

MACTRA GUIDOI N. SP. AND MACTRA PATAGONICA
(BIVALVIA: MACTRIDAE), TWO LONG MISUNDERSTOOD SPECIES
FROM SOUTHWESTERN ATLANTIC OCEAN

Javier H. Signorelli^{1*} & Fabrizio Scarabino²

ABSTRACT

A common mactrid from the southwestern Atlantic Ocean has been largely misunderstood in the literature. Since the early 20th century, this species has been referred to as *Mactra patagonica* d'Orbigny, 1846. However, the latter is recorded in Quaternary deposits of Northern Patagonia. *Mactra guidoi* n. sp. is described herein, including its shell ultrastructure, hinge features, and soft parts, and compared with the holotype of *M. patagonica*. To compare and to correctly identify both species, a morphometric analysis was carried out using conventional and geometric morphometric methods. *Mactra guidoi* n. sp. has an elongate shell that is more fragile than that of *M. patagonica*. In addition, its ventral posterior edge is usually sinuous. The ultrastructure of the shell reveals two layers with cross lamellar structure. The anatomical features agree with those of the congeneric *M. isabelleana*, although they differ in the morphology of the labial palps and foot. Morphometric analysis revealed significant differences between *M. patagonica* and the new species. The relative warp analysis allows us to understand the variation recognized by using CVA. Only *M. patagonica* revealed significant allometry between Relative Warp and Centroid size. Finally, the comparison of the types clearly points towards the existence of two different species.

Key words: *Mactra*, geometric, morphometric, southwestern Atlantic, anatomy.

INTRODUCTION

The cosmopolitan family Mactridae Lamarck, 1809 (Bivalvia: Heterodonta), is well represented in South American waters. The genus *Mactra* Linnaeus, 1767, has been cited from the southwestern Atlantic Ocean by d'Orbigny (1846), among others, when he described four species in his *Voyage dans Amérique Meridionale*. From the Uruguayan and Argentine coasts, he recorded two species: *Mactra isabelleana* (1846: 509; 1847: pl. 77, figs. 25, 26), and *Mactra patagonica* (1846: 507–510; 1847: pl. 77, fig. 27), collected in Maldonado Bay, Uruguay, and the Río Negro province coast, Argentina, respectively (Fig. 1). Several authors have contributed to the knowledge of this group in the literature of the second half of 19th century besides d'Orbigny, describing and discussing many species worldwide, including South America (Dall, 1894, 1897, 1901; Deshayes, 1853, 1854, 1855; Philippi, 1845, 1893a, 1893b; Reeve, 1854, Smith, 1881, 1905, 1914, 1915, among

others). The two main revisions of the taxonomy of mactrid species were by Lamy (1917–1918) and Küster & Weinkauff (1841–1884), who did not analyze the status of *Mactra patagonica*. Later, South American authors have mentioned as *Mactra patagonica* a common morphotype found on these coasts and in Brazil (e.g., Ihering, 1907; Carcelles, 1944; Barattini & Ureta, 1961; Figueiras & Sicardi, 1969; Castellanos, 1970; Rios, 1994). Aguirre (1994) found that this form, incorrectly called *Mactra patagonica* (*non* d'Orbigny, 1846) by Argentinean, Uruguayan and Brazilian authors, differs from the type material of d'Orbigny's species. However, she maintained an open nomenclature, mainly due to the scarce material available. Finally, Scarabino et al. (2006) considered this form to be an undescribed species. During an ongoing revision of the southwestern Atlantic species belonging to the family Mactridae, it became necessary to characterize this frequently mentioned morphotype, describing it as a new species herein called *Mactra guidoi* n. sp.

¹Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Av. Angel Gallardo 470 C1405DJR, Buenos Aires, Argentina

²Museo Nacional de Historia Natural y Antropología, C. C. 399, C. P. 11.000, Montevideo, Uruguay

*Corresponding author: jsignorelli@macn.gov.ar

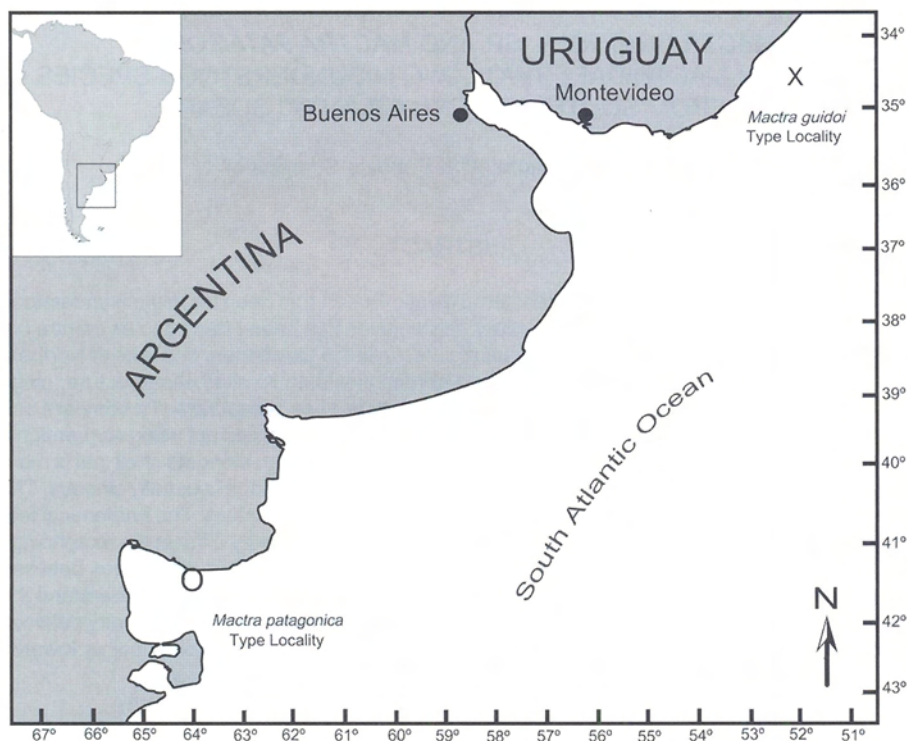


FIG. 1. Map of the study area showing the type localities of *Mactra patagonica* d'Orbigny (o) and *Mactra guidoi* n. sp. (X).

