

## A new species of *Gemmula* (Caenogastropoda Turridae) from Brazilian deep waters

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### Abstract

*Gemmula mystica*, a new species of the Brazilian deep waters is described based on shell, operculum and radula, being the first record of this genus in this geographical area. The species is characterized by short canal, tall spire and broad protoconch.

### Introduction

The turrid genus *Gemmula* Weinkauff, 1876 [type species *Pleurotoma gemmata* Hinds in Reeve, 1860, by subsequent designation by Cossmann, 1896] is characterized by whitish shell, bearing cancellate-nodular sub-sutural cord, giving, as noted Abbott (1974: 266), a coglike appearance. Another common feature of the genus is the deep water occurrence.

A total of 49 Recent species have been reported to the genus (Tucker, 2004), however, the fossil occurrence is more expressive (181 species according to that author). In the West Atlantic, a single species has been reported, *Gemmula periscelida* (Dall, 1889) (Abbott, 1974; Merlano & Hegedus, 1994; Tucker, 2004), distributed from North Carolina to Colombia, in depths from 150 to 600 m.

During the development of a project on the Conoidea phylogeny (Simone, 2000), samples of several turrids have been studied, some of them resulted by oceanographic projects of the Instituto Oceanográfico, University of São Paulo. Some samples belonging to the genus *Gemmula* were studied, revealing a single new species. As this new species is part of that project, a full investigation on the anatomy was performed, and will appear in that study. This paper refers to the formal description of the species, based on hard structures.

Abbreviation of institution are as follows: ANSP, Academy of Natural Sciences of Philadelphia, Pennsylvania, USA; MNRJ, Museu Nacional da Universidade Federal do Rio de Janeiro; MORG, Museu Oceanográfico

Eliézer Rios da Fundação Universidade de Rio Grande; MZSP, Museu de Zoologia da Universidade de São Paulo.

### Systematics

***Gemmula mystica***, new species  
(Figs. 1-8)

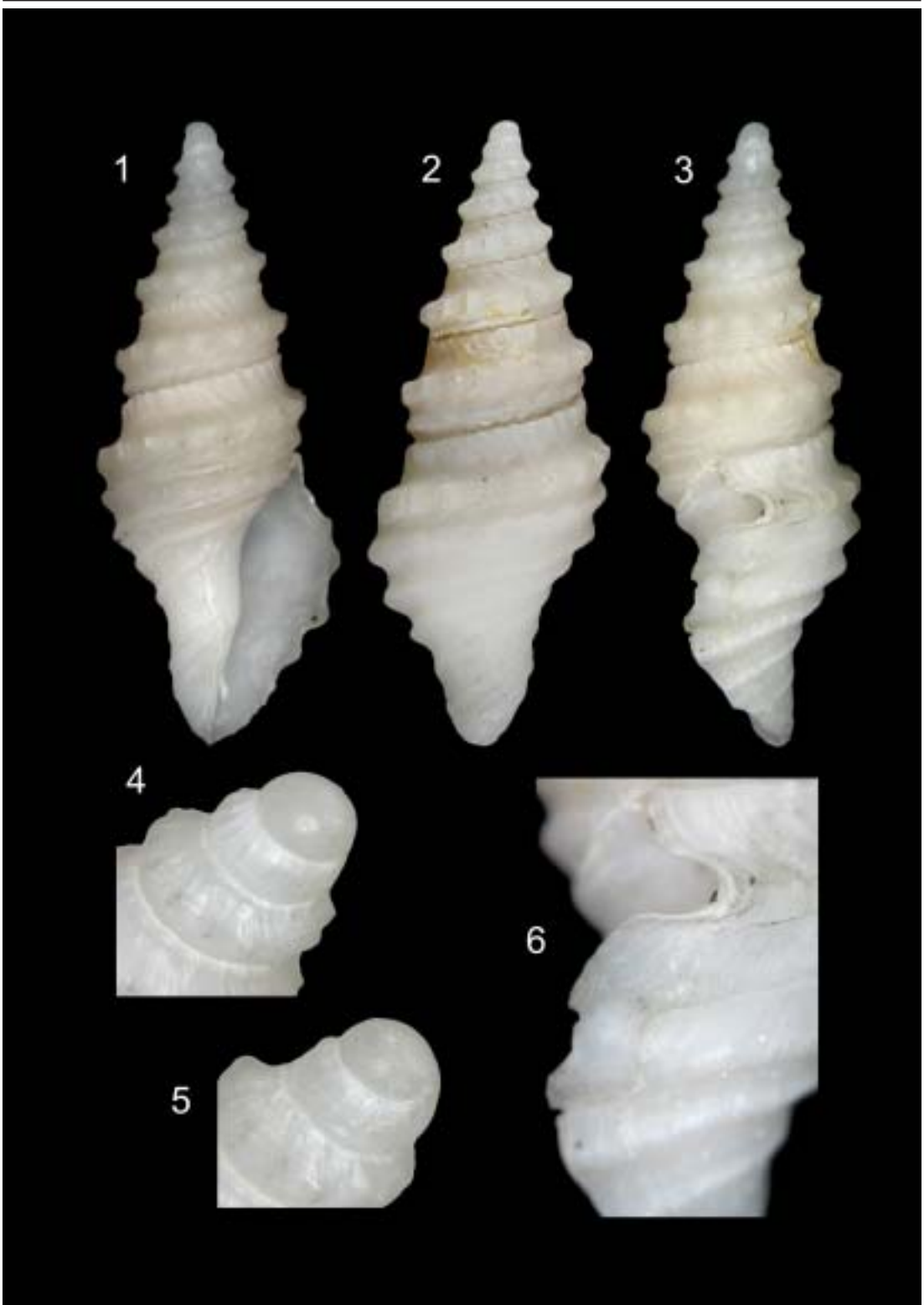
**Types:** Holotype MZSP 32766 (Figs. 1-6). Paratypes: MZSP 32765, 127 specimens MORG, 2 specimens, MNRJ, 2 specimens, ANSP, 2 specimens, all from type locality. BRAZIL. **São Paulo**; off Ubatuba, 24°41'01"S 44°18'05"W, 510 m depth, MZSP 32769, 2 specimens (RV. W. Besnard, sta. 5363, 07/xii/1988).

