

Two cases of problematic taxonomy in Brazilian Subulinidae (Gastropoda, Eupulmonata)

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Abstract

Two cases of problematic taxonomy of Brazilian Subulinidae are unveiled. The basis is the catalogue by Simone (2006). The first is *Bulimulus regularis* (Pfeiffer, 1852) (species 366), which was transferred to the subulinid genus *Beckianum*, a new combination. The other is a duality in the *Leptinaria parana* (Pilsbry, 1906) (species 682), which actually are two species: 1) *Subulina parana* Pilsbry, 1906; and 2) *Leptinaria parana* Pilsbry, 1926, both from Pará, Brazil. Details of these taxa are discussed, and a new correction of the catalogue is suggested.

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Introduction

The family Subulinidae, more recently considered a subfamily, Subulininae, within Achatinidae (e.g., Worms), is a huge taxon with more than 80 genera and ~820 species, occurring worldwide, mostly in warmer regions of the Globe. Despite the enormity of these numbers, the taxon is understudied, lots of new taxa still need to be described, and the known ones mostly need better taxonomical definitions. Simple examination of collected samples easily result in descriptions of new taxa (e.g., Simone, 2018; Simone & D'ávila 2019).

The catalogue by Simone (2006) inventoried the Brazilian (and neighboring) subulinids hitherto known, including 31 valid species. This number changes to 33 with the following discussed data. This paper is, thus, other corrigenda to that catalogue, beyond those already published (Lee, 2007; Simone, 2008, 2019, 2020a, b).

Case 1

Beckianum regularis (Pfeiffer, 1852) comb. n.

Figs: 1-2

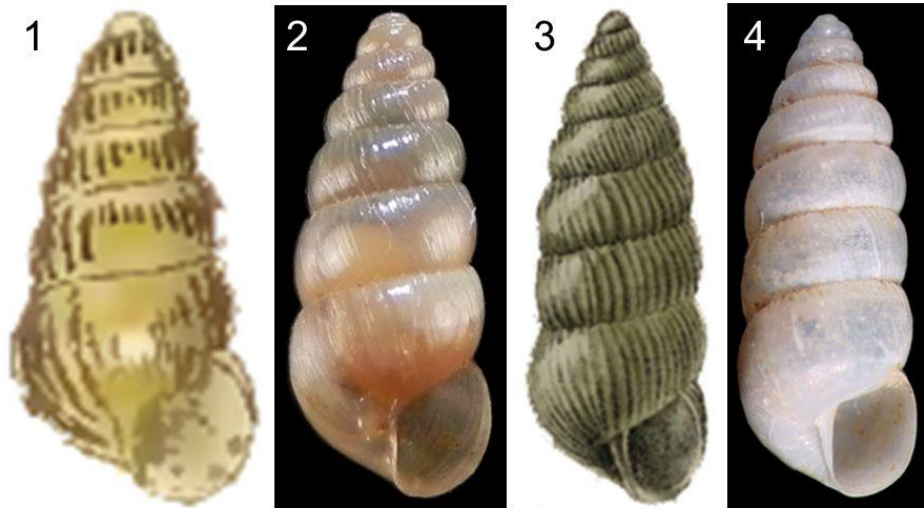
Bulimus regularis Pfeiffer, 1852:94; 1853: 402; Küster, 1850: 152 (pl. 39, figs 20-21); Hupé, 1857: 53; Hidalgo, 1869: 123; Pilsbry, 1906: 189 (in syn of *Opeas beckianum*).

Opeas regularis: Martens, 1868: 208; Strebel, 1882: 102.

Opeas beckianum var. *regulare*: Pilsbry, 1906: 192.

Bulimulus regularis: Simone, 2006: 119 (fig. 366).

Type locality: Rio de Janeiro.



1-4. Shells of *Beckianum*. **1**, reproduction of *Bulimus regularis* by Küster (1850, fig 22) (L ~6 mm); **2**, actual specimen, (L 7.2 mm); **3**, reproduction of *Opeas beckianum* by Pilsbry (1906, pl. 27, fig 42 (L ~5 mm); **4**, actual specimen of *Beckianum beckianum* MZSP 30346 (L 6 mm) (by Simone, 2006).