Despite the frequent records of this species, very little live-collected material is available in museum collections. Recent efforts to locate these few lots yielded material that allows this new description. Also, recent collection of *M. patagonica* (d'Orbigny) from the type locality in Río Negro Province, Argentina, enabled comparison of the two taxa.

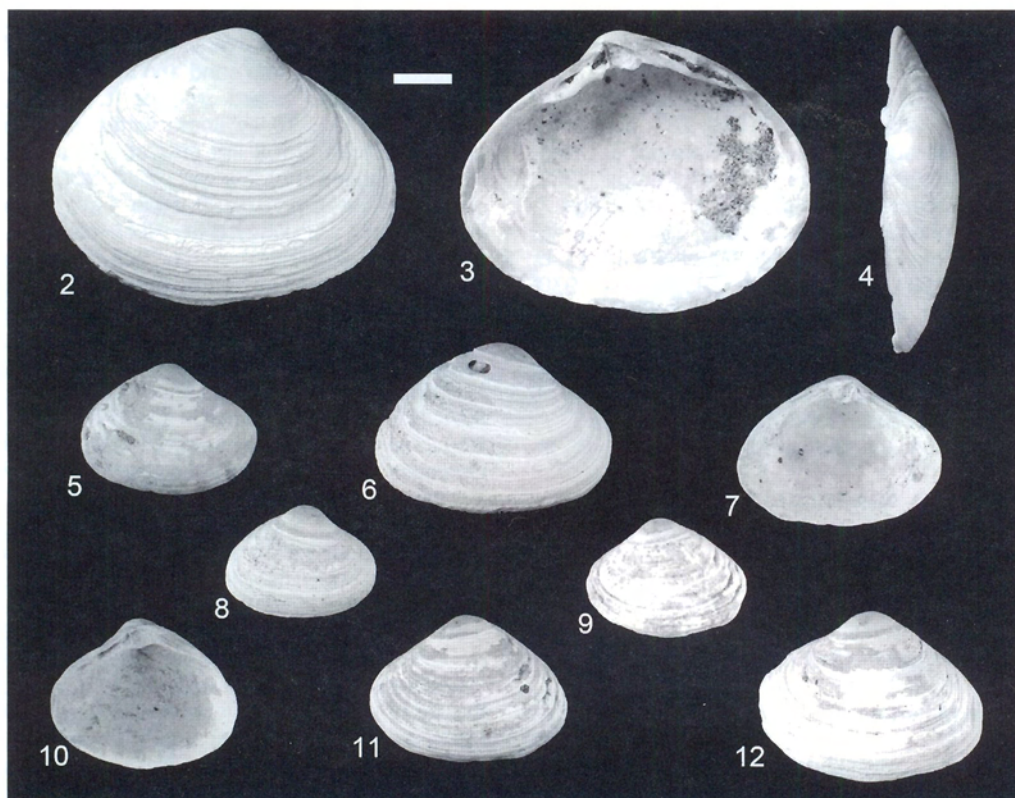
MATERIAL AND METHODS

The collections examined to determinate the distribution of this species are those housed in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN) and Museo de la Plata (MLP) in Argentina; Museo Nacional de Historia Natural y Antropología (MNHNM) and Museo Zoológico Municipal "Dámaso A. Larrañaga" (Barattini collection, MZM) in Uruguay; Museu de Zoologia da Universidade de São Paulo (MZUSP), Museu Oceanográfico, Fundação Universidade do Rio Grande (FURG), and Museu Nacional de Rio de Janeiro (MNRJ) in Brazil. In

addition, two of the main North American malacological collections [Academy of Natural Sciences of Philadelphia (ANSP) and National Museum of Natural History, Smithsonian Institution (USNM)] were also surveyed. Several field expeditions were conducted on the Uruguayan and Argentine coasts, including the type locality in Río Negro province (Fig. 1), to collect live specimens. The holotype of *Mactra patagonica* d'Orbigny, 1846 (NHM 1854.12.4.668) (Figs. 2–12), was also examined. In this paper, live-collected specimens are indicated as "lv", articulated valves as "av," and single valves as: "sv".

The hinge was described by using the method developed by Bernard and Munier Chalmas (according to Cox, in: Cox et al., 1969). The ultrastructure of the shell was analyzed with a Phillips XL30 scanning electron microscope (SEM). A general description of the soft tissues was done using a camera lucida Leica MZ 9.5 and SEM pictures.

To fully characterize the differences between *Mactra patagonica* and *M. guidoi* n. sp., a morphometric study on the shells was carried out.



FIGS. 2–12. *Mactra patagonica* d'Orbigny, 1846. FIGS. 2–4: Holotype, NHM 1854.12.4.668; FIGS. 5–12: Topotypes, (MACN 37570). Scale bar = 1 cm.

