

## *Bela manolae*, a new species from São Tomé Island (Prosobranchia, Mangeliidae)

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**Keywords:** GASTROPODA, PROSOBRANCHIA, MANGELIIDAE, *Bela*, West Africa, São Tomé Island, new species.

**Abstract:** A new species belonging to the genus *Bela* Leach in Gray, 1847, from the island of São Tomé, West Africa, is described, figured and compared with the most similar congeners.

**Introduction:** The genus *Bela* Leach in Gray, 1847 has been "used as a 'wastebasket taxon'... including both fossil and Recent species, embracing an extremely wide morphological variation and worldwide distribution" according to Scarponi et al. (2014), who designated a lectotype for *Bela nebula* (Montagu, 1803) and redefined the characteristics of the genus.

Valid western African species within this genus mentioned in literature dealing with the fauna of this area are scarce (Dautzenberg, 1891, 1910 and 1912; Nicklés, 1950; Knudsen, 1952; Bernard, 1984; Ardochini & Cossignani, 2004; Hernández et al., 2011), currently being limited to the above mentioned type species, together with *Bela powisiana* (Dautzenberg, 1887), *Bela oceanica* (Locard, 1892), *Bela zonata* (Locard, 1892) (usually recorded as *Bela laevigata* (Philippi, 1836)) and *Bela menkhorsti* Van Aartsen, 1988, all of them only occurring in the northern part of this region, especially the Canary Islands and Morocco, *B. menkhorsti* reaching south to Guinea Bissau; *Bela nuperrima* (Tiberi, 1855), which some authors include in genus *Mangelia*, is widespread southwards to Angola; formerly *Brachycythara* species, *Bela atlantidea* (Knudsen, 1952), is also widespread, while *Bela beatriceae* (Mariottini, 2007), is mentioned only for the northern part of this

region (see Mariottini, 2007). Other species that occur extensively along the West African coasts and usually included in this genus have been moved to the genus *Sorgenfreispira* Moroni, 1979 (Mariottini et al., 2015), like *Sorgenfreispira africana* (Ardochini, 2004), *Sorgenfreispira ardochini* (Mariottini & Oliverio, 2008), *Sorgenfreispira brachystoma* (Philippi, 1844) and *Sorgenfreispira exilis* (Ardochini, 2004).

As we wrote in the description of another endemic species from São Tomé Island (Horro, Gori & Rolán, 2010), the introduction of scuba diving as a sampling technique in places characterised by the abundance of endemic species, and where it had scarcely been used before, has led to the availability of material from deeper waters which were badly studied so far, allowing for the discovery of interesting new species. Once again, while studying the material collected by the second author by scuba diving at that island, the authors have identified a new species of the genus *Bela* Leach in Gray, 1847, which is described and illustrated in this work.

### Abbreviations:

- MNHN:** Muséum national d'Histoire naturelle, Paris  
**MNCN:** Museo Nacional de Ciencias Naturales, Madrid  
**MHNS:** Museo de Historia Natural, University of Santiago de Compostela, Spain.  
**CFD:** Collection of Francisco Deniz, Canaries  
**CJH:** Collection of Juan Horro, Vigo, Spain  
**CPR:** Collection of Peter Ryall, Maria Rain, Austria  
**CSG:** Collection of Sandro Gori, Livorno, Italy  
**CACTI:** Centro de Apoyo Científico y Tecnológico a la Investigación, Universidad de Vigo

**Systematics:**

Family **Mangeliidae** P. Fischer, 1883

Genus **Bela** Leach in Gray, 1847

Type species (by subsequent designation) *Murex nebula* Montagu, 1803 (Scarponi et al. 2014).

***Bela manolae*** sp. nov.

Figs 1A-C, 2A-D

**Type material: Holotype** (Fig. 1A) in MNHN-IM-2000-33709. **Paratypes:** One paratype (Fig. 1B) in MNHS and other paratype (Fig. 1C) in CSG, from the type lot. Three other paratypes from Lagoa Azul, Fundão, São Tomé, 00°24'67.8"N, 06°37'42.3"E, 36 m, on dead *Tubastrea aurea*, in the following collections: one in CPR, another in CFD and one more in CJH.

