



ISSN 1869-5302

CONCHYLIA

FEHLERSUCHE

SEDDON'S LANDSNAILS OF MADEIRA

VEXILLUM **NEUE ARTEN VON DEN PHILIPPINEN**

CYPRAEEN + OVULIDEN **NEUE TAXA AUS ROTEM MEER UND WEST PAZIFIK**

QUELLSCHNECKEN **NEUE UNTERGATTUNG AUS FRANKREICH**

PILGERMUSCHELN **NEUE ART AUS AUSTRALIEN**

***Pustularia globulus marerubra* n. ssp., a new subspecies from the Red Sea (Mollusca: Gastropoda: Cypraeidae)**

By FELIX LORENZ, Buseck-Beuern (Germany)

Fig. 1

Abstract

The population of *Pustularia globulus* (LINNAEUS, 1758) from the Red Sea is described as *P. globulus marerubra* n. ssp. It differs from *P. g. brevisrostris* SCHILDER & SCHILDER, 1938 mainly by having finer, darker stained teeth. The Pleistocene *P. globulus giftunensis* LORENZ, 1992 is discussed as being a different species with closer affinities to *P. cicercula* (LINNAEUS, 1758) and *P. margarita* (DILLWYN, 1817).

Keywords

Cypraeidae, *Pustularia globulus*, Red Sea

Introduction

The treatise of the Pleistocene Cypraeid fauna of Hurghada (LORENZ, 1992) contains the description of *P. globulus giftunensis*. That name became popular also for the living population of *P. globulus* from the Red Sea, which is markedly different from the other living populations of that species. Closer comparison of the fossil and recent specimens from the vicinity of Hurghada reveals that they are not identical, and hence the living population requires a different name.

Pustularia globulus marerubra ssp. nov.

Material: 26 fresh dead specimens of the new subspecies from the vicinity of Hurghada, Egypt, are designated as types, 14 further specimens of the new subspecies originate from Eilat in the Gulf of Aqaba. For comparison, more than 200 specimens of *P. globulus brevisrostris* SCH. & SCH., 1938 from eight different localities in the western Indian Ocean were available. Measurements enlisted: length, width, height (mm), Labral : columelar teeth (counted).

Holotype	15.4 x 9.2 x 8.4 (29 : 22), coll. MNHN
Paratype 1	13.9 x 8.5 x 7.9 (24 : 24)
Paratype 2	16.7 x 10.2 x 9.3 (27 : 21)
Paratype 3	16.9 x 10.4 x 9.3 (26 : 25)
Paratype 4	12.6 x 7.6 x 6.6 (24 : 17)
Paratype 5	12.5 x 7.6 x 6.6 (24 : 17)

And 20 further paratypes in the author's collection and collection Dr. MARCO CHIAPPONI, Lecco.

Shell formula (after SCHILDER & SCHILDER 1938, modified after LORENZ 2002): [15(61–55)32:27]

Description of the holotype and the paratypes: Shell small (10–17 mm), globular, inflated. Extremities rostrated and pointed, slightly margined posteriorly. The aperture is very narrow throughout, slightly declivous in front, gently curved to the left posteriorly. The teeth in the anterior and posterior third are produced and extend more than half way across the labrum and the base. In the mid-section they are shorter and much finer. The general colour varies from orange to saturate red-brown. The extremities are stained darker in most specimens, and a darker shade may occur above the extremities dorsally. There are numerous large, distant darker spots covering the dorsum. The teeth are stained with dark brown, especially towards the extremities. There is no indication of darker isolate basal blotches but in some shells the staining of the teeth extends as blurred patches of darker colour onto the adjacent smooth parts of the labrum and the base.

The characteristics of the living animal are unrecorded.

Distribution and Habitat: All type specimens of *Pustularia globulus marerubra* n. ssp. were collected by the author and SVEN KAHLBROCK in the vicinity of Hurghada and the Giftun Islands, Egypt. Further records are known from Eilat in the Gulf of Aqaba (Israel, YERUSLAWSKI, pers. comm.). The animals seem to hide deep in crevices of vital coral reef, in ledges along walls and caves. All type specimens were found empty, in sand pockets and in the sediment of caves and ledges at depths ranging from 5 to 45 m.

Etymology: The new subspecies is named after its geographic distribution in the Red Sea.

Discussion: *Pustularia globulus* (LINNAEUS, 1758) is widely distributed in the Indo-Pacific. It is traditionally subdivided in three geographic subspecies. The population from the Red Sea described herein was first discussed on the basis of a fossil specimen (LORENZ 1992), see below. The living shell was first recognized as being in some way remarkable by L. RAYBAUDI (1993). In his specialized catalogue of Cypraeidae, he listed the population of *P. globulus* from

the Red Sea as forma *peledi*, a taxonomically invalid name. He illustrates a specimen from dorsal view but does not give any discussion of it. My revision of the genus (1999) mentioned the populations of *P. globulus* from the Red Sea as being distinct from *P. globulus brevisrostris* SCHILDER & SCHILDER, 1938 from the western Indian Ocean on account of having dark stained teeth. The characteristics of the dentition are indeed the most obvious difference between any population of *P. g. brevisrostris* and *P. g. marerubra* n. ssp. In *P. brevisrostris*, the teeth are coarse, short and unstained, whereas in *P. marerubra* they are considerably more numerous (32:27 reduced opposed to 26:22 in *brevisrostris**) and hence appear much finer, and there always is a brown stain at least in the posterior labral teeth. In *P. g. marerubra*, the extremities are more delicate and rostrate than in *P. g. brevisrostris*, whose extremities are never stained with darker (except in certain populations from the Mascarene Islands, which are presently under study as a possible fifth subspecies).

