



***Physa mezzalirai*, a new cretaceous basommatophoran from Adamantina formation, Brazil**

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Abstract

This paper deals with a formal description of *Physa mezzalirai* (Basommatophora, Physidae), a new species of freshwater gastropod that lived in upper Cretaceous deposits, in sand-silty beds of Adamantina formation, Bauru basin, from Marília, São Paulo state, Brazil. This formal description legitimates the availability of the name previously described in 2010 by same authors; being this paper the correct citation for the species name.

Keywords: *Physa mezzalirai* new species, Cretaceous, Brazil

Resumo

Este artigo relata a descrição formal de *Physa mezzalirai* (Basommatophora, Physidae), uma espécie nova de gastrópode de água doce que viveu no cretáceo superior, depósitos areno-silticos da formação Adamantina, Grupo Bauru, de Marília, São Paulo, Brasil. Esta descrição formal legitima a validade do nome previamente descrito em 2010 pelos mesmos autores, sendo este artigo a citação correta para o nome da espécie.

Palavras-chave: *Physa mezzalirai* nova espécie, Cretáceo, Brasil.

Introduction

Physa mezzalirai (Basommatophora, Physidae), was already described by a previous paper, Ghilardi, Carbonaro & Simone (2010). However, that paper does not attend the ICZN article 8.6, causing the necessity of this new paper on the same taxon. This paper is, then, a formal, ruled description, which must be mentioned as actual reference of the species' name. A more complete description and an abstract on the geology of the Adamantina formation, and of the Bauru basin, can be found in Ghilardi et al. (2010: 63-65, figs. 1-2). Bauru group is rich in fossil invertebrates, mainly freshwater bivalves. The finding of gastropods is, on the other hand, rare, both, in species and specimens. The genus *Physa* Draparnaud, 1801 is practically the single of the family Physidae (Pulmonata, Basommatophora), it occurs worldwide in tropical and subtropical freshwater environments, and it is characterized by sinistral (left-handing coiled), small snails. Representatives occur since the Cretaceous to Recent (Taylor, 2003). Another congener species occur in Bauru group: *Physa aridi* Mezzalira, 1974.

Systematics

Order: Basommatophora
Family Physidae

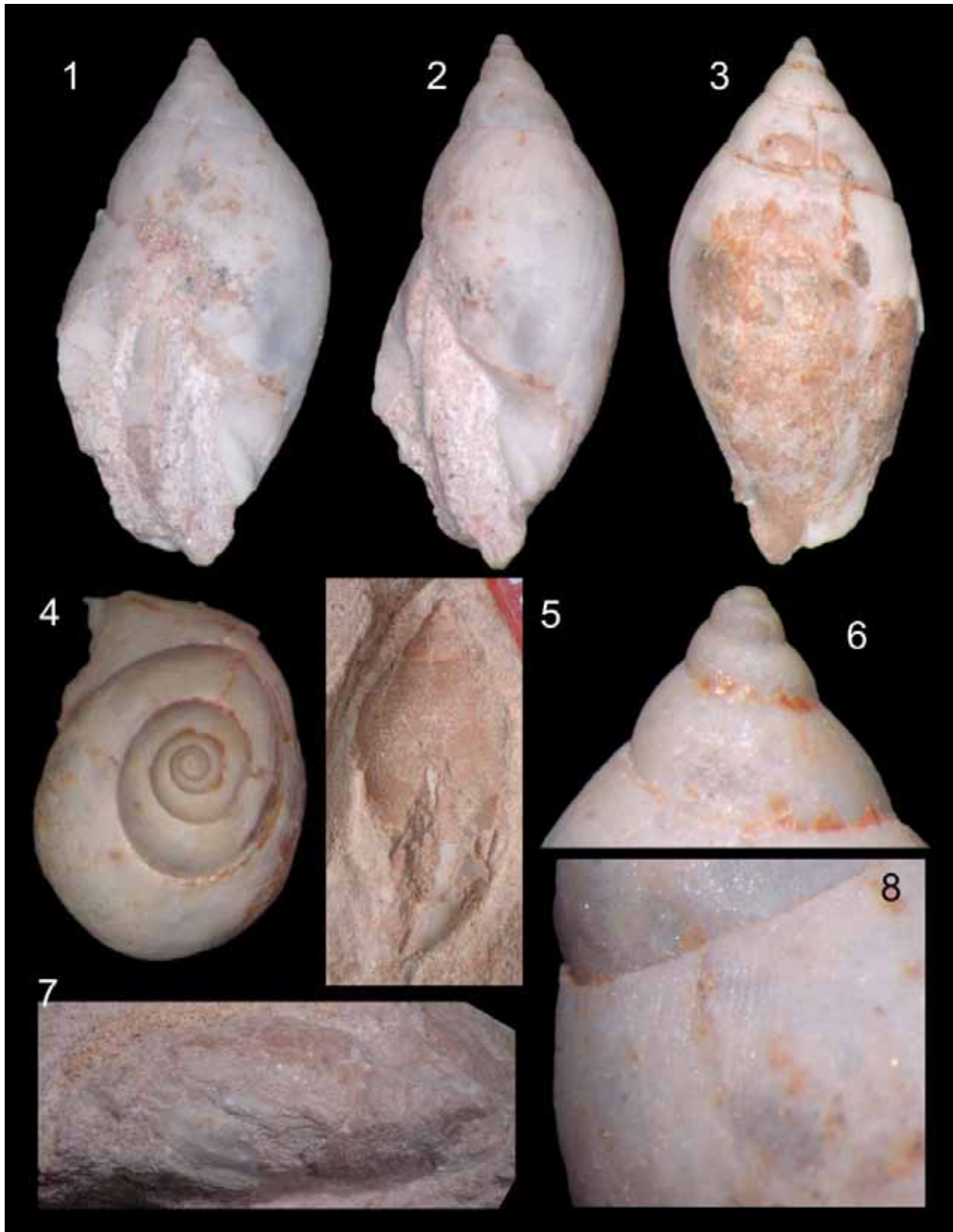
***Physa mezzalirai*, new species**
(Figs. 1-8)

