

Description of a newly discovered extinct representative of the genus *Hemicycla* Swainson, 1840 (Gastropoda, Pulmonata, Helicidae) from La Gomera, Canary Islands

T. BECK

Institut für Paläontologie der Universität Erlangen, Loewenichstrasse 28, D 91054 Erlangen, Germany;
beck@pal.uni-erlangen.de

& W. RÄHLE

Engelfriedshalde 102, D-72076 Tübingen, Germany; wolfgang.raehle@uni-tuebingen.de

A new fossil species of the genus *Hemicycla* from La Gomera is described. It was found in Quaternary deposits near Hermigua in the northeast of the island. The shells are considerably larger than those of all other *Hemicycla* species from the Canary Islands. *Hemicycla montefortiana* spec. nov. shows a strongly malleated shell sculpture whereas the shell surface is smooth.

Key words: Gastropoda, Pulmonata, Helicidae, *Hemicycla*, taxonomy, new species, Quaternary, La Gomera, Canary Islands, Spain.

At the slopes of numerous barrancos on the island of La Gomera Quaternary deposits are exposed. They are deeply cut by the erosive activities of the actual brooks. According to Groh et al. (1996) these deposits have to be interpreted as remnants of the bottoms of ancient, presumably Pleistocene valleys.

At many localities shells of land snails can be found in such deposits. In some outcrops species that still are living on the island are co-occurring with supposed extinct species only known from fossil records.

In the checklist published by Bank, Groh & Ripken (2002) 12 species of the genus *Hemicycla* Swainson, 1840, are mentioned to occur on La Gomera. Five taxa [*H. gomerensis* (Mousson, 1872), *H. hedybia* (Mabille, 1882), *H. paivanopsis* (Mabille, 1882), *H. quadricincta quadricincta* (Morelet, 1864) and *H. quadricincta subaucta* (Wollaston, 1878)] are exclusively known as members of the actual fauna. Four species [*H. distensa* (Mousson, 1872), *H. efferata* (Mousson, 1872), *H. fritschi* (Mousson, 1872), *H. planorbella* (Lamarck, 1816)] are recorded as both alive and in a fossil state. According to Groh (1985) in some of these species fossil specimens often show significantly larger shell sizes than Recent ones. Four taxa [*H. digna* (Mousson, 1872), *H. merita* (Mousson, 1872) (= *migueli* Groh & Hutterer, 1996), *H. moussoniana* (Wollaston, 1878) and *H. semitecta* (Mousson, 1872)] are only known from fossil shells.

Most *Hemicycla* species from La Gomera are small to medium-sized. Only in three taxa (*H. efferata*, *H. moussoniana* and *H. digna*) the shell diameter exceeds 30 mm. Investigations of fossil carrying deposits in the northern part of La Gomera have now produced shells of an additional *Hemicycla* species only known from fossil record. Its shells are larger than the shells of all other *Hemicycla* species, not only from La Gomera, but from the whole Canarian Archipelago.

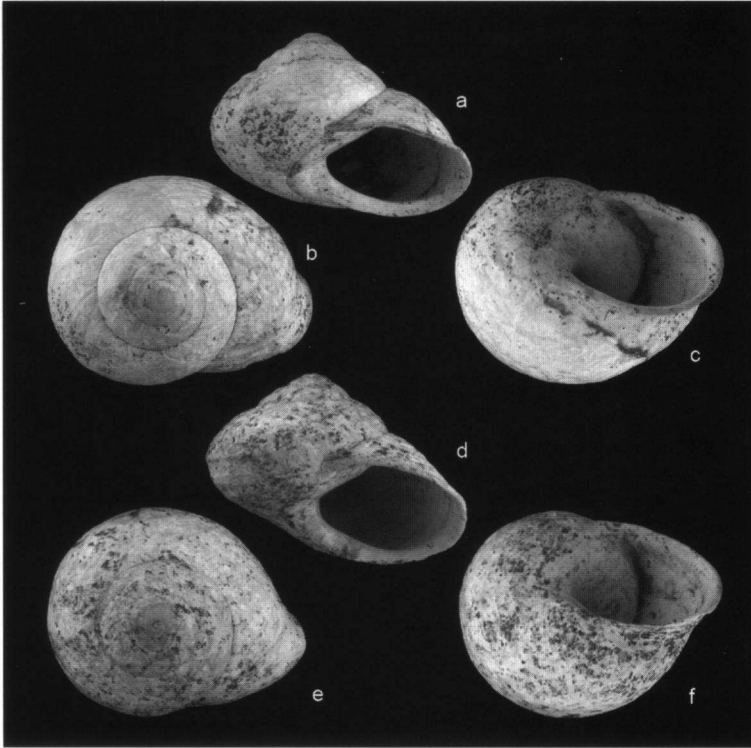


Fig. 1. *Hemicycla montefortiana* spec. nov., La Gomera, Barranco de Monteforte. a-c, holotype (RGM 456700), W 42.3 mm, H 30.6 mm; d-f, paratype (RGM 456702), (W, 42.3 mm; H, 31.6 mm).