Conventional morphometric analysis was done by measuring three parameters with a caliper (length, height and width). Additionally, a geometric morphometric analysis was completed. In the interior side of each left valve 11 Type 1 landmark coordinates (Rohlf, 1996) were recognized from digital images (Fig. 32) by using the software TPSdig2 version 2.05 (Rohlf, 2006). The digitalized data obtained were used to calculate specimen size as centroid size, and to describe the shape. Shape description of was obtained using a principal warp method (RWA), comparable to a Principal Component Analysis, which summarizes a specimen's shape as a deformation from a common reference. This study was performed with tpsRelw (Rohlf, 2005). The difference between species was tested with a multivariate analysis of variance (MANOVA) of partial warp scores and posterior categorization was revealed by using canonical variates analysis (CVA). Statistical analysis was done with Statistica 7.0 for Windows (StatSoft, Inc., 2004).

RESULTS

Superfamily Mactroidea Lamarck, 1809
 Family Mactridae Lamarck, 1809
 Subfamily Mactrinae Lamarck, 1809
 Genus *Mactra* Linnaeus, 1767

Type species: Cardium stultorum Linnaeus, 1758; SD Fleming, 1818.

Diagnosis: Trigonal to oval valves, concentrically sculptured, without radial sculpture, subequilateral, inflated, with a brownish periostracum; external ligament separated from the internal by a shelly lamina; lateral teeth smooth; pallial sinus rounded, oval to triangular.

Remarks: The supraspecific systematics of Mactrinae awaits world-wide revision and cladistic analysis. The inclusion of each species here treated in *Mactra* should therefore be considered tentative.

***Mactra guidoi* new species**
(Figs. 13–24)

Mactra patagonica (non d'Orbigny) – Ihering, 1907: 423; Carcelles, 1944: 283, pl. 10, fig. 82; Barattini, 1951: 247; Barattini & Ureta, 1961: 169; Figueiras, 1961: 17; Parodiz, 1962: 42; Richards & Craig, 1963: 137, pl. 2, figs. 7, 8; Figueiras & Sicardi, 1969: 365, pl. IV, fig. 54; Forti Estevez, 1969: 90, pl. 50, fig. 1a, b; 1984: 581, pl. 3, fig. 9a, b; Castellanos, 1970: 235, pl. 21, figs. 1–3; Closs & Forti, 1971: 32, pl. 3, fig. 6a, b. Scarabino, 1977: 210; Figueiras & Sicardi, 1980: 137; Rios, 1966: 33; 1975: 235, pl. 74, fig. 1127; 1985: 243, pl. 86, fig. 1209; 1994: 265, pl. 90, fig. 1291.

Mactra aff. *patagonica* Aguirre, 1994: 138, pl. 1, fig. 12.

Mactra sp. Scarabino et al., 2006: 164.

Type Locality

60 km ENE of Cabo Polonio, Uruguay (34°10'S, 53°04'W; 29 m) collected using a shrimp trawl in 1982 (Fig. 1).

Type Material

Holotype: Articulated valves MNHN 15526; paratypes MNHN 15527 (3 sv, 2 av); MACN 37507 (1 av); MNHN 21121 (1 av); FURG 30536 (1 av); USNM 878150 (1 av). All collected in the type locality. MNRJ 9261 (2 lv in alcohol), 23 km Southeast of Chuy, Uruguay (33°52'00"S, 53°10'6"W; 22 m).

Etymology

Named after Dr. Guido Pastorino, advisor and friend of the authors in recognition of his teachings and advice over the years.