Separation of *P. g. marerubra* from *P. g. globulus* presents no problem on account of the cylindrical shape and more calloused shell of the nominate subspecies, which also has longer, coarser teeth throughout, and calloused, short extremities. The brown staining of the teeth separating *P. g. marerubra* from *P. g. brevisrostris* is commonly found in *P. g. globulus*, whose range from Sri Lanka to Thailand is not touching that of *P. g. marerubra*. *P. g. sphaeridium* SCHILDER & SCHILDER, 1938 from the Philippines and eastward to W. Polynesia and Micronesia can be quite similar to *P. g. marerubra* in having more delicate, finer rostrate extremities and dark stained teeth. However, most *P. g. sphaeridium* have four darker basal blotches and the teeth are always longer and coarser throughout, especially on labral side.

The type material of *P. „globulus“ giftunensis* LORENZ, 1992 was collected in Pleistocene sediments along the shore of Giftun Kebir along whose reefs *P. g. marerubra* is found today. The shell has long, coarse teeth, unlike *P. g. marerubra* or *P. g. brevisrostris*. It resembles *P. cicerula* (LINNAEUS, 1758) in the character of the long teeth, whereas the dorsal aspect reminds of *P. margarita* (DILLWYN, 1817). The fossil specimen illustrated as „*P. g. brevisrostris*“ in LORENZ 1992 may represent the new subspecies described herein. An updated revision of the genus *Pustularia* is in preparation and will give more comprehensive comparisons of the great diversity of this genus.

*) Based on the measurement of 33 specimens from Tanzania. In their Prodrome, the SCHILDER's quote 33:22 as the reduced number of teeth in the shell formula of *P. g. brevisrostris*, which is explained by the fact that they counted also the labral crenulations. These are minute, mostly indistinct denticles inside the anterior part of the labrum adhering to the canal. My counting of teeth only considers those teeth that are directly linked to the labrum, because the crenulations are not found in all groups of cowries and, like the serrations on the fossula, are not really a part of the dentition in my opinion. Considering also the crenulations increases the number of counted labral teeth by two or three in each shell, but keeps the proportion of the difference between *P. g. brevisrostris* and *P. g. marerubra* at the same level.

Acknowledgements

Many thanks to SVEN KAHLBROCK and the team of the Blue Water Dive Resort, Hurghada, to Dr. MARCO CHIAPPONI, and JANA KRATZSCH, for continued support.

References

- HEIMAN, E. (2002): Cowries of East Sinai. — 208 pp; Jerusalem (Keterpress Enterprises).
- LORENZ, F. (1992): Pleistocene Cypraeacea from the vicinity of Hurghada, Egypt. — *Schriften zur Malakozoologie*, **5**:19-41, figs. 1-23, pls. 6-10.
- LORENZ, F. (1999): Revision of the living *Pustularia* (Mollusca: Gastropoda: Cypraeidae) with the description of *P. chiaponii* n.sp. — *La Conchiglia*, **31** (292):11-28, figs. 1-43.
- LORENZ, F. & HUBERT, A. (2000): A guide to worldwide Cowries, 2nd revised and enlarged edition. — 584 pp., 52. + numerous unnumbered + 19 figs., 128 pls; Hackenheim, Germany (ConchBooks).
- RAYBAUDI, L. (1993): World Shells specialized catalogue: genus *Pustularia*. — *World Shells*, **5**: 69, fig. 166g.
- SCHILDER, F. A. & SCHILDER, M. (1938-1939): Prodrome of a monograph on living Cypraeidae. — *Proceedings of the malacological Society of London*, **23** (3): 119-180 [1938]; **23** (4):181-231 [1939].
- SCHILDER, F. A. & SCHILDER, M. (1952): PH. DAUTZENBERG'S collection of Cypraeidae. — *Institut Royal des Sciences Naturelles de Belgique, Mémoires* **45**:1-243, pls 1-4.

Address of the author:

Dr. FELIX LORENZ
Friedrich-Ebert-Straße 12
35418 Buseck-Beuern
Germany
E-Mail: felix@cowries.info

Fig. 1: (page 54)

- 1st row: left, *P. globulus marerubra* n. ssp., holotype; right, *P. globulus marerubra* n. ssp., Paratype 1.
- 2nd row: left, *P. globulus marerubra* n. ssp., Paratype 2; right, *P. globulus marerubra* n. ssp., Paratype 3.
- 3rd row: left, *P. globulus marerubra* n. ssp., Paratype 5; right, *P. globulus marerubra* n. ssp., Subadult.
- 4th row: left, *P. globulus brevisrostris*, Tanzania (13.7 mm); middle, *P. globulus* cf. *brevisrostris*, La Réunion (12.6 mm); right, *P. „globulus“ giftunensis*, Holotype (14.5 mm), after LORENZ, 1992. Note the coarser, unstained teeth in *P. g. brevisrostris*, and the longer, coarser teeth of *P. „g.“ giftunensis*.



Fig. 1: Explanations see page 53