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A new species of *Leiostracus* (Gastropoda, Pulmonata, Orthalicoidea) from Espírito Santo, Brazil

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ABSTRACT. A remarkable new species of pulmonate land snail was found in the collection of the Senckenberg Forschungninstitut und Naturmuseum Frankfurt (Frankfurt am Main, Germany) and is described here as *Leiostracus faerie* sp. nov. It can be easily identified by its small and translucent shell with fine axial light brown bands and its protoconch sculpture. It was collected in the Rio Doce ("Doce River") region in Espírito Santo, Brazil, an area known for a high diversity and endemicity of land snails. This discovery shows how little this fauna is known and reinforces the importance of museum collections in the study of biodiversity and conservation.

KEYWORDS. Atlantic Forest; *Leiostracus faerie* sp. nov.; Rio Doce, Stylommatophora.

RESUMO. Nova espécie de *Leiostracus* (Gastropoda, Pulmonata, Orthalicoidea) do Espírito Santo, Brasil. Uma extraordinária espécie nova de gastrópode pulmonado foi encontrada na coleção do Senckenberg Forschungninstitut und Naturmuseum Frankfurt (Frankfurt am Main, Alemanha) e é aqui descrita como *Leiostracus faerie* sp. nov. Esta espécie pode ser facilmente identificada por sua concha diminuta e translúcida, com finas faixas axiais marrom-claras, e pela escultura de sua protoconcha. Ela é originária da região do Rio Doce, Espírito Santo, uma área conhecida por sua grande diversidade e endemicidade de gastrópodes terrestres. Esta descoberta mostra quão pouco é conhecida essa fauna e também reforça a importância das coleções de museus no estudo da biodiversidade e em medidas de conservação.

PALAVRAS-CHAVE. *Leiostracus faerie* sp. nov.; Mata Atlântica; Rio Doce; Stylommatophora.

An extraordinary new species of pulmonate land snail was fortuitously found in the collection of the Senckenberg Forschungninstitut und Naturmuseum Frankfurt (SMF; Frankfurt am Main, Germany) while browsing through the specimens of the genus *Leiostracus* Albers, 1850. It is part of an old collection (1914) and was collected in the Rio Doce ("Doce River") region, Espírito do Santo, Brazil (Fig. 1), an area of known high diversity and endemicity of many taxa (*e.g.*, Rolim *et al*., 2006; Marques *et al*., 2013; for the land and freshwater mollusks, see Simone, 2006). This new species is described and illustrated herein.

MATERIAL AND METHODS

The single specimen is a dry adult shell, housed at the malacological collection of the SMF. Unfortunately, as the material belongs to an old collection, precise habitat and locality data remain unknown. Measurements were made with a digital caliper; abbreviations: H, shell length; D, shell greatest width; S, spire length (excluding aperture); S', spire length (excluding body whorl); h, aperture height; d, aperture width.

Specimens of *Leiostracus cinnamomeolineatus* (Moricand, 1841), including the syntypes (SMF 302126; 3 spcm.) were also analyzed, from the following collections: MNHN, Muséum National d'Histoire Naturelle (Paris, France); MZSP, Museu de Zoologia da Universidade de São Paulo (São Paulo, Brazil); NHMUK, Natural History Museum (London, UK); SMF; ZMA, Zoological Museum Amsterdam (Amsterdam, The Netherlands; now the NCB Naturalis); ZMB, Museum of Natural History, Humboldt University Berlin (Berlin, Germany; formerly Zoologisches Museum Berlin).

SYSTEMATICS

Leiostracus faerie sp. nov.

(Fig. 2)

Holotype**.** SMF 25876 (O. Fritsche col., 1914).

Type locality**.** Area in the vicinities of the Doce River (*Rio Doce*, in Portuguese), state of Espírito Santo, Brazil (Fig. 1). Unfortunately, no precise locality is given on the specimen's label.

Etymology**.** The name, from Old French, is allusive of the shell's fairy-like features: small, delicate and ethereal.

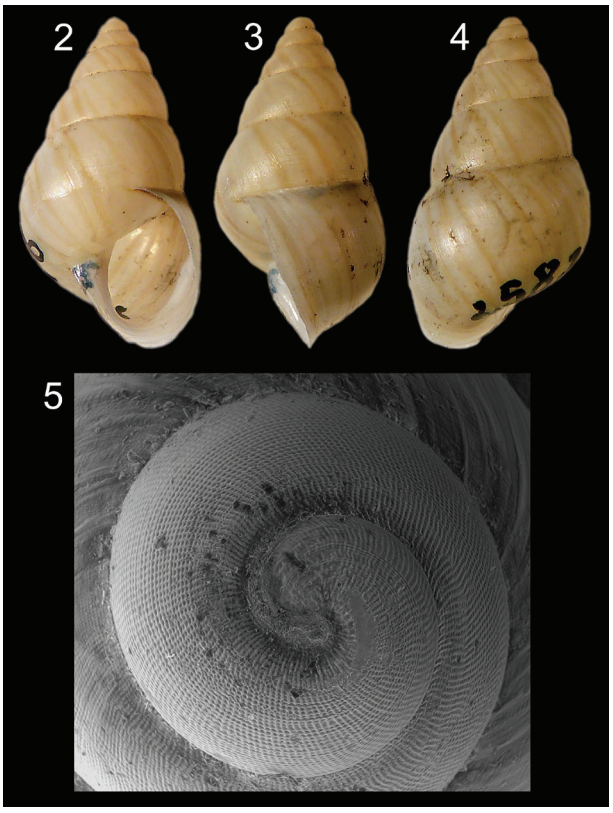
Distribution**.** Known only from the type locality.

