

# THE PRESENCE OF THE ARGENTINIAN GENUS *PILSBRYLIA* IN BRAZIL, WITH DESCRIPTION OF A NEW SPECIES (GASTROPODA, ODONTOSTOMIDAE)

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*Abstract* *Pilsbrylia dalli* is a new species belonging to a genus previously only known in northern Argentina (1800km to the east) but recently discovered in Vazante region, Minas Gerais, Brazil. The new species has a diagnostic set of features: shell relatively obese; last two whorls similar in size; the apex relatively wide; the sculpture with delicate axial ribs, located close to each other (around 30 in penultimate whorl); the peristome with strong, wide labral tooth, and a tall and flattened palatal tooth. Further comparison with the other two species of the genus, *P. paradoxa* and *P. hyltonae*, is also provided, including images of their type specimens.

*Key words* Morphology, *Pilsbrylia dalli* n. sp., *Odontostomidae*, Brazil, biogeography.

## INTRODUCTION

The odontostomid genus *Pilsbrylia* Scott, 1952 so far has two species: *P. paradoxa* Scott, 1952 (the type species, OD) and *P. hyltonae* Fernández & Rumi, 1980. Both species occur in northern Argentina, in the provinces of Salta and Jujuy (Fernández & Rumi, 1980; Cuezco *et al.*, 2013). The genus is easily characterized by the elongated profile and narrow, deflected peristome bearing only a pair of opposed positioned teeth, one in middle level of outer lip and its counterpart in the inner lip.

The geographic restriction of *Pilsbrylia* to the northern Argentina region was recently challenged by a sample collected by the team of collectors of the naturalist José Coltro Jr. A sample belonging to this genus was collected from the region of Vazante, central Minas Gerais state, Brazil, approximately 1800km east from the Argentinian region. This is the first record of this genus in Brazil (Simone, 2006; Birckolz *et al.*, 2016), and the analysis of the shells was sufficient to infer the sample as a new species, formally described herein. In order to improve the discussion and comparison, type specimens of the other *Pilsbrylia* species were examined. No live collected material exists belonging to this genus so the anatomical characters of it still remain unpublished.

## MATERIAL AND METHODS

The sample studied was donated as dry shells, which were examined and photographed using

stereomicroscopes, with most photos obtained by multifocus software Zeiss Axion Vision, and the remainder by standard digital camera. Photos of the type specimens of the other congeneric species were personally obtained from Museo de La Plata (MLP). The type specimens of the new species are deposited in Museu de Zoologia da Universidade de São Paulo (MZSP) as the list below.

## SYSTEMATICS

*Pilsbrylia dalli* sp. nov.  
(Figs 1–10)

*Types* Holotype MZSP 133161. Paratypes, MZSP 133129, 4 specimens from type locality.

*Type locality* Minas Gerais; Vazante region, Brazil, 17°58'S 46°53'W (R. Costa col, Femorale team, iii/2013).

*Diagnosis* Shell relatively obese. Last two whorls of similar size. Apex relatively wide. Sculpture delicate, axial ribs located close to each other (approximately 30 in penultimate whorl). Peristome labral tooth strong and wide; palatal tooth tall and flattened.

*Description* Shell turriform, about 16mm, 2.7 times longer than wide, 8 whorls (Figs 1–3, 7–10). Colour commonly reddish beige (Figs 1–6, 9–10) but several (10%) pale brown (Figs 7–8). Protoconch simple, smooth (eroded?), of



**Figures 1–10** *Pilsbrylia dalli*, new species, types: 1–6) Holotype MZSP 133161 (L 15.9mm); 1) frontal view; 2) right view; 3) dorsal view; 4) apical view; 5) inferior view; 6) detail of apical region in profile, scale= 1mm; 7) paratype MZSP 133129#2 (L 17.2mm), frontal view; 8) same, dorsal view; 9) paratype MZSP 133129#1 (L 17.6mm), frontal view; 10) same, dorsal view.

1.5 whorls (Fig. 6), 1.7mm wide, 1.5 times taller than wide; occupying around 1/3 of shell width (Fig. 4), 9% of total length; transition with teleoconch unclear (Fig. 6). Teleoconch 6.5 whorls, first three whorls and protoconch with uniform growth enlargement, producing conical profile (profile angle approximately 40°); three remaining whorls approximately same-sized, becoming cylindrical; last 2/3 whorl slightly narrower than preceding whorl. Sculpture gradually appearing half whorl after protoconch (Fig. 6), remaining whorls with well-marked, delicate, narrow, low axial ribs, from suture to suture, slightly arched (concavity anterior); between two successive ribs distance equivalent to 4 times their width; average of 30 ribs in penultimate whorl. Suture shallow but relatively well-marked. Wide median furrow gradually appearing in last half whorl (Figs 2, 3, 8, 10), becoming slightly deeper anteriorly, up to labral tooth level, as outer shallow concavity (Fig. 2). Aperture deflected, expanding outside 10% shell width; 1.5 longer than wide; occupying 32% of shell length, 49% of shell width; slightly prosocline (angle 20° with shell longitudinal axis) (Figs 2, 5). Peristome

