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# A new species of *Calcimitra* (Gastropoda: Mitridae) from Namibia

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The new species *Calcimitra namibiensis* spec. nov. found on the continental shelf of Namibia is described. Shells of species of *Calcimitra* S.-I Huang, 2011 are typically 20–32 mm high, with an elevated spire and a pointed multispiral protoconch; the columella has three to four folds. Twenty-five accepted species are known of which three occur off South Africa in the SW Indian Ocean but none live in the Atlantic Ocean. When compared to the existing species, the shell of *Calcimitra namibiensis* spec. nov. has a very elongated outline, with tapered anterior margin and sharply pointed apex, relatively large aperture, glossy, light brown protoconch with 4 ½ cyrtoconoid whorls and with finely punctuated, incised spirals sculpture on the teleoconch.

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## INTRODUCTION

Several species of Mitridae and of the sister family Charitodoronidae are known from South Africa (Steyn & Lussi, 2005) and from Angola (Rolan & Ryall, 1999). An inventory of Namibian marine gastropods is ongoing following a similar exercise in marine bivalves (Zettler & Hoffman, 2025). Herein we discuss a new species of *Calcimitra* S.-I Huang, 2011 of the family Mitridae (Gastropoda). Species of *Calcimitra* have thin-walled, highly-elevated shells with a pointed apex, a multispiral protoconch with three or more whorls; the teleoconch has a spiral sculpture and a tapered siphonal canal; the columella shows three or four columellar folds (Fedosov et al., 2018). Twenty-five congeneric species are currently known (MolluscaBase 2026); all occur on the lower shelf to upper bathyal depths in the Indo-Pacific and all these species have distinct shell morphologies.

Fedosov et al. (2015; 2018) studied the molecular (DNA) and morphological characteristics of species of Mitridae and provided a new phylogeny. They also introduced many new genera, new species and name combinations. Moreover, new generic diagnoses were given.

## MATERIAL AND METHODS

This study is part of an inventory of marine gastropods from Namibia (southwestern Africa). The material was gathered using box cores during the German cruise M122 (Hebbeln et al., 2017), to the offshore of Namibia. Location data of M122 samples are given in Hebbeln et al. (2017) and Zettler & Hoffman (2025). Sediments obtained by box corers were sieved and washed using fresh water on board. The minimum mesh size used was 0.5 mm. Dried sediments were hand sorted in the Senckenberg am Meer (SaM, Wilhelmshaven, Germany). Colour imaging was done in SaM. The type material is stored in the Senckenberg Research

Institute and Natural History Museum Frankfurt (SMF, Frankfurt am Main, Germany).

## SYSTEMATICS

**Class Gastropoda Cuvier, 1795**
**Subclass Caenogastropoda L. R. Cox, 1960**
**Order Neogastropoda Wenz, 1938**
**Superfamily Mitroidea Swainson, 1831**
**Family Mitridae Swainson, 1831**
**Subfamily Mitrinae Swainson, 1831**

**Genus *Calcimitra* S.-I Huang, 2011**

Type species (by original designation): *Calcimitra kingtsio* S.-I Huang, 2011.

***Calcimitra namibiensis* spec. nov.**

Figs 1-3

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Etymology. — Named after Namibia, country of origin of this species.

Type material. — Holotype, Namibia • 1 shell; 20.7638° S, 12.8329° E; water depth 226 m; 3 Jan. 2016; M122-GeoB20515; box core in coral rubble with silty sand; SMF376638; Figs 1A–D.

Paratypes, Namibia • 1 shell; 20.7330° S, 12.8178° E; water depth 232 m; 2 Jan. 2016; M122-GeoB20511; box core in coral rubble with silty sand; SMF376639; Fig. 2 • 1 shell; 20.7636° S, 12.8313° E; water depth 219 m; 2 Jan. 2016; M122-GeoB20516; box core in coral rubble with silty sand; SMF376640; Fig. 3.

Description. – Mitriform shell; highly elevated conoidal spire with sharp apex, apical angle about 30°, five flattened whorls, weakly convex peripheral area; suture shallow, appended; umbilicus absent. Observed maximum height 17 mm, width to height ratio 0.23; aperture to shell height ratio 0.50; ultimate whorl to shell height ratio 0.65.

Protoconch multispiral, cyrtoconoidal; hemispherical nucleus; four glossy, smooth, weakly convex whorls; colour light brown; exposed height 1200 µm, width 500 µm; transition to teleoconch distinct by prosocline lip, change in colour and sculpture.

