

A new species of genus *Columbella* (Gastropoda, Columbellidae) from the Rio de Janeiro coast, Brazil

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Abstract

Columbella costa, a new species from off Saquarema, Rio de Janeiro, Brazil, is described. This new species is characterized by its obesity; high spire; smooth, glossy surface; and by a deeper water habitat of 30-35 m. This is the second species of the genus found off the Brazilian coast and the only one occurring in its bathymetric range.

Key Words: *Columbella costa*, new species, Rio de Janeiro, Brazil, deep waters.

Resumo

Columbella costa, uma espécie nova, é descrita para a região ao largo de Saquarema, Rio de Janeiro. A espécie nova é caracterizada pela altura e obesidade da espira, superfície brilhante e lisa e pelo habitat mais profundo (30-35 m). Esta é a segunda espécie do gênero na costa brasileira e a única a ocorrer naquela batimetria.

Palavras-chave: *Columbella costa*, espécie nova, Rio de Janeiro, Brasil, águas profundas.

Introduction

The family Columbellidae is one of the most diverse among neogastropods. It contains small-sized species, which can be either carnivorous or herbivorous. Members of the family generally live intertidally in tropical seas. The genus *Columbella* Lamarck, 1799 (type species *Voluta mercatoria* Linné, 1758, M) occurs worldwide, mostly in tropical and subtropical regions (Radwin, 1977). A single species of the genus occurs in shallow water off the Brazilian coast, *C. mercatoria* (Linné, 1758), which is distributed from North Carolina, USA, to the southeastern coast of Brazil (Rios, 1994).

A new species of *Columbella* has recently been brought to my attention. It was collected by fishermen off the coast of Rio de Janeiro in relatively deep waters (about 30 m), which is an uncommon habitat for a representative of the genus. This new species is formally described here. The specimens are deposited at the mollusk collection of the Museu de Zoologia da Universidade de São Paulo (MZSP).

Systematics

Columbella costa new species
(Figs. 1-4)

Type material: Holotype MZSP 81897. Paratype MZSP 78893, from type locality.

Type locality: BRAZIL, Rio de Janeiro, off Saquarema, 22°58'S 42°30'W, at 30-35 m depth (Coltro leg., viii/2006).

Diagnosis

Western-Atlantic deeper water (30-35 m) species with high obesity in superior portion of body whorl; high spire (about 40% of length); and smooth, glossy surface.

Description

Shell (Figs 1-4). Outline biconical, length about 20 mm. Color brownish orange to purple, with irregular small pale beige to white spots somewhat aligned in subsutural region and in middle of body whorl; peristome white (Figs. 1, 3). Protoconch of two smooth, convex, rounded whorls, successively larger; limit with teleoconch clear. Teleoconch of about six whorls. Four first whorls with smooth surface; suture plane, indistinct; widening abruptly at fourth whorl. In two last whorls, suture becoming gradually deeper (Figs. 2, 4), and whorls becoming rounded and convex. Surface of two last whorls lacking sculpture, except for growth lines and axial undulations. Body whorl wider in middle level of superior third; superior half rounded and convex, inferior half shallowly concave. Sculpture lacking or of shallow spiral, narrow furrows, uniformly distributed, about 20 in body whorl, interspaces about 6 times furrow width; furrows gradually becoming slightly deeper towards lower end, markedly in region posterior to siphonal canal. Aperture about 60% of total shell length, antero-posteriorly elongated, narrow, situated obliquely in lateral region of body whorl (Figs. 1, 3); posterior insertion of outer lip at about 1/3 of body whorl length far from adjacent suture. Parietal wall smooth, without callus, slightly concave, forms angle of about 150° with

columella. Columella slightly convex or straight, almost parallel to antero-posterior axis, with 6 short, except for anterior and posterior ends.

Measurements: (length and width in mm). Holotype: 20.3 by 11.3; paratype: 20.1 by 10.6.

Distribution: Type locality.

Habitat: Sandy, 30-35 m depth.

Material examined: Types.

Etymology: The specific epithet is in honor of Paulo Marcio S. Costa, researcher who is specialized in columbellids and that have recently produced his dissertation revising the family in Brazilian waters (Costa, 2005). The non addition of an "i" at end is arbitrary, with phonetic proposes.

Discussion: *Columbella costa* is similar to *C. mercatoria* that occurs in a much wider range and is far more common. *C. mercatoria* has a highly variable shell, however, the degree of variation never overlaps *C. costa* characters. *C. costa* is larger, reaching 20 mm, while *C. mercatoria* normally is about 10-15 mm long (although specimens about 20 mm long of *C. mercatoria* are rarely found). The spiral sculpture of *C. costa* is weak, hard to discern in some specimens and feebly deep in others, this character is more developed in *C. mercatoria*, which has deeper spiral furrows; the number of spiral furrows is about 20 on body whorl of *C. costa*, and about 15 in *C. mercatoria*.

C. costa whorls are evenly curved so it is widest just behind middle region of body whorls; the whorls of *C. mercatoria* form shoulders posteriorly so it is widest closer to suture. The spire of *C. costa* is taller (about half of shell length) than that of *C. mercatoria* (about 1/3); its profile is also different, as *C. costa* has it somewhat straight, *C. mercatoria* has it notably concave. The suture is also a distinctive character, *C. costa* has shallower suture, being almost imperceptible in first whorls, while in *C. mercatoria* it is deeper. *C. costa* lacks any kind of suture in spire, whilst nodules and a shoulder are common in *C. mercatoria*. The aperture of both species is very similar, although teeth are normally much more developed in *C. mercatoria*, mainly in inner lip. Although the depth of occurrence of *C. mercatoria* can reach 60 m, it is much more common from intertidal to 10 m depth; *C. costa*, on the other hand, is found in 30-35 m depth.

Columbella costa can not be confused with any species of the genus worldwide. It resembles some variant of the European *Columbella rustica* (Linné, 1758) that sometimes have taller spire and smooth surface (Radwin, 1977), however, *C. costa* is different in having shorter apertural length, spiral sculpture still less developed (mainly in inferior region of body whorl), and by straighter profile of spire first whorls. Additionally, *C. costa* differs from *C. fuscata* Sowerby, 1832, from W. Panama, in by elongated fashion, by wider aperture and by less uniform profile of the spire whorls.

Columbella costa also resembles *Eurypyrene ledaluciae* (Rios & Tostes, 1981) that also occurs in coast of Rio de Janeiro (Campos Bay) by the color, smooth outer surface and by obesity of the shell.



Figures 1-4, *Columbella costa*, n.sp. types: 1-2, holotype; 3-4, paratype MZSP 78893. Scale = 3 mm.

However, *C. costa* differs in some aspects that preclude the inclusion of this species in the genus *Eurypyrene* Woodring, 1928 (type species *Pyrene (E.) eurynotum* Woodring, 1928, OD, Pliocene fossil from Jamaica). Some of them are in the different fashion of the aperture, which is harrower in *C. costa*, with narrower teeth and with callus not developed. Additionally, *C. costa* has the typical columellar posterior tooth, characteristic of *Columbella*, instead of the posterior parietal denticles found in *Eurypyrene*.

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