relatively thick (Figs 1, 7, 9), uniform along its circumference, except for thin callus not expanding beyond aperture area; superior end angular (90°); inferior region rounded, slightly expanded forming narrow anterior platform (Figs 3, 8, 10). Labral tooth tall (1/3 aperture width), from twice wider than tall (Fig. 1) to as tall as wide (Fig. 7), restricted to peristome (Fig. 5) (1/15 whorl); inner edge convex (Fig. 7) to slightly concave (Fig. 1) or straight (Fig. 9). Palatal tooth about as tall as labral tooth, but much narrower (from 1/3 to 1/4 narrower) than labral tooth; obliquely positioned, extending ~half whorl towards posterior, along columella. Outer lip smoothly arched, simple, slightly concave in middle by labral tooth. Inner lip strongly notched in middle, superior half almost planar as callus; inferior half concave, possessing palatal tooth in its superior third; inferior half forming well-developed outer deflection covering narrow umbilicus produced by last half whorl (Fig. 5).

*Habitat* Transition between Atlantic Rainforest and Caatinga semi-dry biomes.



**Figures 11–15** *Pilsbrylia* spp type specimens: **11–12** *P. paradoxa* syntype MLP 11337 (L 14.8mm); **11** frontal view; **12** dorsal view; **13–15** *P. hyltonae*; **13** lectotype MLP 3991 (L 18.6mm), frontal view; **14** paralectotype MLP 3990 (L 20.4mm), frontal view; **15** same, dorsal view.



*Measurements (in mm)* Holotype (Figs 1–6): 15.9 by 5.8; paratypes MZSP 133129 #1 (Figs 9–10): 17.6 by 6.0; #2 (Figs 7–8): 17.2 by 5.9.

*Etymology* The epithet is in honor to William Healey Dall (1845–1927), which, jointed to the Henry Augustus Pilsbry (1862–1957) honored in the genus (both Americans), honor in a single species both greatest malacologists in the Americas. This designation was also suggestion of José Coltro Jr.

## DISCUSSION

Despite the occurrence of *Pilsbrylia dalli* sp. nov. almost 2,000km away from those of both remaining species, it appears an enigmatic mixture of those Argentinian species. The relatively obese profile of the shell of *Pilsbrylia dalli* (Figs 1–10) resembles more closely that of *P. paradoxa* (Figs 11–12), than the narrower profile of *P. hyltonae* (Figs 13–15). On the other hand, the sculpture of *P. dalli* appears closer related to that of *P. hyltonae* in being numerous (~30 in penultimate whorl) and more delicate, than that of *P. paradoxa*, which is more irregular, sparse and stronger. The protoconch of *P. dalli* is the widest (~30% of shell width), as the other species have a more tapered apex, in particular *P. hyltonae* (Figs 13–15).

The labral tooth of *P. dalli* (Figs 1, 7, 9) looks more like that of *P. paradoxa* (Fig. 11) in being wide and considerably occluding the aperture; while that of *P. hyltonae* is pointed and shorter, similarly to the palatal tooth (Figs 13, 14). On the other hand, the palatal tooth of *P. dalli* is the tallest in the genus, being considerably more projected inside aperture.

Beyond the height of the palatal tooth and the wide apex, another diagnostic character of *P. dalli* is the outer profile, as the shell has its wider region almost in middle of its length (Figs 1–10), while the widest region of *P. paradoxa* and *P. hyltonae* is more anterior (Figs 11–15).

It is possible to hypothesized that the peristome teeth of the odontostomids are useful to avoid predation of other carnivore gastropods – scolodontids, streptaxids and oleacinids – being

both former ones much common in Brazilian ecosystems. Usually, the peristome of the odontostomids have a higher richness of teeth, from four to more teeth (Simone, 2006). The investigation on the protective functionality of both teeth of *Pilsbrylia* looks an interesting issue for further investigation.

Taking into consideration the general constitution of the shell, such as its elongation, and form and deflection of the peristome, it is possible to infer a closer relationship of the *Pilsbrylia* to the genera *Cyclodontina* Beck, 1837, and *Bahiensis* Jousseau, 1877. These genera are much more common in the region in such *P. dalli* was discovered. Certainly a biogeographic investigation (via anatomical and molecular information) on the species of these genera should bring very interesting results. Additionally, the discover of another genus occurring in central Brazil region shows how weak is the knowledge on the Brazilian malacofauna.

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