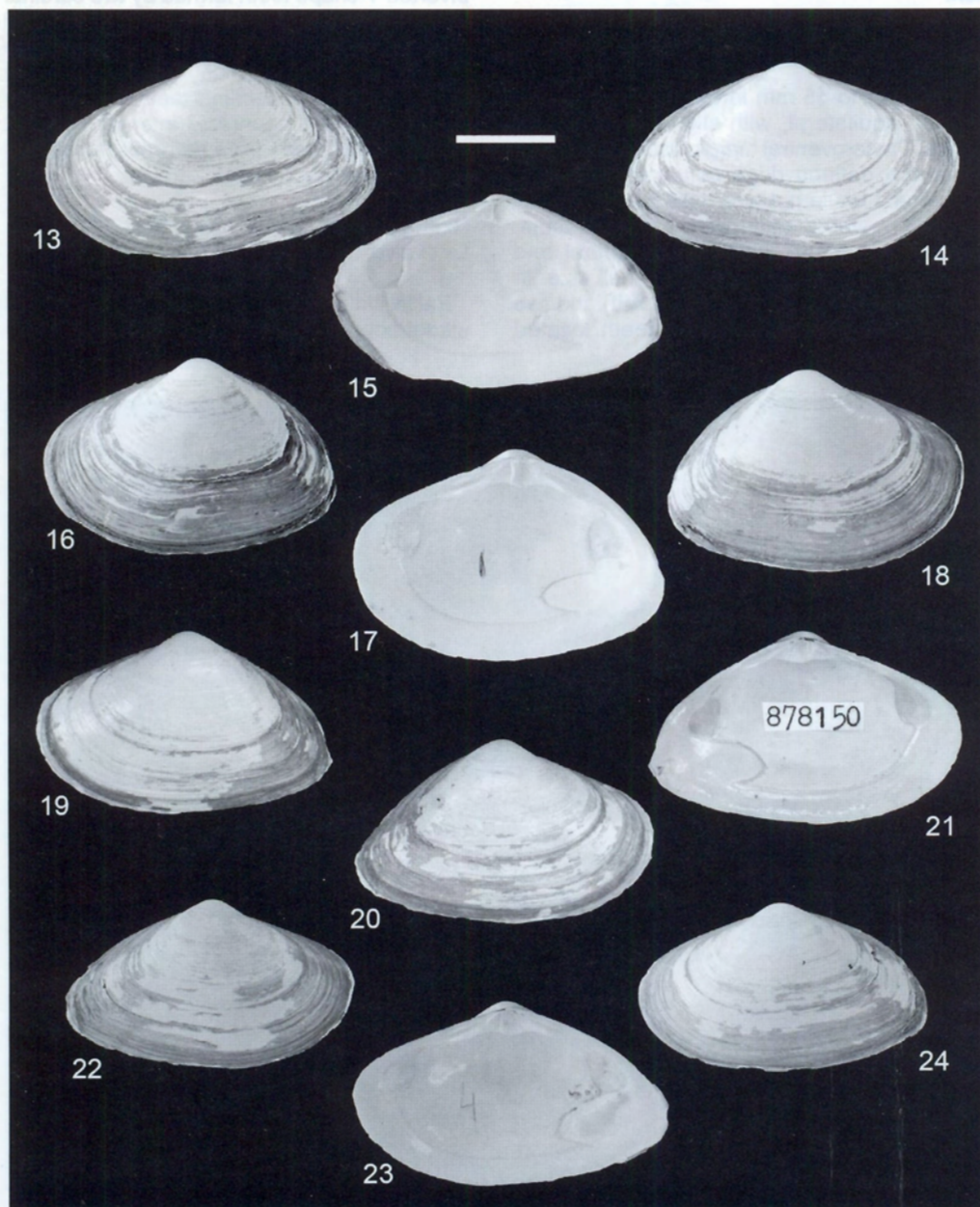
Material Examined

Guarapari, Espírito Santo, Brazil (FURG 14252; MZUSP 77334, 2 sv; MZUSP 77295, 5 sv); Rio de Janeiro, Brazil (USNM 96121, 2 sv; FURG 15056, 8 sv without periostracum; FURG 28169, 3 sv); 48 km SE of São Sebastião, São Paulo, Brazil (MNHN 8725, col. by L. Tommasi in 1962, 110 m, sand and mud, 21 sv); Porto Belo, Santa Catarina, Brazil (FURG 16532, 6 sv without periostracum); Rio Grande do Sul, Brazil (FURG 32905, 13 av with periostracum); Cassino, Rio Grande do Sul, Brazil (FURG 16420, 1 sv); Chuy, Uruguay (FURG 27088, 18 av with periostracum; FURG 21423, 36 sv with-

out periostracum); 62 km ENE of Cabo Polonio, Uruguay (34°10'S–53°04'W), Uruguay, R/V "Aldebaran", 29 m, fine sand and muddy sand, Spatangue and Piccard dredges (topotypes, MNHN 15531, 10 av some with remnants of periostracum); 102 km off Cabo Castillos, Rocha, Uruguay, (F/V "Narval"), (MNHN 2393, col. by J. Alvarez in 1970, 60–70 m, 1 sv); Cabo Polonio, Rocha Uruguay, (MNHN 8465, 23 m, muddy sand, R/V "Hero", cruise 1972–3^a, station 10, col. in 1972, 43 sv); Cabo Polonio, Rocha, Uruguay (MNHN 15333, col. by F. Scarabino & I. Pereyra in 2004, 1 sv; MLP 5241, 1 sv); Rocha, Uruguay (FURG 855, 3 sv with periostracum, MZM no number, 7 sv); La Paloma, Uruguay, (MACN 15390, 4 sv; MNHN 15121 col. by M. Demicheli in 1998, 3 av; MACN 15167, col. by Carcelles, 1 sv; MNHN 2465, col. in 1962 by J. Olazarri, 1 sv; MNHN 7335, col. in 1957 by Klappenbach, 5 sv); 80 km S of La Paloma, Rocha, Uruguay, col. by J. Alvarez in 1970, 60 m (F/V "Narval") (MNHN 4666, 1 sv); Maldonado, Uruguay (ANSP 251819, col. by Pilsbry in 1950, 3 sv; ANSP 251779, col. by Pilsbry in 1950, 2 sv; USNM 347543); Punta del Este, Uruguay (MACN 15189, col. by Carcelles in 1920, 1 sv); Arenas de Carrasco, Canelones, Uruguay (MNHN 15532, col. by F. Scarabino in 1990, subfossil, 7 sv); Río de la Plata, Argentina (USNM 96165, 1 sv without periostracum); Mar Chiquita, Argentina, (MACN 21203, col. by Doello-Jurado, 4 sv); Mar del Plata, Argentina (MACN 11965, col. by Doello-Jurado in 1920, 50 sv without periostracum, including the valve illustrated in Carcelles 1944: 283, pl. 10 fig. 82; MACN 9361-2, col. by Doello-Jurado, mytilid bank, 20 sv; MACN 8810, 10 sv; MACN 10313, col. by Doello-Jurado in 1920, 20 sv; MACN 8814, Patria sta. 64, 2nd expedition, 8 sv; MACN 8815, Patria sta. 65, 2nd expedition, 10 sv; MACN 8816, Patria sta. 75-76-77, 9 sv; MACN 8817, Patria sta. 79, 3rd expedition, 16 sv); Miramar, Argentina (MACN 8451-8, col. by Doello-Jurado, 4 sv; MACN 9248-1, col. by J. Dupuy, 9 sv; MLP 9376, 1 sv); Quequén, Argentina (MACN 21139, 1 valve); Necochea, Argentina (MLP 3895, 10 sv); Claromecó, Argentina (MLP 1455, 2 sv; MLP 9375, col. by Hylton Scott, 2 sv; MLP 2351, 10 sv); Monte Hermoso, Argentina (ANSP 72644, col. in 1898, 2 sv; USNM 152884, 2 sv; MLP 9382, 2 sv; MLP 9374, 2 sv; MLP 1836, 3 sv; MACN 9210-6, 5 sv); Puerto Militar, Argentina (MNHN 4009, col. by Fontana in 1919, 10 sv; MACN 6620-4, col. by H. von Ihering, 4 sv; MACN 11187, col. by Doello-Jurado in 1920, 4 sv); Bahía Blanca, Argentina (MACN 24203, col. by Pozzi-Motti in 1939, 23 m depth, 6 sv