**Other material examined:** Only known from the type material.

**Type locality:** Off São Tomé city, 00°25'50.6"N, 06°46'34.7"E, 35 m, on concretions of *Lithotamnion corallioides*.

**Description:** Shell rather small (less than 13 mm in height), biconical, elongate-fusiform, solid. Protoconch multispiral, dome shaped, with 3–3.5 strongly convex whorls, first 1.5–2 whorls smooth, other whorls reticulated with oblique opisthocline axial costae crossed by spiral ribs, which are a little narrower. Under high magnification microtubercles can be observed in the lower protoconch whorl. Diameter of protoconch about 700–750 µm and its colour is light brown. Protoconch-teleoconch transition not well-marked. Teleoconch with 5 whorls, with rounded convex sides, sutural ramp slightly concave; the last whorl corresponds to more than 2/3 of the shell length. Axial sculpture consisting of 9–10 very prominent, slightly opisthocline, rounded axial ribs, which are regularly spaced, with similar-sized interspaces, reaching from suture to suture on the spire and only fading out at the lowest part of the base. Spiral sculpture of numerous, very fine threads that densely alternate with bigger interspaces; the subsutural thread shows well-marked axial denticles. At higher magnification, it can be observed that each interspace consists of several (up to five) rows of tiny, rounded granules, each one linked axially to the upper and lower thread by a very fine connection. Aperture narrow, ovate, 40–50% of the shell height. Siphonal canal short, narrow, and open. Outer lip thin or with varices, according to the stage of growth, and depending on whether the lip

coincides with an axial rib or an interspace. Anal sinus marked, arcuate on shoulder slope.

Shell colour white, with a dark brown subsutural line and a paler brown band on the lower half of the last whorl, with a similar dark brown line in its upper limit, and a similar dark spot on the outer lip. This line is variable in the intensity of its colour. The rest of the shell is white.

**Dimensions:** The holotype is 8.2 mm in height x 3.3 mm in diameter; the larger paratype measures 10.4 mm in height, having the first whorls broken.

**Animal:** Not studied.

**Distribution:** Only known from the two mentioned localities in São Tomé Island, from which we suppose the species to be endemic, as it happens with many species from that island. As far as we know it has not been found in the nearby Príncipe Island; however, the material from Príncipe that is available for study, from similar depths, has been scarce so far.

**Remarks:** Although the generic assignation of this new species to the genus *Bela* must be considered as tentative due to the lack of soft parts, it seems clear from a conchological perspective, following Scarponi et al. (2014), because it has all the typical features of the genus: "small shell (height < 15 mm) with protoconch whorls smooth, except for the last, with low, curved axial ribs, are overrunning by a few rows of obsolete spiral elements forming swollen tubercles at the intersection. The teleoconch is more or less fusiform with the spire whorls of medium convexity, hence giving the spire a conical profile. On the teleoconch, the axial sculpture is predominant and extending between the sutures. The aperture is lanceolate, elongated, with a thin outer lip smooth inside. The siphonal canal is short and the anal sinus is shallow and placed on the subsutural ramp"

The only close species is *Bela beatriceae* (Mariottini, 2007), which has a similar colouration, a similar overall appearance and characteristics that suggest a close relationship. Anyway, *Bela manolae* sp. nov. can be separated from it by means of the following characteristics:

-protoconch: the sculptured lowest whorl has 5 cords, while *B. beatrice* usually has 6–7.

-higher number of axial ribs (7–8 in *B. beatriceae* and 9–10 in *B. manolae*) with narrower interspaces between the ribs.

-in the new species the ribs have the subsutural part straight for a very short space, while in *B. beatrice* this part is longer.

-the whorls are more convex, giving *B. manolae* a wider, less conical profile.  
 -the ribs in the last whorl in *B. manolae* reach a lower part towards the base  
 -the ratio height/width is a bit smaller in *B. manolae*; the ratio of the height to the length of the aperture and of the last whorl is smaller.  
 -microsculpture: it is rather similar, but in *B. manolae* there are more small filets between each two larger ones in the lower part of the last whorl.  
 -colour: *B. beatrice* has a paler colour, being white in juvenile and subadults (Mariottini, 2007). The colour of *B. manolae* sp. nov. is darker with a darker line in the lower part of the band on the last whorl. Besides, in the suture of the previous whorls there is always a dark brown band.