Habitat**.** Atlantic Forest.

Diagnosis**.** Shell small if compared with other species of genus, very delicate and translucent. Protoconch with reticulated sculpture. Color pattern composed of very fine light yellowish brown axial bands.

Description. Shell small (less than 15 mm height), translucent, conical-oval; width ~1/2 shell length. Apex color (~2¾ whorls, including protoconch) whitish; remaining whorls whitish with very fine light yellowish brown axial bands. Spire angle ~50°. Protoconch (~1½ whorls) with reticulated sculpture; transition to teleoconch clear. Teleoconch smooth, except for growth lines. Whorls profile convex. Suture well-marked, but not particularly

Fig. 1. Map of the state of Espírito Santo and the region covered by the Doce River (*Rio Doce*, in Portuguese) (BA, Bahia; MG, Minas Gerais; RJ, Rio de Janeiro).



Figs 2-5, *Leiostracus faerie* sp. nov. (holotype; SMF 25876; H = 14.6 mm): 2, frontal view; 3, lateral view; 4, dorsal view; 5, SEM image showing the reticulate protoconch sculpture.

deep. Very faint carina present on body whorl. Aperture medium-sized, oval, slightly prosocline (~25º with columellar axis); ~2/5 shell length, ~3/5 shell width. Peristome whitish, slightly reflected, especially on basal and columellar regions, partially covering umbilicus. Body whorl ~3/5 shell length. Umbilicus narrow.

Measurements (in mm). 6 whorls; H = 14.6; D = 7.6; S = 8.0; S' = 5.8; h = 5.8; d = 4.7.

DISCUSSION

Leiostracus is an endemic South American genus, occurring in Guyana, Suriname and Brazil, and being particularly diverse in the eastern and southeastern regions of the latter (Breure, 1979; Simone, 2006); its earliest record dates from the Middle Paleocene of Rio de Janeiro state, Brazil (Salvador & Simone, 2013). *Leiostracus* is traditionally classified in the family Bulimulidae, but some recent works have placed it in the family Simpulopsidae (*e.g.*, Breure & Romero, 2012).

Leiostracus faerie sp. nov. can be easily identified by its small size (~14.5 mm in the holotype; the genus ranges from 20 to 30 mm) and its delicate and translucent shell, of whitish base color and with very fine light yellowish brown axial bands. There is only one species in the genus that resembles *L. faerie* in both shell shape and color pattern, namely, *L. cinnamomeolineatus*, known from the states of Pernambuco, Bahia (type locality) and Espírito Santo (Simone, 2006; although all analyzed museum specimens that bear locality data come from Bahia). *Leiostracus cinnamomeolineatus* can be easily distinguished by its larger size, stronger and opaque shell with more numerous and stronger axial brown bands, narrower umbilicus and usually broader aperture (but there is some variation in aperture shape). A striking difference resides in the protoconch: *L. cinnamomeolineatus* shows the common protoconch sculpture for the genus (Breure, 1979; Salvador & Cavallari, 2013), *i.e.*, broad, parallel and strongly prosocline wrinkles only on the upper portion of whorls, disappearing towards the median region and giving place to very fine spiral lines.

The completely reticulated protoconch seen in *L. faerie* (Fig. 2) is very unusual, although it is common in *Pseudoxychona* Pilsbry, 1931, which is either considered a subgenus of *Leiostracus* or a separate genus (Breure, 1979; Simone, 2006). The present specimen lacks the typical strong carina of *Pseudoxychona* and displays a markedly convex whorl profile instead of a straight one with a clearly conical spire. Conservatively, we classify the new species in the genus *Leiostracus*.

As noted, *L. faerie* was collected in the Rio Doce region in Espírito Santo, a place known for a high diversity of land snails and by many endemic species, notably among the orthalicids: a good example is the already mentioned genus *Pseudoxychona*, since two of its four species are endemic to the Rio Doce region (Simone, 2006).

Unfortunately, this single specimen of *L. faerie* was collected a century ago (in 1914) and it is not possible to know whether *L. faerie* can still be found in the wild, given the major degradation of the Atlantic Forest. Finding this new species in an old collection is eloquent evidence of two important realities: that very little is known about the Brazilian land snail fauna (SIMONE, 1999), and that museum collections are important not only for information storage, but also for new discoveries (ALLMON, 1994).

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