

***Conus bulbus* Reeve, 1843**

Published in Conch. Icon. 1 (*Conus*): pl. 30, sp. 169, (published Nov), (1844, Proc. Zool. Soc. Lond. pt. 11, no. 130: p. 171, not figured, published Jun).



Lectotype in BMNH, (24 x 14 mm).

The bulb-root Cone. Shell rather stoutly turbinated, solid, rounded at the upper part; white, longitudinally streaked with brown, streaks irregular, obliquely waved, spreading into each other at top and bottom; spire short, apex pointed.

Reeve gave no type locality for the described form of the shell.

Reeve then added a description of an all brown form from Cabinda, West Africa found in mud from the Congo river. This locality seems too far north to be considered the type locality and was corrected by Rolán & Röckel, 2000 to Binga Bay, Angola.

Publications such as Walls, 1979 considered *C. bulbus* as a complex of forms which today would be considered *C. musivus*, *C. naranjus*, *C. zebroides*, *C. tenuilineatus*.

Fernandes & Röckel 1982,

The publication refined the definition of *C. bulbus* but continued to include *C. musivus* as a synonym.



12. *Conus bulbus* Reeve 1843 (Conchologia Iconica, I (Conus): Pl. 30, sp. 169).

= *Conus musivus* Trováo, 1975

= *Conus tevesi* Trováo, 1978 (= Nov. Nom. for *C. musivus*).

Essential characteristics: Small, light, pyriform or conical shell. Sides of body whorl nearly straight, upper part, including shoulder, rounded. Spire low or moderately elevated with straight or concave sides. Surface smooth but not glossy. Near base some spiral grooves. Ground colour milk white with dark brown axial streaks (typical), merging often in spiral rows of dashes and dots. *Conus tevesi* is an individual form of *C. bulbus*. Inside white, juvenile specimens sometimes with violet hue.

Animal: Colour dark creamy with black dots. Periostracum yellow and transparent.

Habitat: Low tide to 2 m down on rocks in small crevices, They live in colonies with more than 12 specimens.

Locality: From Caota (South Angola) up to Santa Maria Bay in the North. Sympatric with *C. zebroides*, *C. naranjus*, *C. africanus*, *C. lucirensis*, *C. tabidus*, *C. ermineus*, *C. obtusus*, *C. fuscolineatus*, *C. guttatus*, *C. albuquerquei* and *C. pulcher*. Common.

Similar species: *C. africanus* is violet inside with irregular dashes and short spiral lines on the surface. *C. lucirensis* uniformly dark at shoulder and base, with very regular brown spiral lines in between.

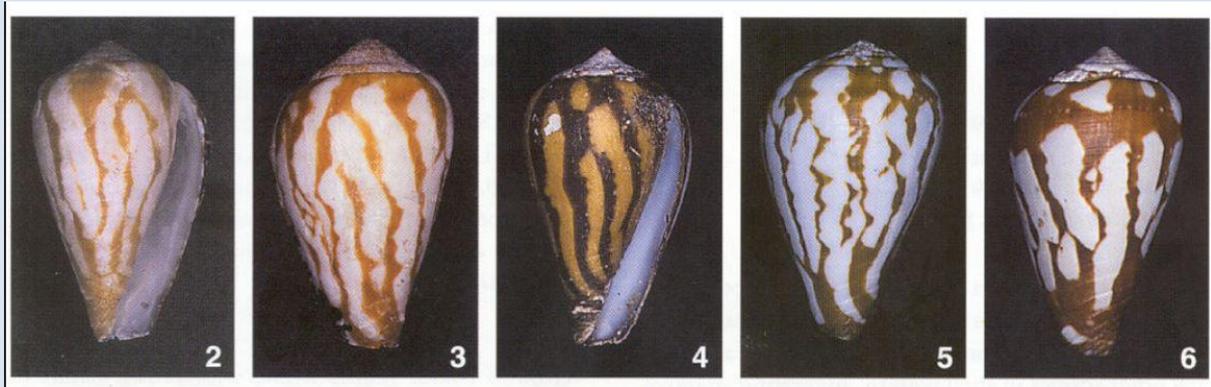
Size of pictured specimens: 20 mm, 18 mm, 22 mm, 22,5 mm.

Comment : Some of the features associated with *C. musivus* are included in this description. The distribution range is possibly stated wrongly since Caota is north of Santa Maria. The specimen pictured on the right would not be interpreted today as *C. bulbus*.

