

Conus tenuilineatus Rolán & Röckel, 2001



Specimen 1-3 from Baía do Binga; specimen 4 from Canoco

Type material: Holotype (Figs. 1-2) in MNCN (15.05/44374) 26.7 x 14.5 mm.

Other material studied: Angola: Baía do Binga, Baía do Canoco, Baía de Santa Maria, Caoco (Benguela).

Type locality: Baía do Binga, Angola.

Etymology: The name is derived from the shell-pattern.

Shell description: Small to moderately small, moderately solid. Last whorl ventricosely conical. Outline convex at adapical third, almost straight below. Aperture slightly wider at base than near shoulder. Shoulder subangulate. Spire of low to moderate height, outline usually slightly convex. Teleoconch sutural ramps convex, with numerous spiral striae. Last whorl smooth and dull, with some broad and weak spiral grooves at base.

Ground colour of shell white or light brown tinted with numerous wavy or straight, brown, close-set (10/cm up to 40/cm) hair-lines from spire to base, flowing together at shoulder and base, occasionally punctated and forming traces of a spiral-band at the central area. Base dark brown, aperture white. Specimens from Santa Maria and Canoco may have light bluish-white ground colour and a light violet aperture with two white bands at centre and shoulder.

Periostracum: Brown, transparent.

Shell morphometry:

L18-29mm

RD 0.54-0.61

RSH 0.09- 0.14

PMD 0.76- 0.82

RW 0.09- 0.14 g/mm

Description of the animal: Animal not available for study although the radula was obtained from dry soft parts.

Radula: In radula sac 48-58 teeth. Tooth of a vermivorous type, relatively wide (Fig. 21). PA scarcely larger than half DR; S narrow, with only a single row of D, which are about 20 in number, being free of them on its upper part. F is covering near 80%.

Radula morphometry: (n=4)

D 19-21

ABS 30-40deg

LC / DR 38-43

DR/PA 1.93-1.98

Distribution: Baia do Binga, Baia de Canoco, Baia de Santa Maria, Benguela, and Caota. The affiliation of the specimens from Piambo to *C. tenuilineatus* is questionable.

Habitat: 1-3 m, buried in sand under stones. *C. tenuilineatus* lives sympatrically with *C. bulbus*, *C. neoguttatus*, *C. variegatus*, *C. carnalis*, *C. zebroides*, *C. nobrei*, *C. musivus*, *C. naranjus*, *C. albuquerquei*, *C. micropunctatus*, and *C. trovaoi*.

Discussion: The specimens of *C. tenuilineatus* from Canoco and Santa Maria differ from the typical specimens in their slightly violet ground colour as well as in the violet colored inside of the aperture. Those from Caota may have the axial lines less evident. We consider all of them local variants of the same species. The specimens from Piambo show certain similarities in shell pattern, but their taxonomical status remains doubtful, considering their living space is far from the typical specimens; we cannot exclude the possibility that they belong to another species.

C. tenuilineatus is similar to the sympatric living *C. zebroides* in its colour- pattern. The latter species has a larger size (28-51 mm vs. 18-29 mm) and a broader last whorl (0.64-0.70 vs. 0.54-0.61). The axial pattern of *C. zebroides* is composed of distant instead of close-set uninterrupted axial streaks instead of hairlines. The tooth of *C. zebroides* (see ROLÁN AND RÖCKEL, 2000, fig. 124) is more elongate, relatively smaller (LC/DR 51-97 vs. 38- 53), narrower and its DR/ PA higher (2.0- 3.6 vs. 1.93-1.98).

Other similar species are *C. naranjus* and *C. cepasi*. *C. naranjus* can be distinguished by its different shape (RD 0.62- 0.69 vs. 0.54-0.61, PMD 0.68-0.76 vs. 0.76- 0.82), the orange colour and the pattern, consisting of punctated axial lines. Like *C. naranjus*, *C. cepasi* has like *C. naranjus* a broader RD (0.64-0.70 vs. 0.54-0.61) and a smaller PMD (0.68-0.77 vs. 0.76-0.82), has a larger size (up to 50 mm), and an orange colour. *C. naranjus* and *C. cepasi* additionally differ in the shape of radula tooth (see ROLÁN AND RÖCKEL, 2000, figs. 128 and 132- 133): *C. cepasi* and *C. naranjus* have radular teeth more primitive and smaller in size. In *C. tenuilineatus* the apical portion is covered by the blade of radula tooth at 77.2%, in *C. naranjus* and *C. cepasi* the apical portion is completely uncovered (%PA = 0). Also the radular teeth are different in other characters, particularly in LC/DR proportion: *C. tenuilineatus*: 40 vs. *C. cepasi*:94 and vs. *C. naranjus*: 73

Somewhat closer but still different is the radula tooth of *C. micropunctatus*. But the latter, living sympatrically in Canoco, differs conspicuously in shell morphometry and shell pattern and cannot be confused with *C. tenuilineatus*.

Iconography of West African Conidae

The only specimen illustrated is the holotype.

Monnier et al, 2018

2 specimens from Baba and Sombreiro are illustrated.



Baia do Baba would be a significant extension to the south for the species. RR2000 refers to similar shells from nearby Piambo as species aff. *tenuilineatus*.



Paratype Rolán Collection USC.

This specimen illustrates the two common colour forms, the striped pattern on the ventral side and a pattern with spiral rows of large dots and thin axial wavy lines on dorsal side.



C. tenuilineatus paratype
Röckel Coll. Baia Binga 28mm



SMNS



C. tenuilineatus paratype
Röckel Coll. Baia Binga 26mm



SMNS

Paratypes in the Röckel collection at SMNS Stuttgart also show this variation in colour form.

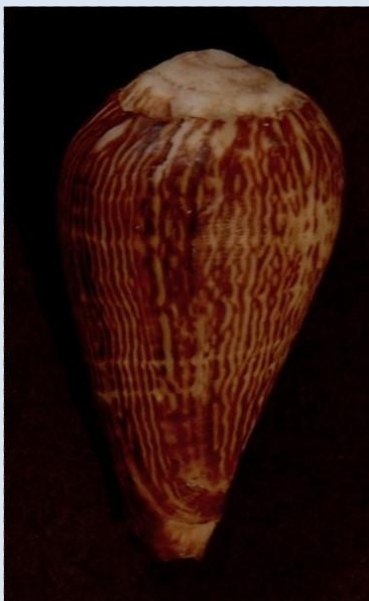
Specimens similar to the Röckel paratypes are found at Limagens.



C. tenuilineatus Limagens
20mm GM



C. tenuilineatus Limagens
30mm CS



Elefantes GM



Elefantes GM

Other specimens from Elefantes have a more typical pattern with wavy axial brown lines and distinctive spiral lines at the middle and in the upper half as found on the paratype from Canoco, figured in the description.



C. tenuilineatus Sombreiro 27mm GM

C. aff. tenuilineatus Sombeiro 26mm GM

A number of specimens were found at Sombreiro in 2019 by Jose Rosado. The 27mm specimen has key elements of the striped pattern of *C. tenuilineatus*. The 26mm specimen from the same locality has a plain brown pattern and would be difficult to separate from *C. inesa*.



Limagens 22mm CS 2018

This specimen similar in pattern to the paratype(fig4) illustrated above from Canoco near Limagens. Given the Limagens locality, it may be an unusual form of *C. musivus/alexandrinus*.

DNA analysis: There are no records of DNA data.
