



## A new species of *Gibbula* (Mollusca, Archaegastopoda) from Namibia

### Una nueva especie de *Gibbula* (Mollusca, Archaegastopoda) de Namibia

Emilio ROLÁN\* and Michael L. ZETTLER\*\*

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#### ABSTRACT

A new species is described from Namibian waters and compared with the morphologically close species from the study area.

#### RESUMEN

Se describe una nueva especie de Namibia comparándola con las especies morfológicamente similares del área de estudio.

#### INTRODUCTION

The Namibian molluscan fauna is very far from being well known. Only few works with information about the molluscs of this area are known (e.g. PENRITH AND KINSLEY, 1970a, 1970b). Usually, it is thought that this fauna is mostly influenced by that of South Africa (KILBURN AND RIPPEY, 1982, STEYN AND LUSSI, 1998) due to the presence of an oceanic current from the south towards the north that obstructs the dispersion of the West African fauna.

#### MATERIAL AND METHODS

The Leibniz Institute for Baltic Sea Research from Rostock-Warnemünde, Germany, sampled the macrozoobenthos along the northern Namibian coast in 2008 with the research vessel "Maria Sybilla Merian". Triplicate benthic samples were taken with a 0.1 m<sup>2</sup> van

Vein grab at each station. Additional dredge hauls using a net mesh size of 5 mm) were taken for collection of larger, mobile or rare species. All samples were sieved through a 1-mm<sup>2</sup> screen and animals were preserved on board in 4% buffered formaldehyde. Sorting procedures were conducted at the laboratory with a stereomicroscope with 10-40x magnification. For more information on the study area and abiotic characteristics at the sampling station see ZETTLER, BOCHERT AND POLLEHNE (2009).

In this material, several samples of a species with conical form were found; since it was apparently undescribed, the purpose of the present paper is to name it.

#### Abbreviations

MHNS Museo de Historia Natural de la Universidad de Santiago de Compostela, (coll. E. Rolán),

\* Museo de Historia Natural, Campus Universitario Sur, 15782 Santiago de Compostela, Spain.

\*\* Leibniz-Institute for Baltic Sea Research, Seestr. 15, 18119, Rostock, Germany.

IOW Institute for Baltic Sea Research,  
Warnemünde,  
MNCN Museo Nacional de Ciencias  
Naturales, Madrid,

WMC collection of Werner Massier,  
Swakopmund  
ZMB Museum für Naturkunde of the  
Humboldt University, Berlin,

## SYSTEMATICS

Family TROCHIDAE Rafinesque, 1815

Subfamily TROCHINAE Rafinesque, 1815

Genus *Gibbula* Risso, 1826

*Gibbula massieri* spec. nov. (Figs. 1-14)

**Type material:** Holotype (Figs. 1-3) in ZMB (Moll. 107743). Paratypes in the following collections: MNCN (1, n° 15.05/53490, Fig. 5); IOW (3, IOW-NA-0001-3, Figs. 4, 7-9); MHNS (1); WMC (3, Figs. 6-9).

**Other material examined:** One specimen was destroyed for radular study; 25 juveniles and some fragments (IOW).

**Type locality:** Offshore Namibia south of the River Kunene, 30 m depth, 17.390° S 11.724 E (5-03-2008). Shell deposits of the brachiopod *Discinisca tenuis* (Sowerby, 1847).

**Etymology:** The specific name is after Werner Massier, from Swakopmund, Namibia, for his cooperation in the study of the material.

*Description:* Shell (Figs. 1-9) conical, solid, with spiral striation and axial threads. Protoconch (Figs. 10-11) with about one smooth whorl and a diameter of about 90  $\mu$ m. The beginning of the teleoconch has 4 spiral cords, separated by deep interspaces. The subsequent whorls have a straight profile and a similar number of cords, the last whorl having between 5 and 6 cords down to the periphery, which is well angled. Below it, towards the base, there are 7-8 cords, clearly separated, and closer near the umbilical infundibulum. In the interspaces between the cords there are numerous small very close prosocline threads. Aperture rectangular, columella slightly prosocline, straight, external border sharp, slightly undulating as a result of the endings of the spiral cords. The colour of the first whorls (corresponding to the juvenile stages) is brown on the spiral cords and white on its interspaces; in the subsequent whorls, axial dark blotches appear, alternating with white or light colour. On the base, the cords usually are alternate brown and white or cream, but this is very irregular.