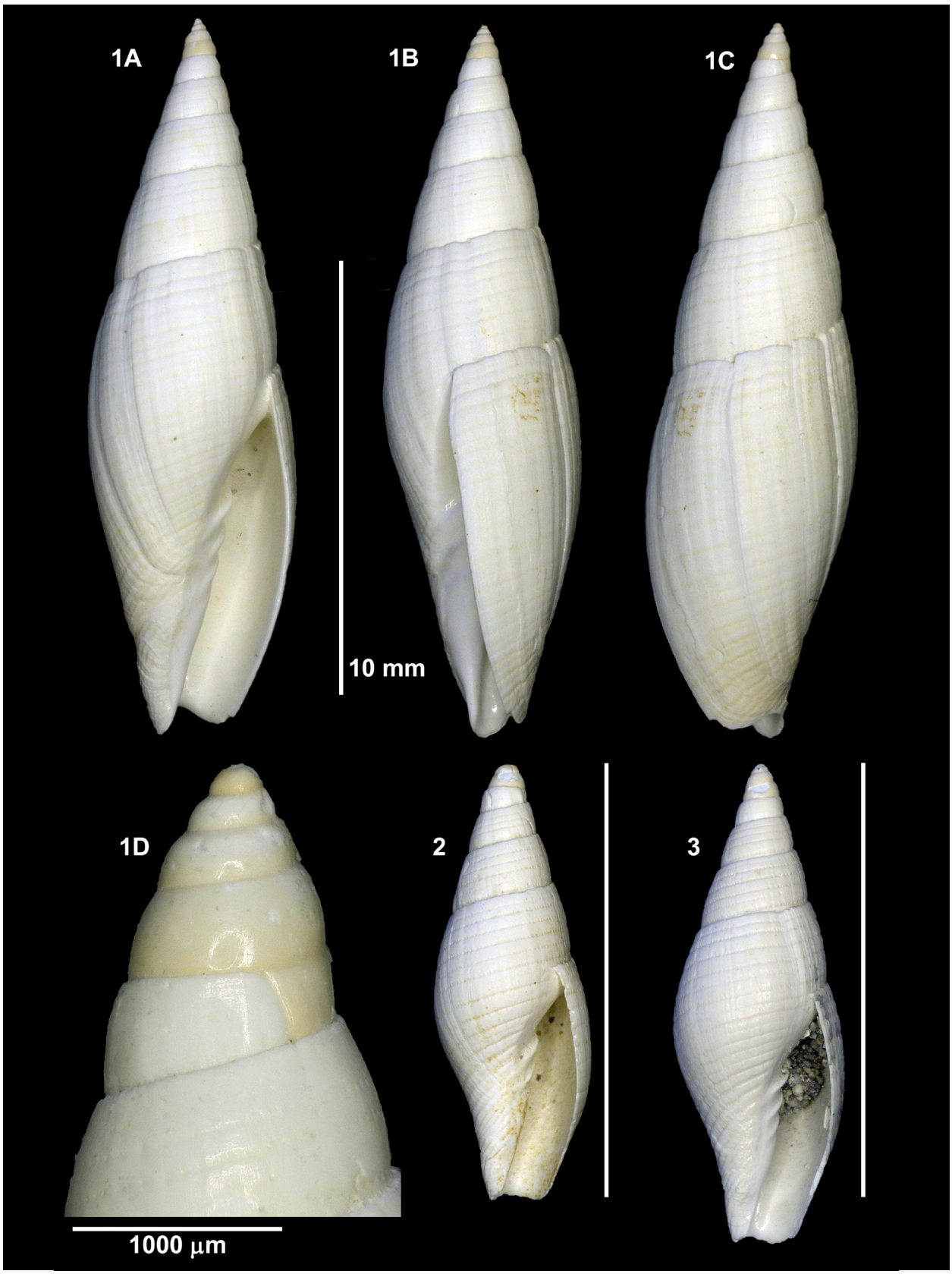
Teleoconch sculpture of spirally incised, punctuated, equidistant lines of equal strength on smooth shell face, about 27 lines on ultimate whorl; several coarse prosocline growth margins and fine growth lines. Aperture elongate; outer lip thin, sharp, prosocline; open, straight, siphonal canal; sharp posterior notch; weakly flexuous, oblique, columellar and parietal margins with three, highly-oblique, columellar plications; demarcated narrow on columellar and parietal callus; internally smooth, thin callus. Shell colour ivory white with light beige lines.

Distribution. — The species is known from three shells off central Namibia (20.7° S) in coarse coral debris with silty sand at a depth 219–232 m.

Differential diagnosis & discussion. — The shells of *Calcimitra namibiensis* spec. nov. are distinct from those of known congeners. *Calcimitra brinkae* (Salisbury & Kilburn, 1996), *C. meyeriana* (Salisbury, 1992) and *C. lussi* (Turner & Salisbury, 2007) have similar shell morphologies and all were described from empty shells off eastern South Africa (Gori, Renda & Salisbury, 2025). *Calcimitra brinkae* was found at a similar depth, and has a similar outline and sculpture to the species in the present study. However, this species is much larger (a maximum height of 46 mm), its aperture is comparatively smaller (aperture to shell height ratio well below 0.5) and it has 4–5 columellar folds (Salisbury & Kilburn, 1996; Gori, Renda & Salisbury, 2025); *C. namibiensis* spec. nov. has a maximum height of 17 mm, an aperture to height ratio of 0.50 and three columellar folds. *Calcimitra meyeriana* is similar to *C. brinkae* and *C. namibiensis* spec. nov. but it has a height of up to about 50 mm and a coarser sculpture with regular, smooth, broad cords (Gori, Renda & Salisbury, 2025). *Calcimitra namibiensis* spec. nov. is much smaller and is smooth with punctuated incised lines. *Calcimitra lussi* has a similar outline and sculpture but is much larger (up to 60 mm height), with five columellar folds and dark brown patches on the shell (Turner & Salisbury, 2007, Gori, Renda & Salisbury, 2025). All other congeneric species (Fedosov et al., 2018, Gori, Renda & Salisbury, 2025) have distinct spiral cords and have a larger shell height.