without periostracum); Villarino, San Matías Gulf, Argentina (MLP 2758, 7 sv); Patagonia, Argentina (MACN 11434, col. by Sr. Greslebin in 1920, 9 sv; MACN 11689, col. by Sr. Greslebin

in 1920, 9 sv); San Antonio Oeste, Argentina (FURG 16267, 2 av with periostracum); Punta Norte, Valdés Península, Argentina (MACN 11513, col. by Kraglievich in 1920, 14 sv).



FIGS. 13–24. *Mactra guidoi* n. sp. FIGS. 13–15: Holotype, MNHNM 15526; FIGS. 16–24: Paratypes; FIGS. 16–18: MACN 37507; FIGS. 19–21: USNM 878150; FIGS. 22, 23: MNHN 21121; FIG. 24: FURG 30536. Scale bar = 1 cm.

Diagnosis

Shell elongate, moderately stout, elliptical; pallial sinus rounded, short; posteroventral margin usually sinuous; periostracum brownish.

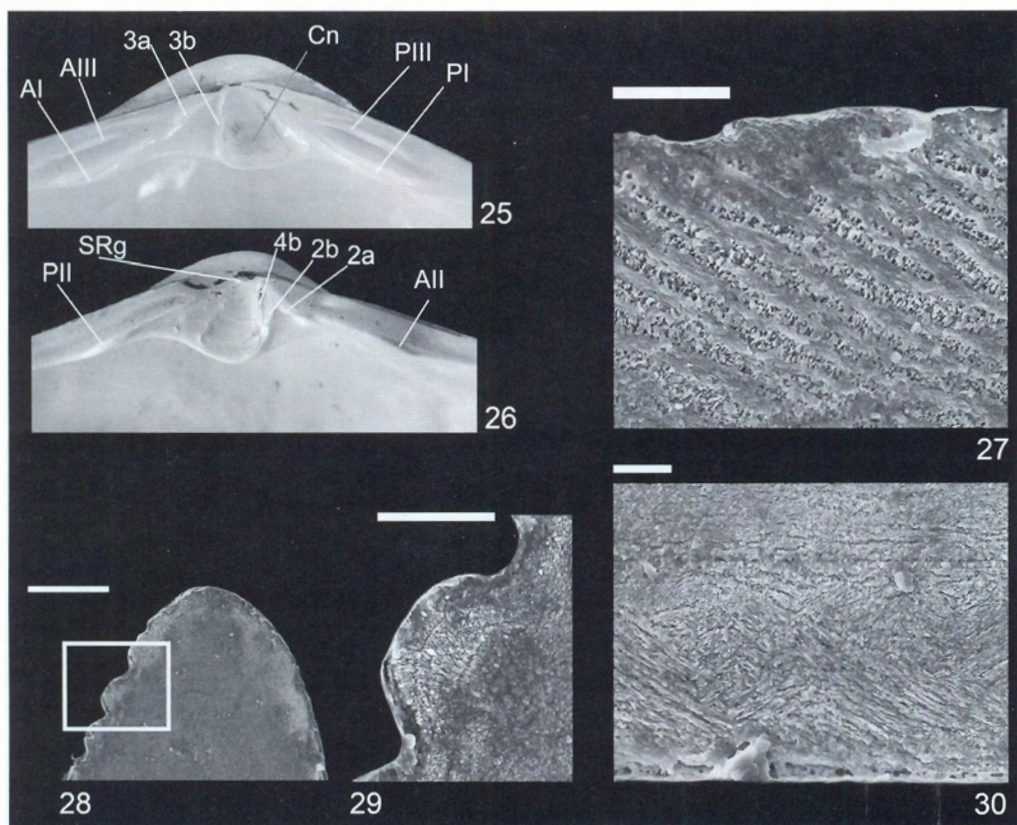
Description

Shell: Up to 45 mm in length, elongate, elliptical, equilateral, with slightly prosogyrate umbo. Posteroventral margin usually sinuated. A weakly defined ridge delineates a posterior area. Lunule not well delineated. Surface smooth, covered by brownish periostracum. Heterodont hinge with small cardinal and lateral teeth in relation with the shell size. In right valve, two anterior (LAI & LAIII) and two posterior (LPI & LPIII) lateral teeth located

close to cardinals, parallel and short, the ventral one being the strongest. Two cardinal teeth, posterior cardinal (3b) oriented dorsoventrally flanking chondrophore; anterior (3a) inclined toward anterior (Figs. 25, 26). In left valve, inverted V-shape tooth formed by two cardinal teeth (2a & 2b), the posterior one flanked by accessory lamellae (4b). Two lateral teeth, one anterior and one posterior, each with only one cusp (LAI & LPII). Cardinal teeth continued by shelly ridge that separates internal ligament (seated in resilifer) from external (small and poorly developed). Hinge formula:

Right valve: AI AIII 3a 3b PI PIII
Left valve: AII 2a 2b 4b AII

Pallial sinus short, rounded, U-shaped. Shell ultrastructure composed of two aragonitic lay-



FIGS. 25–30. Shell of *Mactra guidoi* n. sp. FIGS. 25, 26: Hinge; FIG. 27: Outer cross-lamellar layer, Scale bar = 20 µm; FIGS. 28, 29: Radial section of the inner side of the lateral teeth showing the ultrastructure. Scale bar = 100 µm and 20 µm respectively; FIG. 30: Inner complex cross-lamellar layer. Scale bar = 1,000 µm.