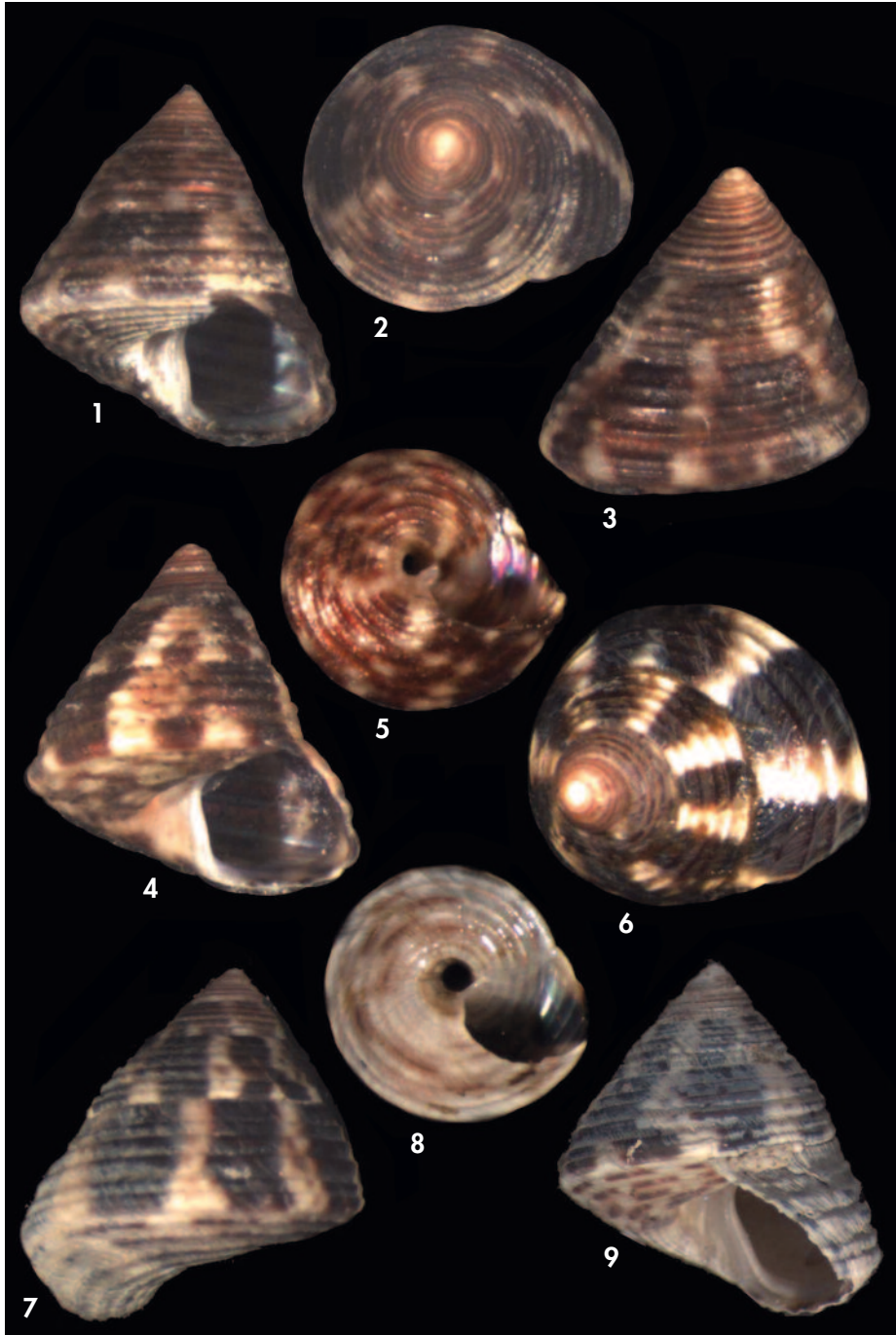
Dimensions: holotype 6.5 mm in height by 6.1 mm in diameter. The paratypes are of a similar size.

