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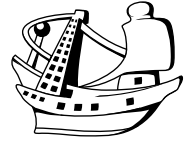
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New Seguenziidae of the genus *Ancistrobasis* (Vetigastropoda: Seguenzioidea) from deep waters in the South Atlantic Ocean (Brazil)

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Abstract: A new species of the family Seguenziidae Verrill, 1884 was discovered during dredging on the continental slope off northeastern Brazil. This species is described herein based on conchological features. *Ancistrobasis zumbii* sp. nov. is similar to *A. costulata* (Watson, 1879) and *A. depressa* (Dall, 1889) in having flattened whorls increasing regularly (except for the last whorl, which enlarges conspicuously), an inner lip with a rounded denticle and a funnel-shaped umbilicus. *Ancistrobasis zumbii* differs primarily in possessing a slight suprasutural angulation, slight axial ribs on the first teleoconch whorls and smooth, slightly undulated spiral threads.

Résumé : Un nouveau Seguenziidae du genre *Ancistrobasis* (Vetigastropoda : Seguenzioidea) des eaux profondes de l'Océan Atlantique sud (Brésil). Une nouvelle espèce de la famille Seguenziidae Verrill, 1884 a été découverte au cours de dragages sur la pente continentale du nord-est du Brésil. Elle est décrite ici d'après ses caractères conchiologiques. *Ancistrobasis zumbii* sp. nov. est similaire à *A. costulata* (Watson, 1879) et *A. depressa* (Dall, 1889) qui possèdent des tours plats, croissant régulièrement (à l'exception du dernier qui s'élargit ostensiblement), une lèvre intérieure avec un denticule arrondi et un ombilic en forme d'entonnoir. *Ancistrobasis zumbii* se différencie par un léger angle supra sutural, des cordons spiraux lisses et faibles et de légères stries axiales sur les premiers tours de téléoconque.

Keywords : Biodiversity • South America • Northeastern Brazil • Deep sea • Gastropoda • Seguenzioidea • *Ancistrobasis*

Introduction

Since 2003, a number of studies have contributed knowledge on living micromollusks from the continental slope off northeast Brazil. These studies are based on the

descriptions of taxa collected from oceanographic expeditions carried out in the scope of the "Live Resources of the Exclusive Economic Zone" program (REVIZEE Program/Score Northeast) and Bacia Potiguar Campaign Petrobrás (Brazilian Petroleum Co.) (Absalão & Santos, 2003; Absalão et al., 2003; Arruda et al., 2007; Barros & Lima, 2007; Barros et al., 2007; Lima & Barros, 2007; Lima et al., 2007a, b & 2010; Francisco et al., 2012; Tenório et al., 2011). These studies do not include vetigas-

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tropods belonging to the family Seguenziidae Verrill, 1884, for which knowledge from the Brazilian region remains sporadic and superficial (Watson, 1886; Abbott, 1974; Rios, 1994 & 2009).

There are fewer than 200 species of living seguenziids worldwide (Keen, 1971; Abbott, 1974; Marshall, 1983, 1988 & 1991; Quinn, 1987; Poppe et al., 2006; Poppe, 2008; Rios, 2009; Rosenberg, 2009), most of which are found at bathyal depths primarily between 200 and 1000 m (Hickman, 1998). The taxonomic diversity of the family has been better documented in the Pacific Ocean (Marshall, 1983, 1988 & 1991; Quinn, 1983a, b & 1987; Poppe et al., 2006; Poppe, 2008), in contrast to the Atlantic Ocean (Jeffreys, 1876; Watson, 1879 & 1886; Verrill, 1884; Dall, 1889 & 1927; Bayer, 1971; Rios, 2009). Only seven species classified in the genera *Seguenzia* Jeffreys, 1876, *Basilissa* Watson, 1879, *Carenzia* Quinn, 1983, *Hadroconus* Quinn, 1987 and *Ancistrobasis* Dall, 1889 have been recorded for deep waters off Brazil (Rios, 1994 & 2009).

Sediment samples obtained from the continental slope off northeast Brazil during the REVIZEE Program (1999-2001) contained the seguenziids *Ancistrobasis costulata* (Watson, 1879), *Hadroconus altus* (Watson, 1879), *Seguenzia hapala* Woodring, 1928 and a previously unknown species, thereby demonstrating that the group is more speciose in the extensive exclusive economic zone of Brazil.

