *Majorata* Alonso & Ibáñez, 2006

Type species by original designation (Alonso & Ibáñez in Alonso et al., 2006: 53): *C.* (*Majorata*) *eutropis* (L. Pfeiffer, 1861).

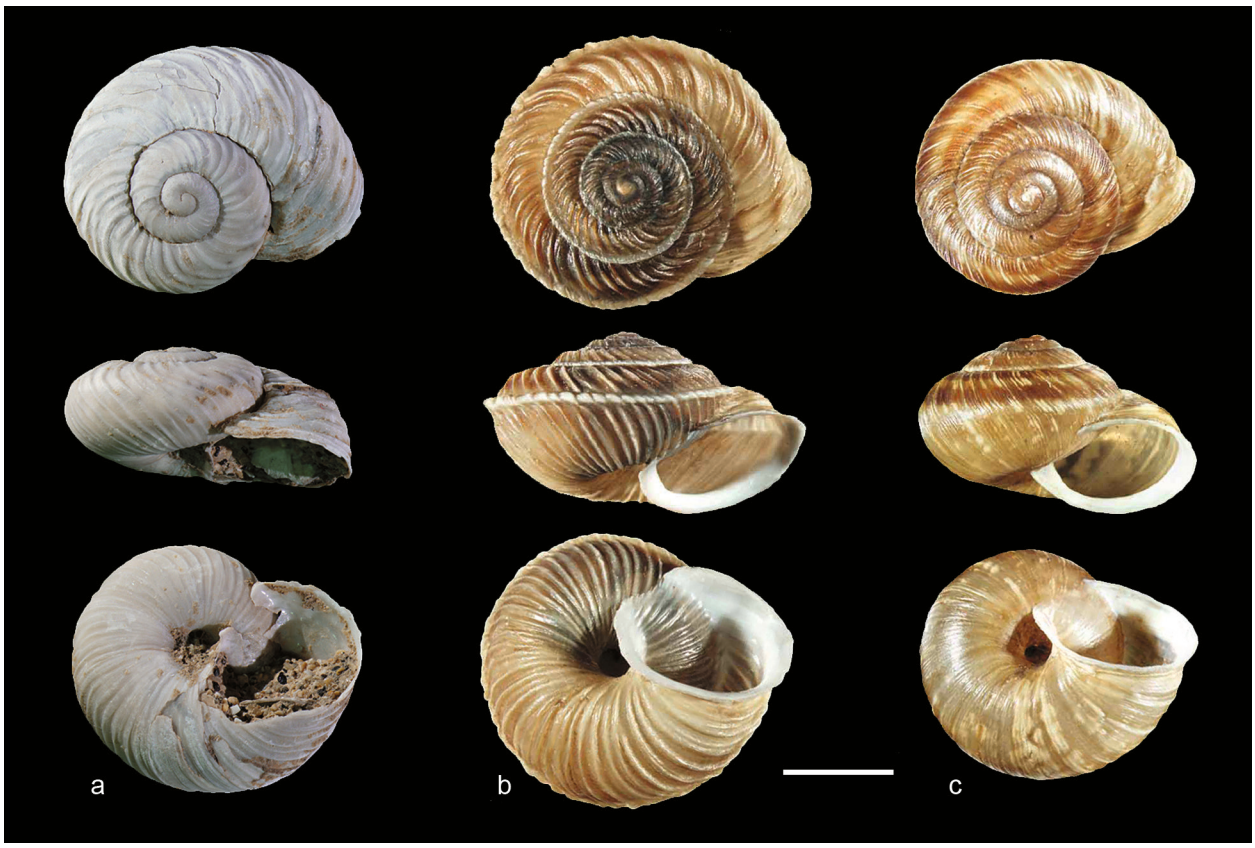

Figure 1. a. Holotype of *Canariella gerti* n. sp., SMF 393482; width 14.5 mm, photo M. Ibáñez. **b.** *Canariella* (*Majorata*) *eutropis* (L. Pfeiffer, 1861), Fuerteventura, Jandía Peninsula, Solana del Ciervo, 15.0 mm. **c.** *Canariella* (*Majorata*) *jandiaensis* Ibáñez & Ponte-Lira, 2006, Fuerteventura, Jandía Peninsula, Morro del Cavadero, 13.7 mm. (b, c: modified from Ibáñez et al., 2006). Scale bar = 5 mm.

Canariella (*Majorata* ?) *gerti* n. sp.

Figures 1a, 2

Type material. — Holotype SMF 331482, collected by Martina Kasprzak & Klaus Groh, 17.iii.1989. Almost complete shell, last whorl damaged.

Type locality. — Spain, Canary Islands, Fuerteventura, Barranco de los Molinos, sandy deposits on the southern side of the ancient high flood bank of the creek, approx. 45 m E of the bridge to the Puertito de los Molinos, 28°32′32.1″N, 14°03′45.3″W, approx. 4 m a.s.l.