Hemicycla montefortiana spec. nov. (figs 1–2)

Holotype: La Gomera, Barranco de Monteforte, about 2 km south of the centre of Hermigua, fossil beds at the right side of the valley near Casas del Cabo, at an altitude of 250 m (= locus typicus); Beck & Rähle leg., 10.iii.2005 (Nationaal Natuurhistorisch Museum, Leiden (Netherlands), RGM 456700).

Paratypes, collected together with the holotype by Beck & Rähle: Nationaal Natuurhistorisch Museum, Leiden (Netherlands), RGM 456701-456704/4; Senckenberg-Museum, Frankfurt am Main (Germany), SMF 328797/2; private collection of W. Rähle, Tübingen/1.

Diagnosis. – Shell resembling that of *Hemicycla moussoniana*, but considerably larger; shell surface is neither striated nor granulated, but glossy and very coarsely malleated.

Description. – The shell is imperforate, solid, and depressed-conical with a prominent apex. It has 4.3–4.6 rapidly increasing whorls and reaches a diameter of up to 46 mm (for measurements of holotype and 7 paratypes in detail see table 1). The protoconch shows no sculpturing. The rest of the shell is irregularly and very coarsely malleated. The grooves of the malleation are large and their elevated borders form a more or less striking reticulate pattern at the shell surface (fig. 2d-e). Sometimes the grooves flow together and form longitudinal and oblique ridges (fig. 2e). In well-preserved shells the malleated sur-

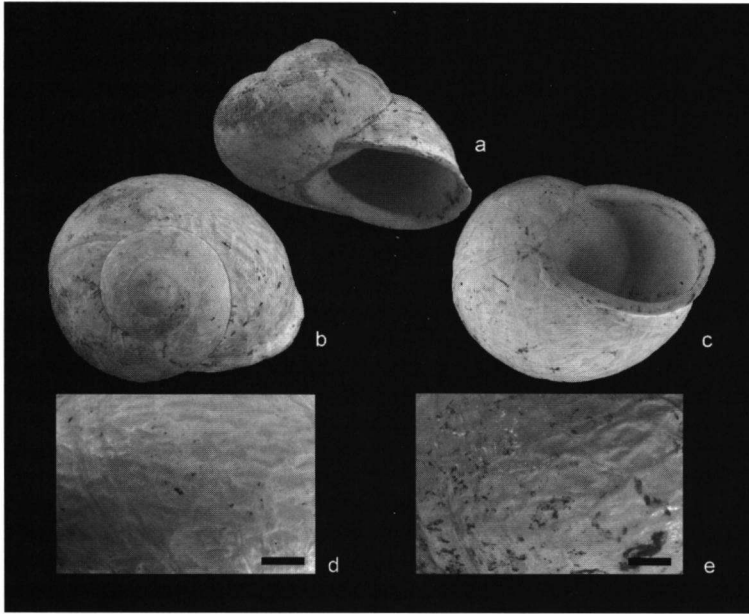


Fig. 2. *Hemicycla montefortiana* spec. nov., La Gomera, Barranco de Monteforte. a-c, paratype (RGM 456701), W 42.8 mm, H 32.8 mm; d-e, details of the shell surface (scale bar = 2 mm).

face is (apart from very fine radial and spiral striae which appear here and there) smooth and somewhat glossy. No traces of granulation are visible. The periphery of the body whorl is either rounded or slightly angled at its beginning (figs 1-2). Some shells show a weak threadlike keel at the periphery (fig. 1d). The last 10-15 mm of the body whorl descend abruptly. The plane of the aperture is inclined towards the axis of the shell with an angle of about 45 degrees. The peristome is moderately reflected and strengthened by a flat lip. Towards the columellar region the lower margin of the aperture is considerably thickened and attached to the shell. The margins of the peristome converge only slightly and are connected with each other by a thin callus.