This paper describes a new species of *Ancistrobasis* for the bathyal region off northeast Brazil. At the moment, *Ancistrobasis costulata* and *A. depressa* (Dall, 1889) are the only congeners reported for the Atlantic Ocean.

Materials and Methods

The suprageneric systematics is based on Marshall (1991). Genus identification and the terminology used for protoconch and teleoconch descriptions is based on Marshall (1983 & 1991). Photographs were made with a digital camera. Images were taken using a Jeol JSM6360 scanning electron microscope at the Electron Microscope Laboratory of the Instituto Tecnológico de Pernambuco, Brazil.

Abbreviations used in text: ICZN - International Commission on Zoological Nomenclature; MNRJ - Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; MZSP - Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil; coll. - collector; La - length of aperture; Lt - total length of shell; Wa - width of aperture; Wp - width of protoconch; Wt - width of shell; Wu - width of umbilicus; M - mean; N - number; R - range; SD - standard deviation.

Systematics

Family Seguenziidae Verrill, 1884

Subfamily Seguenziinae Verrill, 1884

Tribe Fluxinelli Marshall, 1991

Genus *Ancistrobasis* Dall, 1889

Type species *Basilissa costulata* Watson, 1879 (by subsequent designation Dall, 1927) - Recent, south-eastern Florida and Gulf of Mexico.

Ancistrobasis zumbii sp. nov.

(Figs 1A-G)

Type material

Holotype: MZSP 85994; paratypes: 1 shell, MZSP 85995; 1 shell, MZSP 85996; 1 shell, MNRJ 29764, all from type locality.

Type locality

BRAZIL, off Alagoas, 'Natureza' coll. (REVIZEE: 10°06'35"S-35°46'41"W, 720 m, 16.xii.2001).

Diagnosis

Shell broader than high. Teleoconch with flattened to weakly convex whorls and a slight suprasutural angulation. First, second, third and fourth whorl with about 24, 27, 28 and 33 rounded axial ribs, respectively. Axial ribs disappearing on last whorl.

Description

Shell up to 4.5 mm long and 7.1 mm wide, broader than high (Wt 5.9-7.1 mm x Lt 3.5-4.5 mm: Table 1), rather stout, moderately thick, umbilicate, whitish, with nacreous to translucent outer shell layer (Fig. 1A & B). Protoconch paucispiral (1 1/8 whorls), eroded surface (Fig. 1D & E). Teleoconch with up to 5 somewhat flattened to weakly convex whorls, with slight suprasutural angulation (Fig. 1A-C). Teleoconch whorls 1-4 sculptured with rounded and spaced axial ribs, disappearing into last whorl (Fig. 1A & F). First whorl tinted light pink and finely sculptured with about 24 axial ribs (Fig. 1D). Second, third and fourth whorl with about 27, 28 and 33 axial ribs, respectively (Fig. 1F). Suture weakly marked and canaliculated (Fig. 1A-C & F). Penultimate and last whorl sculptured with smooth and slightly undulated spiral threads (Fig. 1C). Last whorl enlarges conspicuously (Fig. 1A & B). Base broad, flat to slightly convex, sculptured with 11-15 spiral cords that gradually increase in thickness toward the umbilicus (Fig. 1A & G). Circumbilical cord sculptured with strong, rounded nodules (Fig. 1G). Umbilicus deep, wide, funnel-