The animal, examined in specimens preserved in alcohol, is whitish with isolated dark lines on the head. There are three evident epipodial tentacles on each side. Operculum (Fig. 12) rounded, fine, semitransparent and multispiral, with a central nucleus.

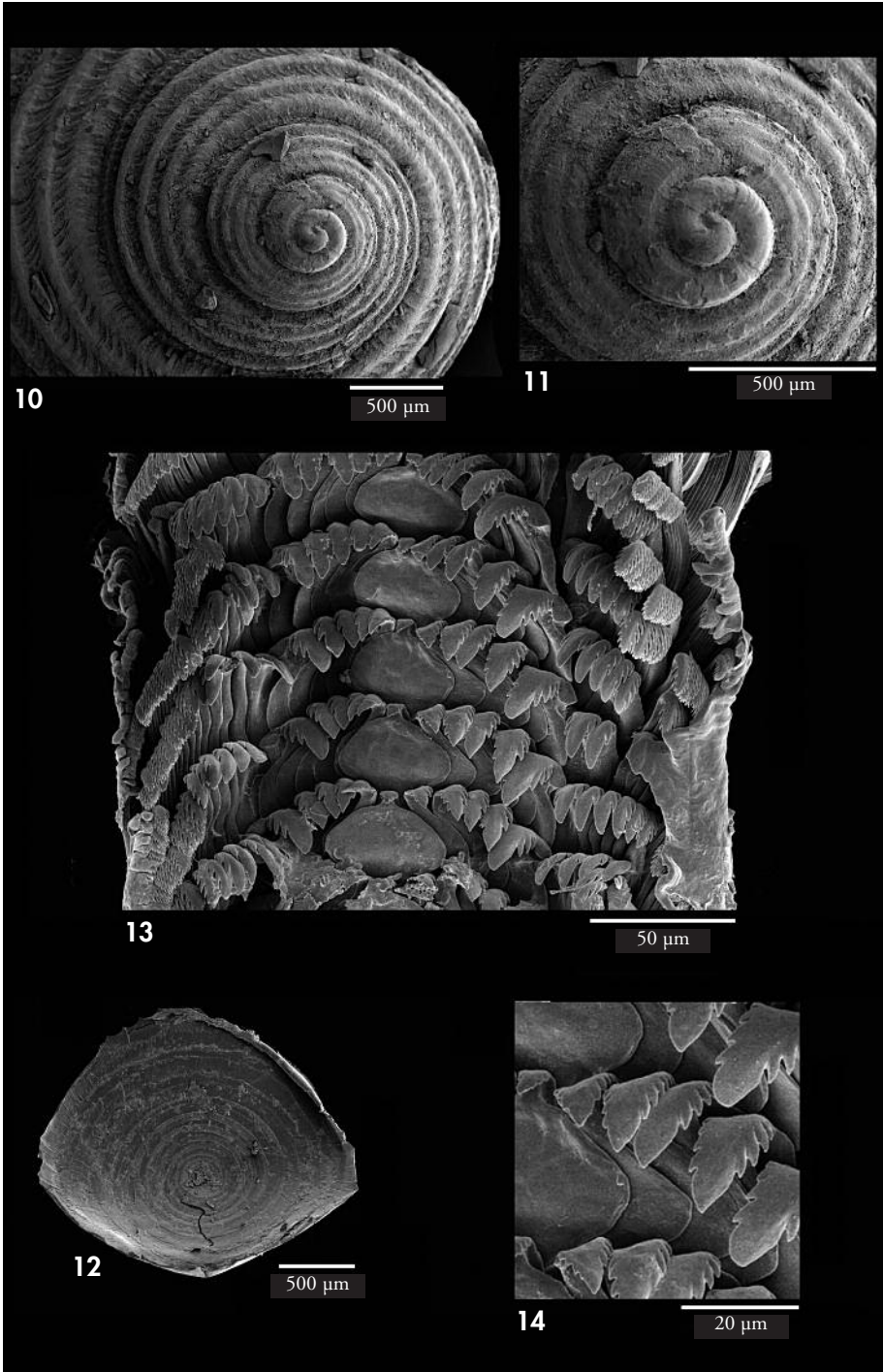
Radula (Figs. 13, 14) rather typical of the genus: rachidian tooth with a reduced shaft, which has only a few small cusps; the lateral teeth 1-5 are similar in form, increasing slightly in size outwards; all of them have a pointed apex and several lateral cusps (up to 6), the external one larger. The marginal ones number about 30 on each side, the 5-6 more internal ones are larger and have 1-2 lateral cusps; going up to the external ones, their size diminishes while the number of their lateral cusps increases.

