

A New Species of *Mysella angas*, 1877 from Southern Chile (Bivalvia: Galeommatoidea)

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A NEW SPECIES OF *MYSELLA* ANGAS, 1877
FROM SOUTHERN CHILE (BIVALVIA: GALEOMMATOIDEA)

Marina Güller^{1,2*} & Diego G. Zelaya^{2,3}

INTRODUCTION

The Patagonian fjord region, extending from Puerto Montt (41.5°S) to Cape Horn (56°S), is the most diverse but also the most neglected part of the Chilean coast (Häussermann & Försterra, 2009). With a total of 60 currently known species, bivalves are relatively well-represented, although Zelaya (2009) pointed out that the diversity of this group could be significantly increased when more detailed studies, particularly those considering small-sized species, are done. The checklist for the area includes currently only one species of *Mysella*, *M. mabillei* (Dall, 1908). This contribution deals with the description of a second, new species of *Mysella* from the area, and its comparison with the other species of the genus currently known from Chilean waters.

MATERIAL AND METHODS

The specimens here studied were obtained between 10 and 113 m deep, by using a 2 mm mesh-size net, sorted from the sediment under a stereoscopic microscope, and deposited at the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (MACN), Buenos Aires and the Museo de La Plata (MLP), La Plata.

Specimens were studied and illustrated with scanning electron microscopy (SEM). Shell length (L) refers to the maximum antero-posterior distance; shell height (H) to the maximum dorso-ventral distance, perpendicular to L; and shell width (W) to the maximum distance across united valves. The mean, standard deviation, and number of specimens measured (n) for the ratio H/L and W/H, are given. Anatomical information was obtained from Raillet-Henry decalcified specimens, dissected under stereoscopic microscope.

SYSTEMATICS

Mysella cahuelmensis, n. sp.
(Figs. 1–13)

Type Locality: 42°15'22"S, 72°23'48"W, Fiordo Cahuelmo, Chile, 10–30 m.

Type Material: Holotype (MACN-In 38938) and 14 paratypes from the type locality (5 specimens and 4 coated embryos, MACN-In 38939; 4 specimens and 1 valve, MLP 13545).

Other Material Examined: 2 specimens, 2 valves, 42°15'24"S, 72°24'10"W, Fiordo Cahuelmo, Chile, 50–95 m (MLP 13546); 1 specimen, 42°15'37"S, 72°25'52"W, Fiordo Cahuelmo, Chile, 70–113 m (MACN-In 38940).

Diagnosis: Shell ovate, flat; with coarse comarginal cords; anterior end produced; dorsal margin short, straight to slightly curved; ventral margin projecting anteriorly; beaks inflated, posterior to midline.