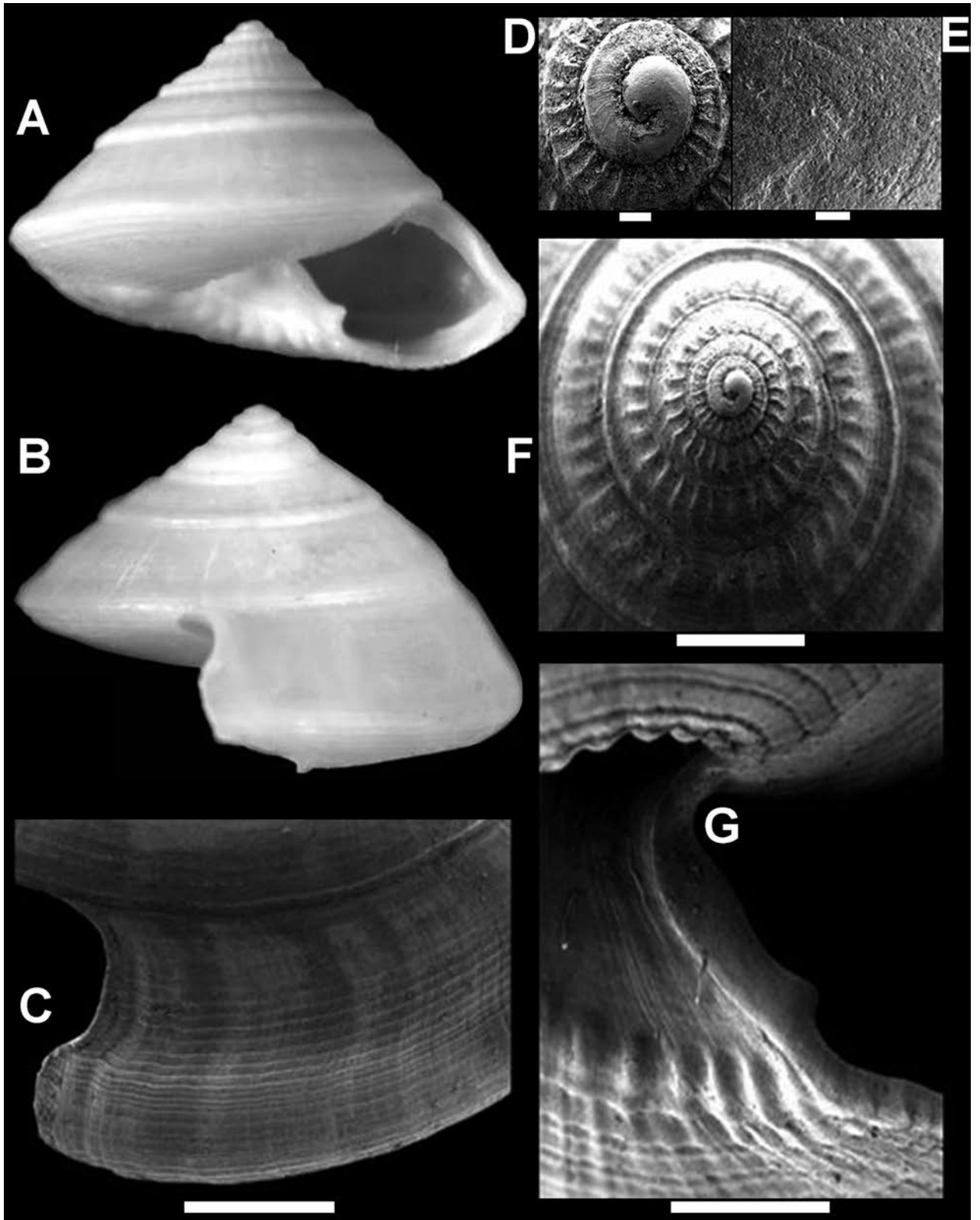


Figure 1A-G. *Ancistrobasis zumbi* sp. nov. **A.** Holotype - MZSP 85994. **B-F.** Paratype - MZSP 85995. **G.** Paratype - MZSP 85996. **A.** Ventral view (Lt: 4 mm). **B.** Lateral view (Lt: 3.5 mm). **C.** Subsutural sinus and spiral lines of last whorl. **D.** Protoconch. **E.** Surface of nucleus whorl. **F.** Apical view. **G.** Detail of sculpture on base showing spiral lines, circumbilical cord and columellar tooth. Scale bars: C, F & G = 500 μ m, D = 100 μ m, E = 10 μ m.

shaped, about 30% of width of shell (Fig. 1G). Intra-umbilical area sculptured with axial growth striae (Fig. 1G). Aperture rhomboidal (Fig. 1A). Outer lip sinuous and thin at rim of labial projection, elsewhere thick (Fig. 1A-C); Posterior notch broad, shallow and shaped as an open "U" (Fig. 1C). Parietal glaze thin. Inner lip thick, straight, oblique, with blunt, smooth and rounded denticle (Fig. 1G).

Geographic distribution

Known only from type locality.

Etymology

The species is named after Zumbi from Quilombo dos Palmares, a martyr and last leader of a self-sustaining community of runaway captives evading slavery in the seventeenth century, located in the state of Alagoas, Brazil.

Table 1. *Ancistrobasis zumbii* sp. nov. Linear measurements (in mm).

	N	R	M	SD
Lt	4	3.5-4.5	4.02	0.41
Wt	4	5.9-7.1	6.55	0.5
La	4	1.4-1.7	1.52	0.12
Wa	4	2.5-3	2.67	0.23
Wp	4	0.2-0.25	0.21	0.02
Wu	4	1-2	1.45	0.38

Remarks

The species described herein has appeared simultaneously in an abstract under the name *Carenzia* sp. new species and *Carenzia depressa* new species (Paixão et al., 2010: figs 1-4). However, the generic placement of the species was mistakenly identified. Furthermore, according to the Code (Article 8.6., International Commission on Zoological Nomenclature, 1999), the specific epithet, type material, type locality and description were not published validly.