*Distribution:* Only known from Namibia.

*Remarks:* The placement of this species in the genus *Gibbula* is based on the relatively small size of the shell, its conical form, lack of columellar denticle,



Figures 1-9. *Gibbula massieri* spec. nov. 1-3: holotype, 6.5 mm (ZMB); 4-9: paratypes; 4: 5.4 mm (IOW); 5: 5.5 mm (MNCN); 6: 5.0 mm (WMC); 7, 9: 6.4 mm (IOW); 8: 5.0 mm (IOW).  
Figuras 1-9. *Gibbula massieri* spec. nov. 1-3: holotipo, 6,5 mm (ZMB); 4-9: paratipos; 4: 5,4 mm (IOW); 5: 5,5 mm (MNCN); 6: 5,0 mm (WMC); 7, 9: 6,4 mm (IOW); 8: 5,0 mm (IOW).



Figures 10-14. *Gibbula massieri* spec. nov. 10-11: protoconch; 12: operculum; 13-14: radula.  
*Figuras 10-14. Gibbula massieri spec. nov. 10-11: protoconcha; 12: opérculo; 13-14: rádula.*

presence of an umbilicus, existence of three epipodial tentacles at each side of the body, and radula with a narrow shaft and reduced cusp in the rachidian tooth.

Among the South African species of small size we can separate the new species from the following:

*Cantharidus suarezensis* (P. Fischer, 1878) is lighter in colour, the umbilicus narrower.

*Gibbula beckeri* Sowerby, 1901, is more depressed, the whorls convex and slightly shouldered, the sculpture is weaker, the colour is also a combination of dark and light blotches but with a smaller pattern.

*Gibbula zonata* (Wood, 1828) is more depressed, with convex whorls, spiral cords in low number, and a wider umbilicus.

*Gibbula cicer* (Menke in Philippi, 1844) has convex whorls, prominent and less numerous spiral cords, the umbilicus usually closed.

*Gibbula fultoni* (Sowerby, 1889), according to the description in BARNARD (1963), has a conical form similar to that of the present new species but it has a

completely or almost closed umbilicus. The shell is also larger.

Among the Angolan species, comparison must be made with:

*Jujubinus fulgor* Gofas, 1991, which has an apparently similar shell, but is more solid, smaller, without any umbilicus and having a columellar lengthening on its lower part.

The comparison with species from other areas:

*Gibbula verdensis* Rolán and Templado, 2001 has a similar form and size, but the colour is usually lighter, the white blotches are very small and the umbilicus is reduced to a small furrow. It is endemic to the Cape Verde islands.

*Gibbula joubini* Dautzenberg, 1910 is smaller (about 4.5 mm) the peripheral border is more rounded, the dark brown blotches are most frequently opisthoclinal, the aperture is relatively smaller. This is an endemism from Senegal which has not been recorded from other countries.

The species recorded by GOFAS, PINTO AFONSO AND BRANDÃO (1985) from Angola as *Gibbula* aff. *joubini*, may be the species here described or other similar (material not examined).

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