Table 1. *Hemicycla montefortiana* spec. nov. Shell measurements in mm of the holotype and 7 paratypes. A, width; B, height; C, maximum aperture width; D, maximum aperture height; E, number of whorls; F, width of protoconch; G, whorls of protoconch.

	A	B	C	D	E	F	G
Holotype	42.3	30.6	30.0	24.0	4.6	6.5	1.6
Paratypes	39.0	30.8	26.2	22.7	4.3	6.0	1.5
	39.8	31.2	26.4	22.0	4.6	6.0	1.6
	41.0	29.7	27.0	21.0	4.5	6.5	1.4
	41.2	30.0	26.7	23.2	4.5	6.5	1.4
	42.3	31.6	29.6	23.8	4.5	6.4	1.4
	42.8	32.8	28.4	23.9	4.3	6.4	1.4
	45.6	33.4	31.2	25.6	4.5	6.3	1.4

Distribution. – The new species was collected together with *Pomatias* spec., *Gibbulinella dewinteri* Bank, Groh & Ripken, 2002, *Napaeus* cf. *ocellatus* (Mousson, 1872), *Napaeus rupicola* (Mousson, 1872), *Canariella gomerae* (Wollaston, 1878), and *Hemicycla fritschi* (Mousson, 1872). Shells were found only at the type locality. Obviously the new species once had a very limited distribution.

Etymology. – The specific name refers to the type locality (Barranco de Monteforte).

Discussion. – In the general outline the new species resembles most of all the extinct *Hemicycla moussoniana*. However, according to Mousson (1872) and our own observations the shells of *H. moussoniana* are smaller and the surface of the shell is strongly striated, not malleated as in the new species.

Hemicycla efferata is closely related to *H. moussoniana*. It can be found on La Gomera in Quaternary deposits but also alive in higher elevated areas in the eastern part of the island. In the opinion of Wollaston (1878), *H. efferata* and *H. moussoniana* are hardly distinct species and it seems possible that *H. moussoniana* is but a larger fossil form of *H. efferata*. In the CEPLAM-list (2001) *H. moussoniana* has been synonymized with *H. efferata*.

The shells of *H. efferata* are considerably smaller than in *H. montefortiana* spec. nov., moreover they are coarsely striated and clearly granulated. Malleations which may occur sometimes on the shells of *H. efferata* here and there are very faint and inconspicuous.

Another large extinct *Hemicycla* from La Gomera with a shell diameter of up to 37.6 mm (Groh et al., 1996) is *H. digna* that once lived in the area of Agulo in the northern part of the island. *H. digna* is easily distinguished from the new species by its smaller size, the sharply keeled periphery of the body whorl and an oblique ribbed shell surface with fine granulations on the ribs and interspaces.

REFERENCES

- BANK, R.A., K. GROH & T.E.J. RIPKEN, 2002. Catalogue and bibliography of the non-marine Mollusca of Macaronesia. In: FALKNER, M., K. GROH & M.C.D. SPEIGHT, eds, *Collectanea Malacologica*. Festschrift für Gerhard Falkner: 89-235. ConchBooks, Hackenheim.
- CEPLAM (Centro de Planificación Ambiental. Gobierno de Canarias), 2001. Lista de especies silvestres de Canarias. Hongos, plantas y animales terrestres: 143-148, 350-355 (Phylum Mollusca). – Internet: <http://www.gobcan.es/medioambiente/biodiversidad/ceplam/bancodatos/biota/ListadeMolluscaeIndice.pdf>
- GROH, K., 1985. Landschnecken aus quartären Wirbeltierfundstellen der Kanarischen Inseln (Gastropoda). – *Bonner zoologische Beiträge* 36: 395-415.
- GROH, K., R. HUTTERER & V. VOGGENREITER, 1996. On the identity of *Helix digna* Mousson, 1872, and description of another extinct helicid from La Gomera, Canary Islands. – *Basteria* 59: 115-125.
- MOUSSON, A., 1872. Révision de la faune malacologique des Canaries. – *Neue Denkschriften der allgemeinen schweizerischen Gesellschaft für die gesammten Naturwissenschaften* (3) 25 (1): 1-176.
- WOLLASTON, T.V., 1878. *Testacea Atlantica* or the land and freshwater shells of the Azores, Madeiras, Salvages, Canaries, Cape Verdes and Saint Helena: 1-588. London.