Discussion

The depressed and conical shell and the inconspicuous axial sculpture of the new species superficially resembles members of the genera *Carenzia* Quinn, 1983 and *Quinnia* Marshall, 1988, but it differs principally in having a slight suprasutural angulation and for not having a strong keel on the periphery. *Carenzia* and *Quinnia* [e.g. *Q. patula* (Marshall, 1983)] commonly have a strong and supra-median shoulder keel, descending to almost submedian or

median position, and a strongly projecting peripheral keel (Marshall, 1983 & 1991).

The new species is superficially similar to *Hadroconus* for having a spire with a flat side, base slightly convex, wide and funnel-shaped umbilicus bounded by a tuberculate cord, being distinguished by the depressed and conical shape, axial ribs present on the first whorls, rhomboidal aperture and U-shaped sinus. Usually, members of the genus *Hadroconus* have a conical shape, teleoconch whorls with opisthocline, sigmoid and non-collabral axial riblets, a trapezoidal aperture and C-shaped sinus (Quinn, 1987; Marshall, 1988 & 1991).

The new species fits best among seguenziids of the genus *Ancistrobasis*, based on the low and strongly gradate spire, weakly convex whorls, broad and shallowly convex base sculptured with numerous and uniform spiral cords, thick inner lip with a rounded tooth, U-shaped sinus and wide and funnel-shaped umbilicus (Quinn, 1983b; Marshall, 1983 & 1991).

Ancistrobasis is closely related to *Calliobasis* in gross shell morphology, ornamentation pattern and outer lip profile (Marshall, 1983 & 1991), but differs in having a more compact and stouter shell, with stronger spiral threads on the periphery and suprasutural region, shoulder angulation more persistent and narrowly biangulate periphery (Marshall, 1983 & 1991).

Ancistrobasis zumbii resembles *A. costulata* in having about five flattened to weakly convex whorls on the teleoconch that increase regularly (except for last whorl, which enlarges conspicuously), distinct, slightly impressed suture, flat base, rhomboidal aperture, columella with a tooth, outer lip with rounded sinuses and deep, funnel-shape umbilicus, but the new species differs from *A. costulata* for having a slight suprasutural angulation, rounded, spaced axial ribs on the first to fourth teleoconch whorls, which disappear on the subsequent whorls, smooth, slightly undulated spiral threads on the penultimate and last whorl and a smooth denticle. *Ancistrobasis costulata* has flattened teleoconch whorls (with no subsutural angulation), is wholly sculptured by narrow, sharp, strong, flexuous and uniform axial riblets crossed by fine spiral threads forming small knobs on the ribs and has an inner lip with a strong tooth (Watson, 1886: 103-104, pl. 7, fig. 11a-c; Rios, 1994: 44-45, pl. 14, fig. 152). Quinn (1979: 52, figs. 85-86) and Rios (2009: 72, fig. 169), respectively, mistakenly figured *A. depressa* and a *Seguenzia* as *A. costulata*. Until now, *A. costulata* has been the only *Ancistrobasis* reported for South America, occurring off the states of Rio de Janeiro (70 to 120 m), São Paulo and Rio Grande do Sul (150 m) (Rios, 1994: 45; 2009: 72).

Ancistrobasis zumbii and *A. depressa* are similar in having a shell that is broader than high, with about five flattened to weakly convex whorls on the teleoconch that

increase regularly (except for last whorl, which enlarges conspicuously), a broad, slightly convex base, rhomboidal aperture and funnel-shaped umbilicus, but the new species differs considerably from *A. depressa* in having predominately smooth sculpture on the teleoconch, a weakly marked suture, smooth aperture, straight inner lip with one smooth, blunt tooth and a sinuous outer lip. *Ancistrobasis depressa* has conspicuous, strong sculpture on the teleoconch, a well-marked suture, a strongly thickened aperture, an inner lip flexed near the base forming a projected, rounded tooth and a broad, straight and deeply grooved outer lip (Dall, 1889: 384-385, pl. 23, figs. 4-4a). Thus far, *A. depressa* is known only for the West Indies (Yucatan Strait: 1170 m: Dall, 1889: 384).

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