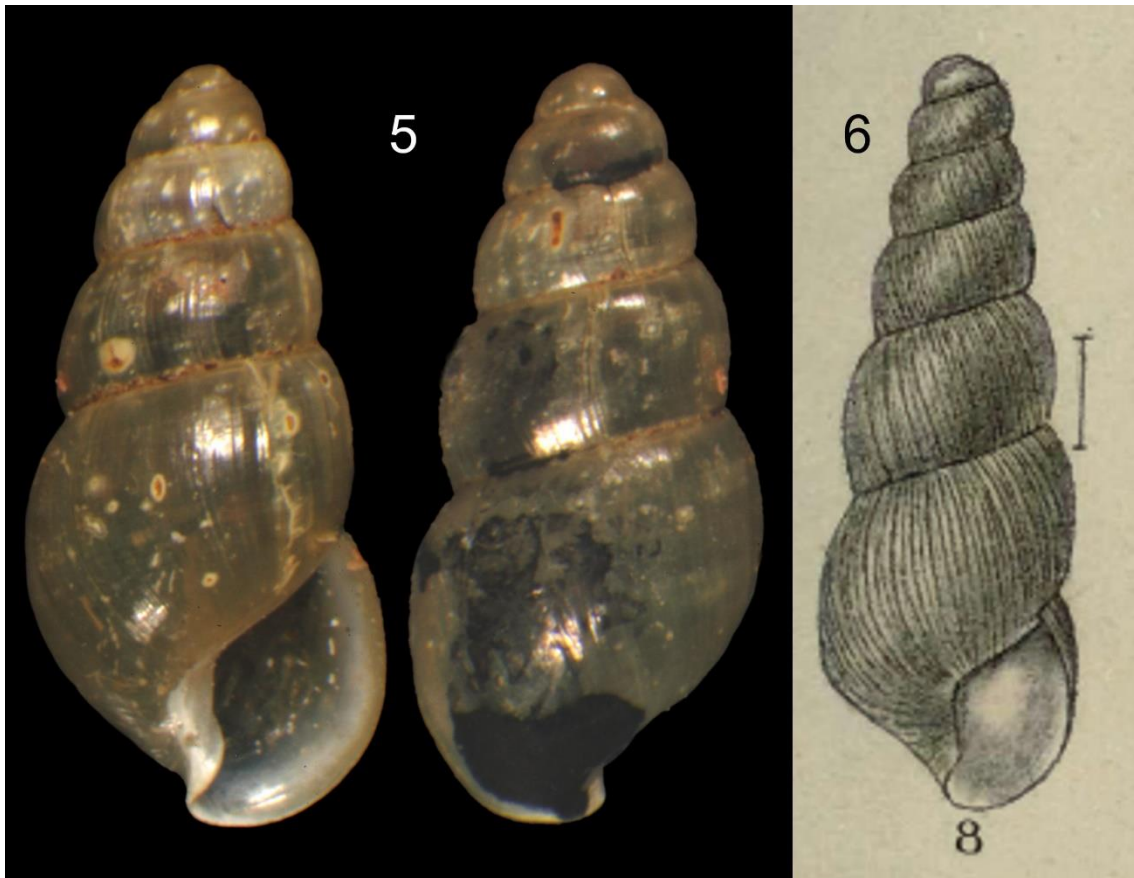
Remarks: *Bulimus regularis* was mentioned in the genus *Bulimulus* by Simone (2006) because most of the species considered in that genus was automatically transferred to *Bulimulus*. However, the transition of the species to the subulinid genus *Opeas* was overlooked by Simone (2006: 119), maintaining the species in that Bulimulidae genus. As *B. regularis* was officially transferred to *Opeas* (synonymy above), and Pilsbry (1906: 192) considered the taxon a variety of *Opeas beckianum* (Pfeiffer, 1846), a species that presently is considered in the genus *Beckianum*, *B. regularis* can be considered *Beckianum*. This is the justification for the present new combination.

The analysis of the single published image (Fig. 1) with an actual specimen (Fig 2) shows that the whorls of the shell are narrow, compressed, with a relatively deep suture. These characters justify the generic attribution. The status of full species, instead of variety of *B. beckianum*, is mainly based on the profile of the spire. The spire of *B. regularis* is more acuminate, and the profile is straighter than those of *B. beckianum* (Figs. 3, 4), which has a clear difference of growth between the apical and the middle regions of the shell.

Related to the catalogue by Simone (2006), the species 366-*Bulimulus regularis* (page 119), must be transferred to Subulinidae, in the genus *Beckianum* (page 187), becoming *Beckianum regularis*.

Case 2

The second case refers to the species 682 of the catalogue by Simone (2006: 186). It was referred as *Leptinaria parana* (Pilsbry, 1906). But, actually, that was a mixture of 2 species: (1) *Subulina parana* Pilsbry, 1906, and *Leptinaria parana* Pilsbry, 1926. The analyses of the illustrations and types show that both are distinct entities, which are clarified herein:



5-6. Shells of subulinids with epithet "parana". 5, *Leptinaria parana* Pilsbry, 1926, lectotype ANSP 112596a, frontal and dorsal views (L ~5 mm) by Simone (2006); 6, *Subulina parana* Pilsbry, 1906, reproduction of original fig. 8 (pl. 40) (L 9 mm).

***Subulina parana* Pilsbry, 1906**

(fig. 6)

Subulina parana Pilsbry, 1906: 225-226 (pl. 40, fig. 8); Morretes, 1949: 131; Haas, 1952: 110; Salgado & Coelho, 2003: 154.

Leptinaria parana: Simone, 2006: 186 (part, see remark).

Type locality: twenty miles below Para (see remark).

***Leptinaria parana* Pilsbry, 1926**

(fig. 5)

Leptinaria parana Pilsbry, 1926: 79-80 (pl. 4, fig. 2); Morretes, 1953: 62; Salgado & Coelho, 2003: 155; Simone, 2006: 186 (part) (fig. 682).

Types: syntypes ANSP 112596, examined (Fig. 6).

Type locality: a suburb of Para, Brazil (see remark).

Remarks: the misunderstanding between *Subulina parana* and *Leptinaria parana* was comprehensive, based on their similarity of names and even of locality. Pilsbry apparently derived the name “parana” from Pará, a state of north, Amazon region of Brazil. That is not usual, as Brazil has the state of Pananá, in south of the country. Pará, which is mentioned by Pilsbry in both descriptive papers, is a huge state in Brazil. Pará geographic area is over 1,248,000 km², 10 miles below it or a suburb of it (see the type localities) sounds something strange. Possibly, the locality that Pilsbry referred in both papers may be Belém, Pará capital. Thus, the type localities should be, respectively, (1) 20 miles (32 km) below (south of) Belém, Pará, and (2) a suburb of Belém, Pará.

The catalogue by Simone (2006) should be, thus, corrected. The species 682 (page 186) must be divided, as follows:

***Leptinaria parana* Pilsbry, 1926**, with the figure 682 (herein Fig. 5); supported by the following references*: 1550, 1933do, 2150.

***Subulina parana* Pilsbry, 1906** must be added amongst the subulinids (pages 184-189) including its image (Fig. 6), supported by the following references*: 897, 1548, 1924do, 2150.

*numeration of references by Simone (2006).

As far as known, no references have included these species after Simone (2006).

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