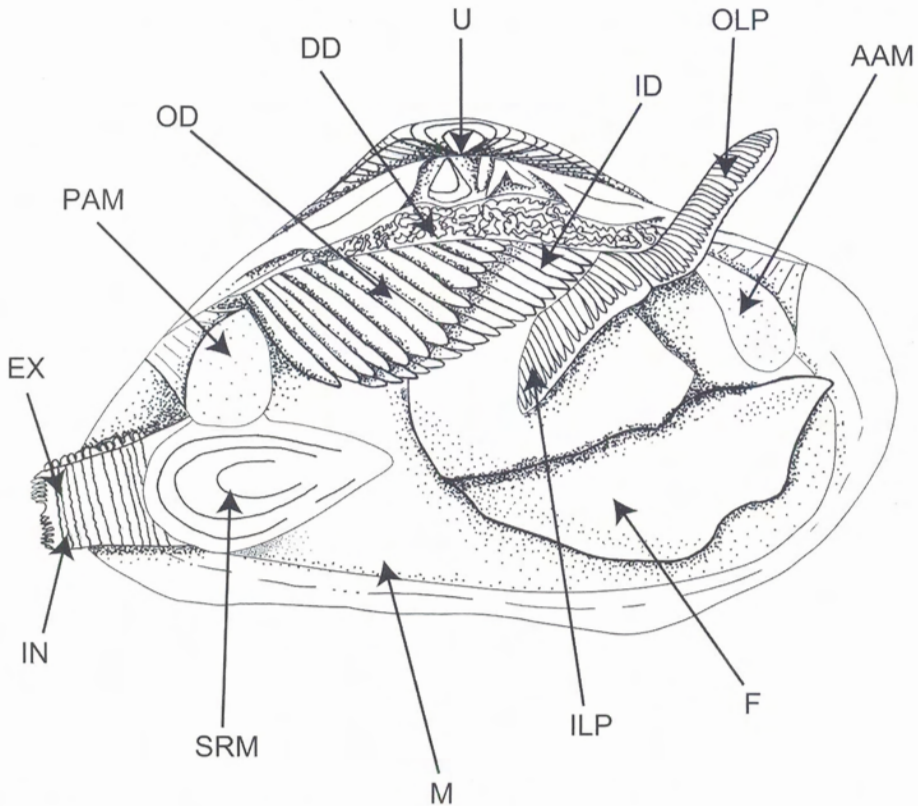


FIG. 31. Anatomy of *Mactra guidoi* n. sp. (AAM, anterior adductor muscle; DD, digestive diverticulum; EX, excurrent siphon; F, foot; ID, inner demibranch; ILP, inner labial palp; IN, incurrent siphon; M, mantle; OD, outer demibranch; OLP, outer labial palp; PAM, posterior adductor muscle; SRM, siphonal retractile muscle; U, umbo) Scale bar = 1 cm.

ers; outer cross-lamellar layer constituted by very thin lamellae; inner layer thinner, with complex cross-lamellar structure (Figs. 27, 30).

Cross-section of dorsal posterior lateral tooth showing radial ultrastructure of internal pustules (Figs. 28, 29) assisting in articulation of lateral teeth. External ligament small, poorly developed, placed in nymph. Internal ligament located in small, ventrally projected chondrophore (Figs. 25, 26).

Anatomy: Adductor muscles large; anterior slightly larger than posterior. Foot laterally compressed, directed anteroventrally. Mantle not fused along ventral edge, but with single point of fusion to form posterior exhalant aperture surrounding siphons (Fig. 31).

Labial palps triangular, very elongate, with inner surfaces plicate and the outer surfaces

smooth. Eulamellibranch ctenidia formed at posterior end, surrounding body, each ctenidium consisting of inner and outer demibranch.

Type C siphons of Yonge (1948), covered completely with periostracum where inner surface of outer mantle fold extends (Fig. 31), representing greatly extended inner surface of outer fold (Yonge, 1957).

Morphometric Analysis: The morphological study of the shells revealed clear differences between the two species. Traditional morphometric analysis demonstrated that the shell of *Mactra patagonica* is more inflated and less elongate than *M. guidoi* n. sp. (Fig. 33). The geometric morphometric method by means of multivariate analysis of variance (MANOVA) revealed significant differences in the shell shape of the two species (Wilks' lambda =

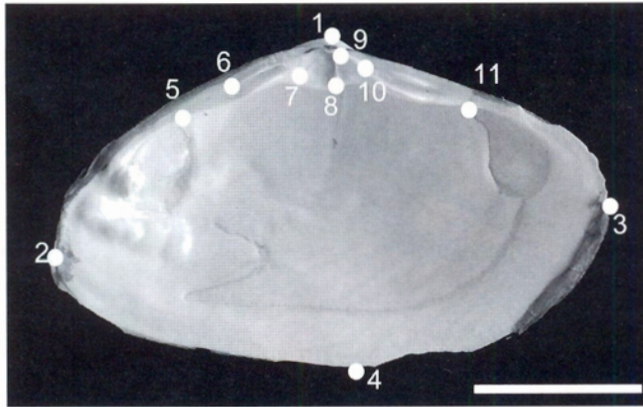


FIG. 32. Internal view of left valve of *Mactra guidoi* n. sp., showing the location of Type I geometrically homologous landmarks. Numbers indicate the order used for digitization of the landmarks. Scale bar = 1 cm.