**Type locality:** BRAZIL. **São Paulo**; off Ubatuba, 24°48'08"S 44°29'07"W, 530 m depth (RV. W. Besnard, sta. 5362, 07/xii/1988).

**Diagnosis:** Shell with spire long, about same body whorl length, canal shorter than 1/6 of remaining shell length, two spiral cords nodular, being sub-sutural cord weak and other tall, forming almost a carina. Protoconch broad, tall, about 1/6 of body whorl width.

### Description

Shell (Figs. 1-6). Size about 20 mm, turritiform to fusiform. Color pure white. Protoconch (Figs. 4, 5) smooth, glossy, with about 1/6 of body whorl width, of 1 whorl. Limit protoconch – teleoconch weakly clear (Fig. 5). Teleoconch with about 6-7 convex whorl; suture well marked by a shallow, thin furrow. Spire teleoconch whorls with a median carina, tip possessing an interrupted cord, forming tall,



Figs 1-6, Holotype MZSP 32766 shell: 1-3, frontal, dorsal and profile views; 4-5, details of protoconch and first teleoconch whorls, two views; 6, detail of outer lip, outer view. Total shell length = 20.8 mm.

uniformly sized nodes projected outside (Figs. 1-3). Each node with almost squared base and flat tip, disposed axially; between nodes a space equivalent to their own width. Another low, weak interrupted cord running just inferior to suture, with about same number of nodes than main cord, each node low, narrow, longer axially. Between both interrupted cords a rounded concavity. Between main interrupted cord and inferior suture a straight, vertical area. Spire angle approximately 30°. Body whorl with about same spire length; sculpture of superior region similar and as continuation from that of spire whorls; sculpture of inferior region with 4-5 spiral cords, each cord with triangular profile, separated from each other by wide concavity. Aperture elliptical. Outer lip thin; anal notch close to suture, deep, in level of main interrupted cord (Fig. 6). Inner lip weakly concave, smooth, callus thin. Canal relatively long, about 1/6 of remaining shell length.