Type stratum. — Light brownish, slightly cemented eolianites from coarse sand of younger Quaternary age, possibly Holocene.

Diagnosis. — A medium-sized species of *Canariella*, with a moderately wide umbilicated shell with only slightly more than 3 whorls, a rounded periphery, and numerous strong, undulating ribs. Micro-sculpture of teleoconch with a dense, very fine pustulation.

Description. — Shell dextral, discoid, 3.2 whorls; embryonic shell smooth, 0.8 whorls; teleoconch with approximately 2.4 well-rounded whorls, rapidly expanding in diameter, with densely set riblets on first half teleoconch whorl, becoming wider and undulating, with a carinated crest on subsequent whorls; microsculpture finely granulated with oblique radial pustulated riblets crossing the rougher ornamentation (Fig. 2); last whorl with 37 ribs; shell very eccentric, width of last whorl reaching half of shell's diameter at aperture; suture simple, deeply incised; umbilicus medium-sized and deep, about 15% of shell's diameter, slightly obscured by reflected lip; last whorl tapering downwards towards the aperture, its upper margin nearly reaching lower edge of penultimate whorl; aperture strongly oblique, widely ovate; peristome discontinuous, slightly expanded as a very narrow lip with an internal elevated ridge in upper half, lower part of lip broken off, but probably more developed there, as it is reflected in the still existing columellar edge, partially covering the umbilicus; peristome margins converging in parietal zone; remnants of a thicker, probably contiguous palatal callus present.

Measurements. — Width 14.5 mm, height 6.6 mm, apertural width 6.6 mm, apertural height 2.9 mm, maximum width of last whorl 5.2 mm, umbilical width 2.0 mm, diameter of embryonic whorl 2.2 mm.

Etymology. — Named in honour of the German geneticist Heinz Gert de Couet, Professor Emeritus at the Department of Biology, University of Hawai'i at Mānoa, Honolulu,

USA, in appreciation of five decades of close personal friendship and professional expertise and input during our years working together in malacology at the Technical University of Darmstadt, Germany.

COMPARISON

According to Alonso & Ibáñez (2015), the genus *Canariella* comprises several distinctly ribbed species living on La Gomera. These are *C.* (*Gara*) *ronceroi* Ponte-Lira, 2002, *C.* (*G.*) *bimbachensis* Ibáñez & Alonso, 2002 (Ibáñez et al., 2002) and *C.* (*Salvinia*) *discobolus* (Shuttleworth, 1852). An assumed fossil species from Tenerife, *C.* (*C.*) *ponteli-rae* Hutterer, 1994, later proven to be still extant in a very restricted area at the westernmost tip of the Teno Mountains (Ibáñez et al., 2006), also shows moderate ribbing. The distinctly keeled *C.* (*Majorata*) *eutropis* (L. Pfeiffer, 1861) (Fig. 1b) is known from Fuerteventura. *C.* (*Majorata*) *jandiaensis* (Ibáñez & Ponte-Lira, 2006) from Fuerteventura is not keeled and bears less prominent undulating ribs. Apart from the latter, *Canariella gerti* n. sp. differs from all the other ribbed species by the absence of a keel, the peculiar micro-sculpture of the teleoconch and the much smaller number of whorls. It differs from *C. jandiaensis* (Fig. 1c) by the number of whorls, the microsculpture, the less globose shape and the more pronounced ribs. It should be emphasized that the various *Canariella* species are very consistent in their conchological characters, as evidenced by personal experience and in the work of Ibáñez et al. (1995) for several species. Hence, the author is confident that we are not dealing with an extreme form of an already described species.

DISCUSSION

The discovery of more fossil species of *Canariella* in the eastern Canary Islands, in addition to the only known four Early Pliocene species from Gran Canaria (Hutterer & Groh, 2008) and two Early Pliocene species mentioned (one named) from Lanzarote (Gittenberger & Ripken, 1985) indicates, that there was already a high degree of diversification in this genus since the Miocene. This is further supported by the existence of several additional species from the Pliocene and Pleistocene of Fuerteventura and Lanzarote, still under study (Groh, in prep.). These species are mostly represented by single specimens only, fragments or stone casts with remnants of the shell.

Canariella gerti n. sp. might be closely related to the recent members of the subgenus *Majorata* Alonso & Ibáñez, 2006. Being of similar size, *Canariella gerti* n. sp. shows a combination of features of both living *Majorata* species in shape and sculpture, viz. roundish but less globose than *C. jandiaensis*, strongly ribbed, but not keeled like *C. eutropis*.

Figure 2. Apex of *Canariella gerti* n. sp. (Photo: M. Ibáñez).

Therefore, it can be seen as an ancestral member of the subgenus *Majorata*, endemic to the island of Fuerteventura.

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