0.0742; $p < 0.0001$). This differentiation was demonstrated in a Canonical variates analysis (CVA) (Fig. 34).

The RWA allowed understanding the variation recognized by CVA and summarized the descriptions of shape of specimens as linear combinations. The first three RWs explained 76.87% of the variance (RW1 = 53.27%, RW2 = 12.25%, and RW3 = 11.35%) (Fig. 34). To infer the origin of the variation, a test between RWs and centroid size was performed (Fig. 35). The two taxa did not differ significantly in centroid size distribution (ANOVA: $F = 1.686$, $p = 0.20$). In the analysis between RW and

centroid size, only the first relative warp showed significant correlation (Pearson's $r^2 = 0.337$, $p = 0.025$). Linear regression was tested in each taxon. However, only *Mactra patagonica* revealed significant allometry between RW and centroid size (Linear Regression: $r^2 = 0.359$, $p = 0.014$).

Distribution and Ecological Remarks

According to the material examined, *Mactra guidoi* n. sp. can be found in sandy and muddy sand sediments from Espírito Santo, Brazil, to the Valdés Peninsula, Argentina. Valves with

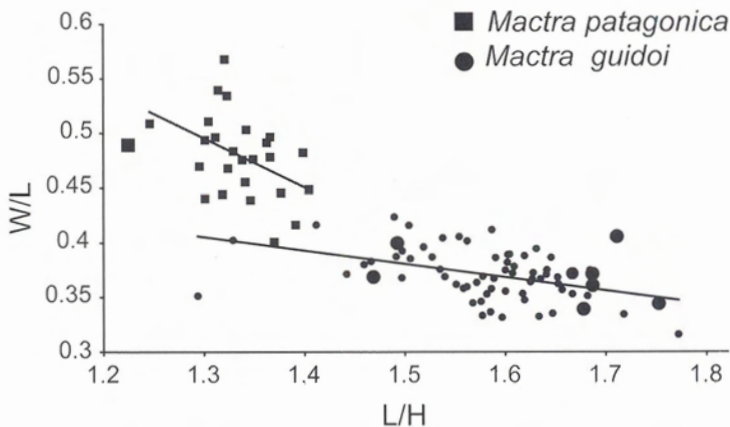


FIG. 33. Traditional morphometric analysis. Relation width/length vs. length/height. Types indicated by large symbols.

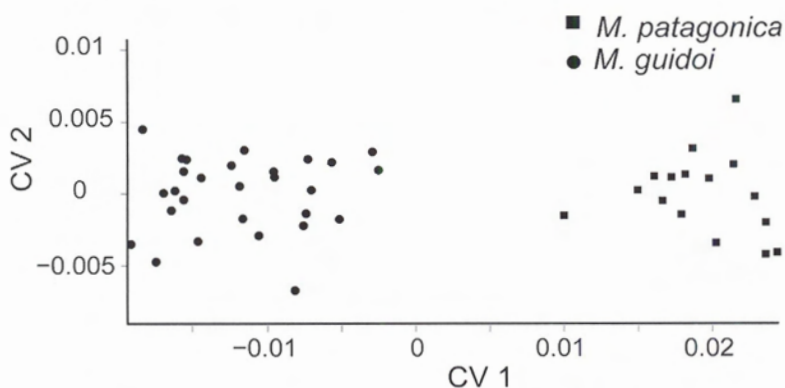


FIG. 34. Canonical variates analysis showing the morphometric variation between *Macra patagonica* (full squares) and *Macra guidoi* n. sp. (full circles).

periostracum have been obtained between 20 and 50 m. However, the real depth distribution of living specimens could be more restricted. Live-collected specimens are scarce in all examined collections, but isolated valves are very abundant along the coasts of southern Brazil, Uruguay, and northern Argentina. Scarabino et al. (2006) stressed the contrast between these large number of valves and the few living records, postulating either a population decline and/or the high potential of preservation of the valves. In fact, most components of these beach shell accumulations show a subfossil aspect and most likely come from Holocene deposits.

The type series as well as many valves examined show clear evidence of infestation by

a spionid polychaete, that is, blisters formed in the posterior end in large specimens (Figs. 23, 24) and in the middle of the valve in smaller shells. Boring made by naticids have been also noticed in the umbonal area of several valves.

Macra guidoi n. sp. is relatively common in Quaternary deposits of southern Brazil, Uruguay, and northern Argentina and was cited as *Macra patagonica* (e.g., Figueiras, 1961; Parodiz, 1962; Closs & Forti, 1969).