Rolán & Röckel, 2000

Conus bulbus Reeve, 1843 (Figs. 2-6)

Conus bulbus Reeve, 1843. Conch. Icon., 1, Conus, 1843: pl. 30, sp. 169. (1844, Proc. Zool. Soc. London, 11: 171).



Figures 2-6. *C. bulbus*. 2-3: lectotype, 24.0 mm (BMNH); 4: Baia Binga, 24.6 mm (CER); 5-6: Caota Bay, 20.0 and 17.5 mm (SMNS).

Other material examined: Benguela Bay; Caota Bay; Baia Azul; Baia Binga; Santa Maria.

Type locality: "Cabinda, West coast of Africa (found at the depth of five fathoms in soft mud, washed down by the waters of the Congo)". This locality is probably erroneous, there are no recent reports from this and neighbouring localities. We consider shells from Baia Binga as most similar to the type and thus Baia Binga is herewith designated the type locality.

Shell description: Small, moderately light. Last whorl broadly and ventricosely conical, sometimes pyriform. Outline convex at ad apical third, almost straight below. Left side slightly concave near base. Aperture wider at base than near shoulder. Shoulder rounded. Spire of low to moderate height, outline straight to sigmoid. Teleoconch sutural ramps flat to convex, with fine spiral striae. Last whorl almost smooth, with about 10 spiral ribs at base.

Ground colour white to bluish-white. Last whorl and spire with dark brown axial flames and streaks, occasionally converging at base and shoulder. Density as well as width of the axial streaks variable. Aperture light, sometimes translucent and with a collabral brown band.

Periostracum orange and translucent.

Shell morphometry:

L 16-25 mm

RD 0.63-0.71

RSH 0.07-0.19

PMD 0.66-0.71

RW about 0.05 g/mm

Description of animal: Animal dark cream with black spots (ROCKEL & FERNANDES, 1982a). Penis small and narrow (Figs. 97-98). Operculum small (Fig. 99).

Radula: In radula sac 58-63 teeth. Tooth (Fig. 120) of typical vermivorous type, middle sized. Apical portion shorter than half DR. Denticles coarser in upper part of saw, usually starting within a single row, then arranged into 2, following smaller and in a single row. Basal angle of saw about 45°. Blade barely prominent, covering near 80% of apical portion.

Type material: Lectotype (Figs. 2-3) designated and depicted by COOMANS, MOOLENBEEK & WILS (1982, fig. 292), in BMNH (24 x 14 mm).

Radula morphometry:

(n = 10)

D 15-29

ABS about 45°

LC/DR 40-59

DR/PA 1.91-2.20

Distribution: populations in the southern area approach other species in shell pattern, suggesting adaptive convergence. *C. bulbus* is sympatrically living with the non endemic species and with *C. neoguttatus*, *C. variegatus*, *C. zebroides*, *C. carnalis*, *C. fuscolineatus*, *C. musivus*, *C. naranjus*, and *C. albuquerquei*.

Habitat: Low tide to 2 m down on rocks in small crevices. Living in colonies with more than 12 specimens (ROCKEL & FERNANDES, 1982a).

Discussion: *Conus bulbus* is the oldest described taxon for Angolan *Conus* and can easily be distinguished from hitherto described species. There are some populations with similar patterns which possibly are conspecific with *C. bulbus*; further studies on their taxonomical status are necessary.

Note: Rolan & Rockel in their description of *C. musivus* highlight the similarity to *C. bulbus*.

We provisionally accept the validity of *C. musivus*, since near the type locality of *C. musivus* typical patterned specimens of *C. bulbus* have been collected. If *C. bulbus* and *C. musivus* are the same species, the distribution of the morphs would be irregular: In the Santa Maria-Limagens area *C. musivus* predominates, while it does not appear on the coast from Benguela to Limagens.

Comment: In a large Limagens sample tested recently, over 95% of the specimens were clearly of a *C. musivus* form but some 5% of the specimens would be very difficult to separate between *C. musivus* and *C. bulbus*.

Iconography of West African cones. This publication does not address any differences or give a comparison with *C. musivus*.



A wide range of specimens is illustrated from Benguela to Santa Maria with sizes from 20mm to 27mm.



Paul Kersten collection.



Azul 21mm GM



Caota 20mm GM



Conchas (aff. *bulbus*) 20mm GM



Caotinha 21mm Atoll shells (www.atollseashells.com)

DNA testing: No results are recorded for *C. bulbus*.

Page last updated 13 May 2019.