The central western Pacific *Profundimitra taylori* Fedosov, Herrmann, Kantor & Bouchet, 2018 is similar in outline and sculpture but it is limited to upper bathyal depths, the holotype has a height of 24 mm, colour is light brown and its protoconch has more convex whorls (Fedosov et al., 2018: 295-296, Figs 18A-C); *Calcimitra namibiensis* spec. nov. has an observed maximum height of 17 mm, a protoconch with weakly convex whorls, a teleoconch with flattened whorls, white shell face with thin light brown spiral lines.

Species in the genus *Isara* H. Adams & A. Adams, 1853 in the subfamily Isarinae Herrmann, Fedosov, Kantor & Bouchet, 2018, have Atlantic, and Indo-Pacific distributions. Its species have highly variable morphologies that could include *Calcimitra namibiensis* spec. nov. Three South African species, *I. aerumnosa* (Melvill, 1888), *I. aikeni* (Lussi, 2009) and *I. joostei* (Lussi, 2009), are similar in outline and sculpture to *C. namibiensis* spec. nov. (Gori, Renda & Salisbury, 2025). *Isara aerumnosa* occurs off western South Africa and has brown bands; height of up to 30 mm, aperture to height ratio of about 0.38 and rounded




**Figs 1-3.** *Calcimitra namibiensis* spec. nov., Namibia. **1A-D.** Holotype, SMF376638, M122-GeoB20515, depth 226 m, height 17 mm. **1A.** Apertural view. **1B.** Side view. **1C.** Dorsal view. **1D.** Protoconch, exposed height 1300 µm, width 1000 µm. **2.** Paratype 1, SMF376639, M122-GeoB20511, depth 232 m, height 10 mm. **3.** Paratype 2, SMF376640, M122-GeoB20516, depth 219 m, height 11 mm. Scale bars 1A-C, 2-3 = 10 mm; 1D = 1000 µm.

anterior end (Melvill, 1888); the present species is smaller, with a relatively larger aperture and tapered anterior end. *Isara aikeni* from eastern South Africa has a shiny orange-brown shell, maximum height of 35 mm, aperture to height ratio of about 0.35 and width to height ratio of about 0.45 (Lussi, 2009); the present species is smaller, with a relatively larger aperture and is more elevated, its colour is white. *Isara joostei* from eastern South Africa has a brown apex, a maximum height of 35 mm, and width to height ratio of about 0.33 (Lussi, 2009); the present species is smaller, and is more elevated, its colour is predominantly white. Four additional species in *Isara* from western Africa (*I. cornea* (Lamarck, 1811), *I. gabonensis* (Biraghi, 1984), *I. goreensis* (Melvill, 1925), and *I. nigra* (Gmelin, 1791)) all have clearly a different morphology; most have a colour pattern, with a higher width to height ratio and have thick shells. Similarly, species from the Caribbean Sea and Gulf of Mexico are morphologically distinct from *Calcimitra namibiensis* spec. nov.

## REMARKS

Our material indicated the first species of *Calcimitra* in the Atlantic Ocean, at locations that are a significant sea way distance from the distribution areas of congeneric species. Interestingly, three species from the east coast of South Africa are morphologically similar to the Namibian species. The South African and Namibian species probably form a distinct group in *Calcimitra*.

Additionally, four South African species were placed in the genus *Isara* on the basis of their shell morphology (Fedosov et al., 2018) and their shells all fit well in the group of *Calcimitra*. It can be expected that these four species of *Isara* are phylogenetically related to the four species of *Calcimitra*.

Our study is based on empty shells and, hence, important characters could not be checked for proper generic distinction. For example, the availability of radula and DNA sequences would have greatly helped in assigning genera (Fedosov et. al., 2018). Therefore, this study would have to be redone when live specimens are available to substantiate phylogenetic relationships.

The empty shells used in this study could be recent or Mid Holocene material. The environmental conditions for the species in thriving cold-water coral habitats that existed during the Mid Holocene (Hebbeln et. al., 2019; Tamborrino et al., 2019: 4,000 – 9,500 years BP) were probably far more beneficial to neogastropod carnivores than those under the hypoxic conditions at present (Zettler, Borchert & Pollehne, 2013).

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