Remarks

The first mention of *Macra guidoi* n. sp. in Uruguayan Quaternary deposits was by Figueiras (1962), when he also introduced the

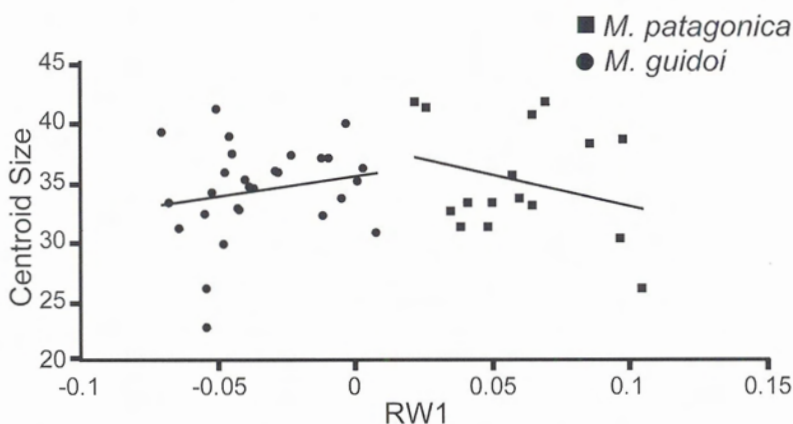


FIG. 35. Allometric curves derived from the relationship between RW 1 and CS. *Macra patagonica* (full squares) and *Macra guidoi* n. sp. (full circles).

question about the possible synonymy with *M. duboisi* Doello-Jurado (a *nomen nudum*) cited by de Mata (1947). Examination of a lot from Mar del Plata, Argentina, in Barattini's collection (MZM), with an old label possibly written by Doello-Jurado or Felippone, indicates that *M. duboisi* is a name *in schedula* for *Macra marplatensis* Doello-Jurado, 1949.

DISCUSSION

The holotype of *Macra patagonica* (Figs. 2–4), collected by d'Orbigny from Quaternary deposits in Río Negro Province, clearly differs from the specimens of *M. guidoi* n. sp. (Figs. 13–15). The topotypic specimens of *M. patagonica* illustrated (Figs. 5–12) are smaller compared with the holotype. However, other specimens collected at the type locality were similar in size. These were broken shell specimens and for this reason were not illustrated. In addition, a complete survey of museum material of *M. patagonica* and *M. guidoi* n. sp. in several institutions allowed us establish that the former was only recorded as a fossil from Quaternary deposits. This species is similar in shape to the Recent *M. isabelleana* d'Orbigny, 1846, but the systematic relationship between two taxa is not studied in this paper. *Macra guidoi* n. sp. was collected as a Quaternary subfossil as well as live material.

Recognition of two morphologically distinct species lay hidden for many years. Aguirre (1994) was the first in mentioning this divergence, but left the nomenclatural problem unresolved, a misunderstanding that we were able to track back to Ihering (1907). A specimen in the MACN collection (6620-4) with a label written by Ihering clearly belongs to *M. guidoi* n. sp. In the following decades, Doello-Jurado and Carcelles worked in the MACN collections, and also continued this misidentification. Carcelles (1944) illustrated *M. guidoi* n. sp. as *M. patagonica*, and since then, other authors have repeated the misconception. The obvious differences between species led us to conclude that none of these authors examined the type material collected by d'Orbigny and housed in The Natural History Museum, London. Although several authors (e.g., Figueiras, 1961) did not illustrate the materials attributed to *M. patagonica*, they also had the same misconception of this species, which has been omnipresent on labels and in the literature since Carcelles (1944). Only Feruglio (1933), who collected

material in deposits similar to those of d'Orbigny in North Patagonia, properly cited the species described by the French author.

Two contrasting morphotypes are commonly found in Atlantic waters of southern Brazil, Uruguay, and northern Argentina, one belonging to *Macra isabelleana* (up to 70 mm) and the other to *M. guidoi* n. sp. (up to 45 mm). In general, *M. patagonica* could be included in the first group. Searching for an explanation of the misconception of Ihering, we found three likely causes acting together. The shape of the drawing of *M. patagonica* by d'Orbigny (1846) has some differences but broadly matches that of the type material. However, given the sizes of the drawings of the three *Macra* illustrated on his plate, Ihering would have had the impression that *M. patagonica* was smaller than *M. isabelleana* and similar in size to *M. petiti* d'Orbigny, 1846 (p. 509; 1847: pl. 77, figs. 23, 24), as is in fact *M. guidoi* n. sp. Those differences, however, are not the case, and the measurements indicated in the text by d'Orbigny are 60, 39 and 30 mm long respectively. Secondly, d'Orbigny referred *M. patagonica* as being "bien plus ovale, plus comprimée, et sa forme est différente" than that of *M. isabelleana*, a comparison which also applies (even more so) to *M. guidoi* n. sp. Finally, Ihering probably was under the impression that d'Orbigny found and described the two most common mactrid shells of the coast of southern Uruguay and northern Argentina.

Shell ultrastructure basically agrees with previous studies of other mactrids (Taylor et al., 1973). The scarce material with soft tissues did not allow a detailed anatomical study. However, the gross morphology illustrated here provides a preliminary comparison with the congeneric *M. isabelleana*. The anatomical characters of *M. guidoi* n. sp. differ from those of *M. isabelleana* in having more elongate labial palps and a larger foot in relation to the entire body. The ctenidia are similar and so are the siphons (Type C of Yonge, 1948).

Morphometric analysis revealed and quantified the differences between *M. patagonica* and *M. guidoi* n. sp. Whereas traditional morphometry was sufficient to distinguish the two taxa, geometric morphometric method allowed us to quantify that difference. The species described by d'Orbigny has strong valves with well-developed teeth. *Macra guidoi* n. sp. is more elongate and fragile.

Correction of this nomenclatural problem emphasizes the significance of re-examining type material.

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