**Operculum:** (Fig. 8). Corneous, elliptical, occupying entire aperture. Nucleus terminal, inferior. Outer sculpture weak concentric undulations.

**Radula:** (Fig. 7). Pair of harpoon-like teeth per row. Each tooth long and tall. Base weakly broader. Mostly cylindrical, uniform width along its length. Tip sharp pointed, aperture narrow, longitudinal, weakly barbed in inferior region of this aperture. Another barded projection in

opposed region of aperture, at some distance from tip.

**Measurements:** (in mm). Holotype = 20.8 by 8.2; Paratypes MZSP 32765 = 1) 18.0 by 7.4; 2) 18.9 by 7.5; 3) 17.3 by 7.3.

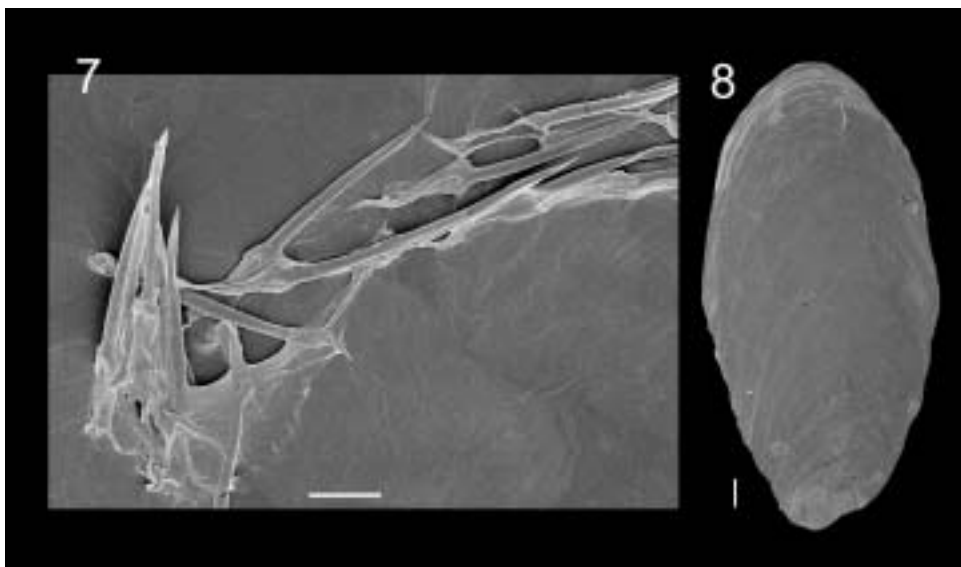
**Distribution:** Off Ubatuba, São Paulo, Brazil

**Habitat:** Sandy, from 510 to 530 m depth.

**Material examined:** Types.

**Etymology.** The specific epithet refer to Latin word *mysticus*, meaning mysterious, an allusion to the deep water habitat and the weak knowledge on it.

**Discussion:** *Gemmula mystica* is peculiar for the genus in having a shorter canal and a shell fashion somewhat turritiform (Figs. 1-3). Mostly, the *Gemmula* species have a fusiform shell shape, with a longer canal, resembling the fasciolariid shape. These characters easily differentiate *G. mystica* from *G. periscelida*, the single co-generic species in the western Atlantic (Abbott, 1974; Merlano & Hegedus, 1994). The *Gemmula* species are also normally bigger, reaching 30-40 mm in length; however, *G. mystica* is normally shorter than 20 mm. In the western coast of South America, the single known *Gemmula* is *G. hindsiana* Berry, 1958 (Keen, 1971: 707), in such *G. mystica* differs



Figs. 7-8: *Gemmula mystica* SEM. 7, Radular teeth; scale = 50  $\mu$ m; 8, Operculum, outer view; scale = 200  $\mu$ m.

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in having shorter spire and canal, and in being the canal wider.

The shell shape of *G. mystica* approaches it from the subgenera *Turridrupa* Hedley, 1922, and *Eugemmula* Iredale, 1931 (Wenz, 1938). However, no subgeneric attribution was given to the presently described species because of the lack of clear definition of each one, being preferred here a more conservative approach.

### Acknowledgments

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