**Etymology:** Named after Manola, the wife of the second author.

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## Plate 1:

### A-C: *Bela manolae* sp. nov.

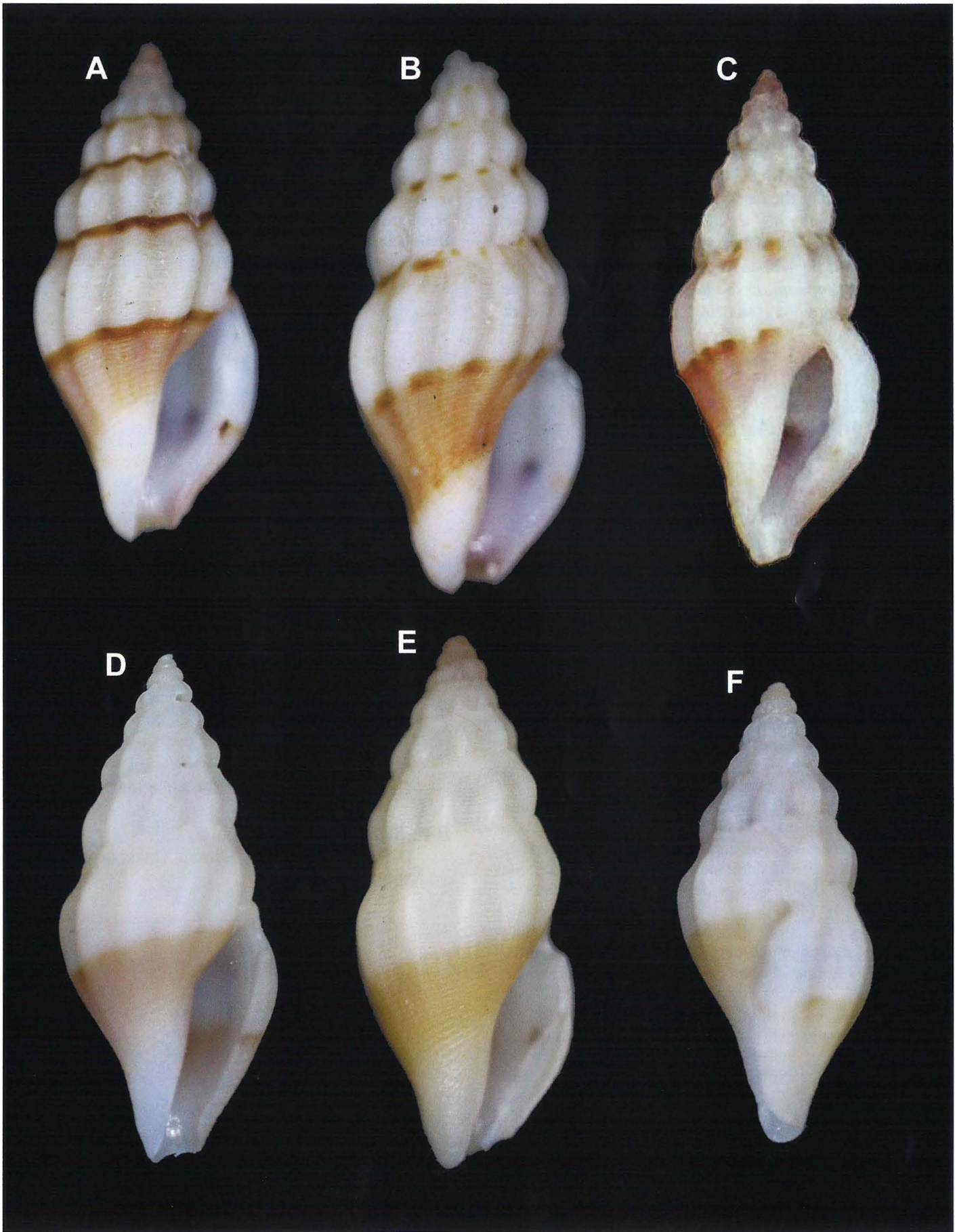
**A:** Holotype, 8.2 mm, MNHN, São Tome City, São Tome I.