Physa mezzalirai Ghilardi, Carbonaro & Simone, 2010: 63-67 (figs. 4A-H).

Types: Holotype MPM075 (Museu Municipal de Paleontologia de Marília). Paratype MPM076, same locality (copies in MZSP – Museu de Zoologia da Universidade de São Paulo).

Type locality: BRAZIL. São Paulo; outcrops in road Riacho Água – Formosa, 10 km south from Marília town, 22°20'28.14"S 49°56'41.94"W.

Stratigraphy: Adamantina formation, Bauru group, Turonian-Santonian, upper Cretaceous.



Figs 1-8 Types of *Physa mezzalirai* n. sp.. MPM075 holotype, 1, left view; 2, apertural view; 3, dorsal view; 4, apical view; 5, counter-mould kept in matrix; 6, detail of apical region in profile; 7, paratype, inner mould with remaining of shell in region of outer lip (center-inferior in Fig.); 8, detail of region between penultimate and last whorl, showing micro-sculpture close to suture.

Description

Shell from 11 to 14 mm long, elliptical-elongated, advolute. Width ~47% of length (Figs. 1-3). Spire with 6 whorls, apex pointed at ~30° (Figs. 5, 6). Body whorl wider in middle level, occupying ~7/10 from total length (Figs. 2, 5); dorso-ventral height ~70% of width (Fig. 4). Suture shallow, almost planar. Growth lines weakly visible; sculptured by lyrate, axial, delicate, shallow ribs (Fig. 8), clearer in region between spire and body whorl; this lyrate sculpture fainting from middle body whorl to inferior region of it. Aperture orthocone, about twice longer than wide, occupying ~70% of length (Figs. 1, 2, 5, 7). Umbilicus wanting.

Measurements (in mm): Holotype (Figs. 1-6, 8): 11.2 by 8.0; paratype (Fig. 7): 14.0 by 6.5.

Etymology: the species epithet refers to Dr. Sergio Mezzalira, a great contributor to the knowledge on Bauru group fossils.

Discussion

Physa mezzalirai differs from fossil species *P. wichmanni* Parodiz, 1961 and *P. doeringi* Doello-Jurado, 1927, both from Argentine Cretaceous, and from *P. aridi*, from São José do Rio Preto region, in having the wider proportion length/width of 2.24, while the remaining species are, respectively, 1.9, 1.3-1.7, and 1.7. The body whorl of *P. mezzalirai* is ~72%, while the other species are, respectively, 74, 79 and 75%. Related to the number of whorls, *P. mezzalirai* resembles *P. wichmanni*, in having ~6; but it differs from the other two species, which have 4-5 whorls (for additional morphometric parameters see Ghilardi et al., 2010, table 1). Additionally, *P. mezzalirai* differs from these other fossil species in having more elliptical outline and in having a shallow suture.

From the recent physid species (Simone, 2006: 181), *Physa mezzalirai* differs mainly by the wider body whorl, by shallower suture, by more spiral whorls, by narrower aperture, by sharper pointed spire, and by micro-sculpture in the body whorl (Fig. 8).

Acknowledgments

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