



## Revision of the Magellanic Mactridae Lamarck, 1809 (Bivalvia: Heterodonta)

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### Abstract

The worldwide family Mactridae Lamarck, 1809, is well represented in the southwestern Atlantic Ocean. Literature research revealed 22 living nominal species linked to Magellanic forms. Within this context, a taxonomic revision of the species belonging to the family Mactridae that inhabit the Magellanic area was carried out. The analysis was done by using morphological characters of the shell and describing the mantle cavity organs. After extensive fieldwork from Peninsula Valdés to Tierra del Fuego province, seven valid living species were confirmed. Synonymies of those valid forms have been updated, as have their geographic distributions. Redescriptions of the species here considered as valid, i.e.: *Mactra fuegiensis* Smith, 1905, *Mulinia bicolor* Gray, 1837, *Mulinia byronensis* Gray, 1837, *Mulinia edulis* (King & Broderip, 1832), *Mulinia exalbida* Gray, 1837, *Mulinia levicardo* (Smith 1881) and *Darina solenoides* (King & Broderip, 1832) are provided.

**Key words:** *Mactra*, *Mulinia*, *Darina*, Taxonomy, Southwestern Atlantic

### Introduction

The family Mactridae, known in North America since the lower Cretaceous (Skelton & Benton, 1993), includes five subfamilies: Mactrinae Lamarck, 1809, Lutrariinae H. Adams & A. Adams (1856), Kymatoxinae Stenzel & Krause, 1957, Zenatinae Dall, 1895, and Tanysiphoninae Scarlato & Starobogatov, in Nevesskaja *et al.*, 1971. Only Mactrinae, Kymatoxinae and Zenatinae are represented in the Magellanic area. The morphological character that defines mactrids is the V-shaped tooth in the left valve, which is formed by the fusion of two cardinal teeth (Keen, 1969). In the right valve, the cardinal teeth are unfused. The anterior and posterior lateral teeth have, in general, only one cusp. Several authors have previously studied anatomical characters such as ctenidia morphology, labial palps fusion, siphons, stomach and ultrastructure of shell to quantify the morphological variation within the group (Atkins, 1937; Yonge, 1948; Purchon, 1960; Stasek, 1963; Taylor *et al.*, 1973).

Taxonomic studies focused particularly on this family are scarce in local and regional literature despite the great abundance of mactrids species in South American waters. Previous authors contributed 22 nominal taxa described in the Magellanic area. Gray (1837, 1853), Reeve (1854) and Deshayes (1853, 1854, 1855) introduced approximately 60% of the described taxa in the study area. In addition, during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, E. A. Smith (1881, 1905) described additional mactrid species for the Magellanic area, all collected by the H.M.S. “Alert” and “Terra Nova” Antarctic expeditions. At approximately the same time, Philippi (1893) mentioned nine new species from southern Chile. Lamy (1913, 1914, 1917, 1925) studied the living species described by Lamarck (1818) housed at the MNHN. From the Magellanic Province Carcelles & Williamson (1951) published a catalogue in which he cited *Darina solenoides* (King & Broderip, 1832), *D. tenuis* (Philippi, 1845), *Mactra fuegiensis* Smith, 1905, *Mulinia byronensis* Gray 1837, *Mulinia edulis* (King & Broderip, 1832) and *Mulinia levicardo* (Smith, 1881). The main objective of this study is to review the taxonomy of the living species of the family Mactridae from the Magellanic Province.