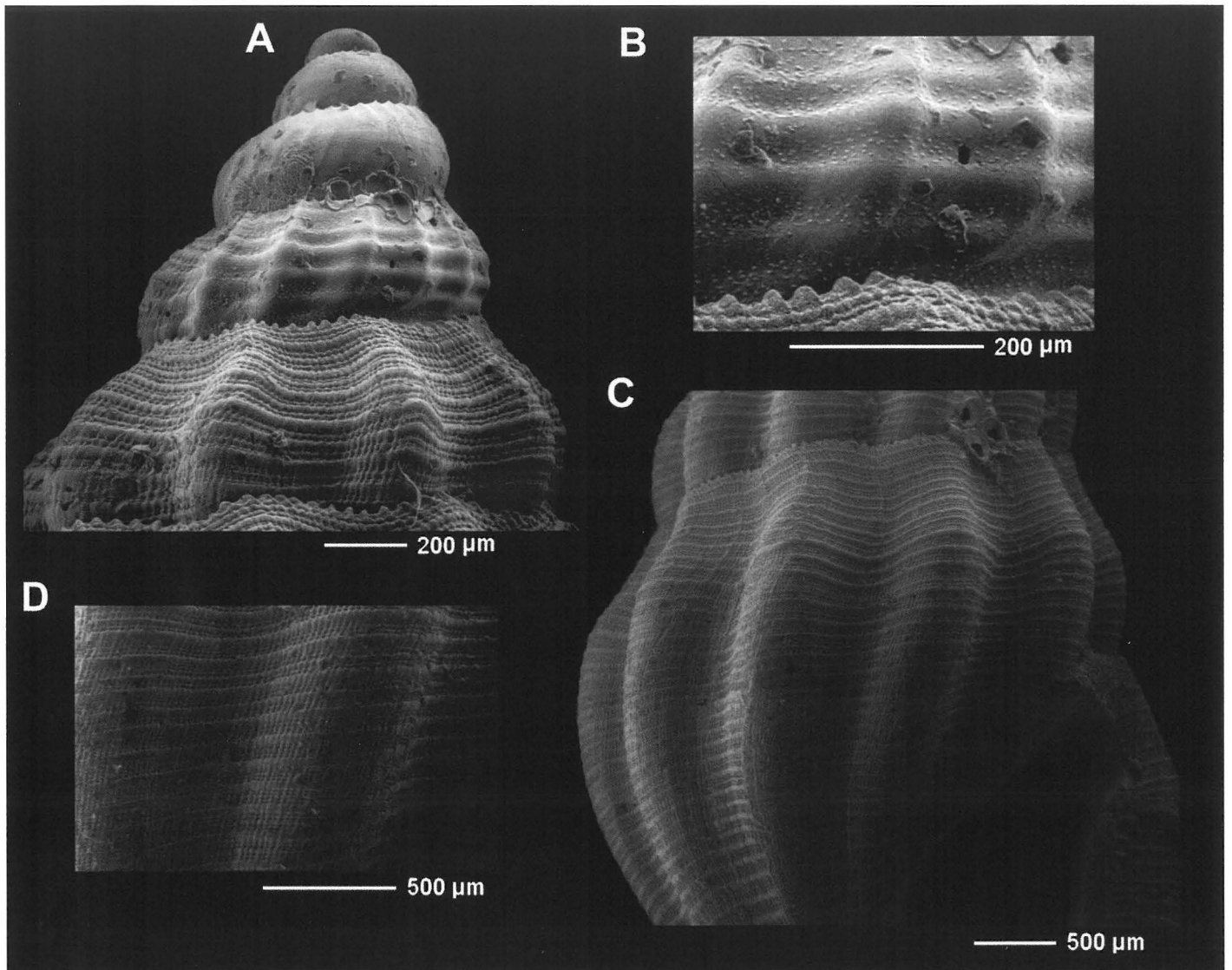
**B:** Paratype 10.4 mm, MHNS, same locality.

**C:** Paratype 7.9 mm, CSG, same locality.

### D-F: *Bela beatriceae* Mariottini, 2007

**D-F:** shells, 8.5, 9.2, 7.8 mm. Dakkla offshore, 50-80 m. CFD.





**Plate 2:**

**A-D:** *Bella manolae* sp. nov.

**A:** apex and protoconch

**B:** microsculpture of the lower whorl of the protoconch

**C-D:** microsculpture and detail.