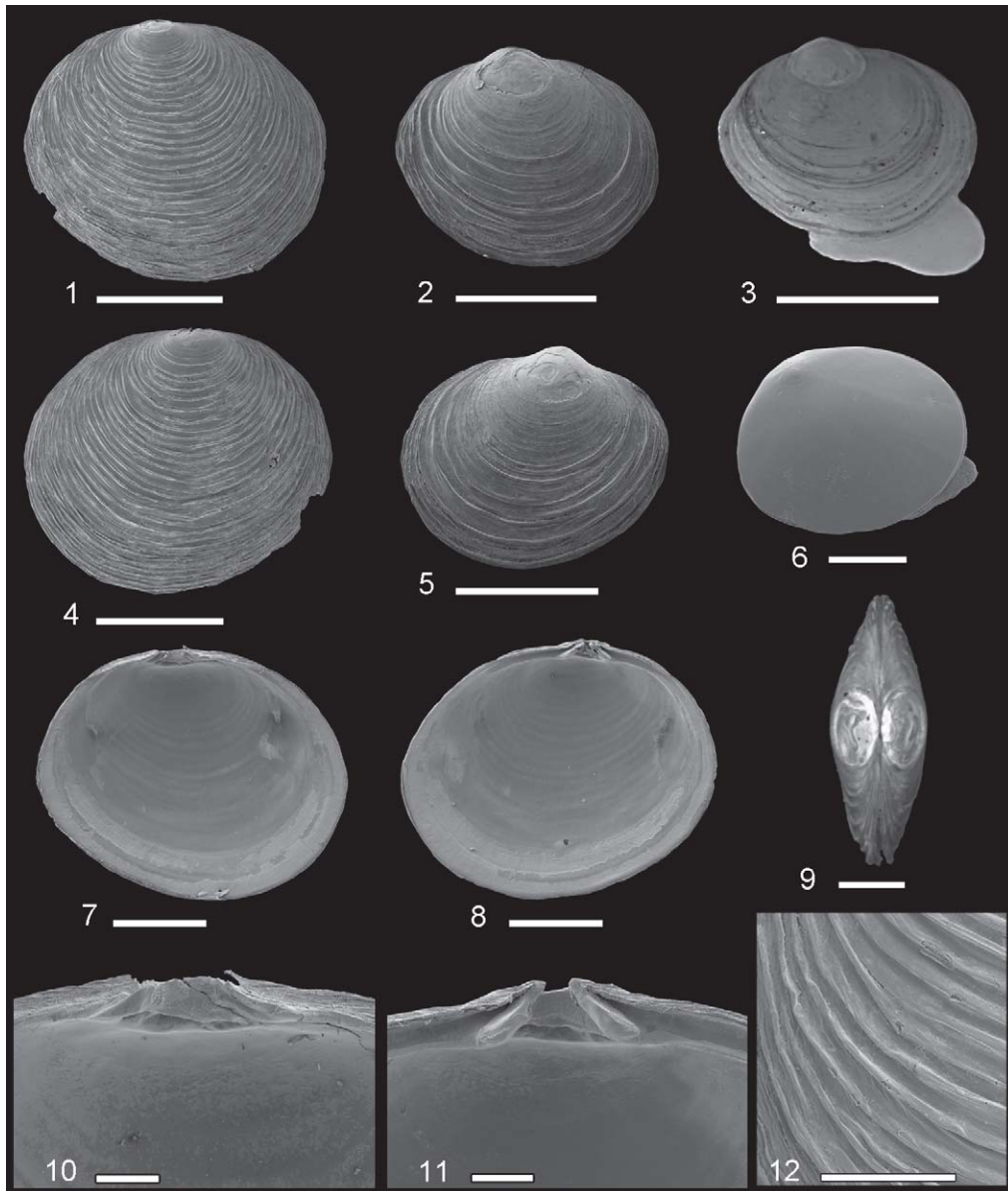
Description: Shell relatively large for genus (maximum observed length = 5 mm), ovate (H/L = 0.82 ± 0.05 mm, n = 13), compressed (W/H = 0.46 ± 0.06 mm, n = 13), thin, white (Figs. 1–5, 7–9). Anterior end produced, more markedly in small-sized specimens; posterior end shorter and lower than anterior (Figs. 1–5, 7, 8). Anterior and posterior parts of dorsal margin short, similar in length, straight, horizontal to slightly sloping (Figs. 1–5, 7, 8). Anterior margin widely curved, forming a weak angle at junction with dorsal margin, broadly rounded ventrally. Ventral margin projecting anteriorly. Ventral part of posterior margin continuous with ventral margin; dorsal part obliquely

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FIGS. 1–12. *Mysella cahuelmensis*, new species. FIGS. 1, 4, 12: Holotype (MACN-In 38938); FIGS. 2, 5–11: Paratypes (MACN-In 38939); FIG. 3: Specimen from the type locality, decalcified for anatomical studies; FIGS. 1–5: Outer views; FIGS. 1–3: Right valve; FIGS. 4, 5: Left valve; FIG. 6: Larva removed from an adult; FIGS. 7, 8: Inner views; FIG. 7: Left valve; FIG. 8: Right valve; FIG. 9: Dorsal view; FIGS. 10, 11: Detail of hinge plate; FIG. 10: Left valve; FIG. 11: Right valve; FIG. 12: Detail of shell sculpture. Scale bars: FIGS. 1, 4 = 2 mm; FIGS. 2, 3, 5, 7, 8 = 1 mm; FIGS. 6, 10, 11 = 200 μ m; FIGS. 9, 12 = 500 μ m.

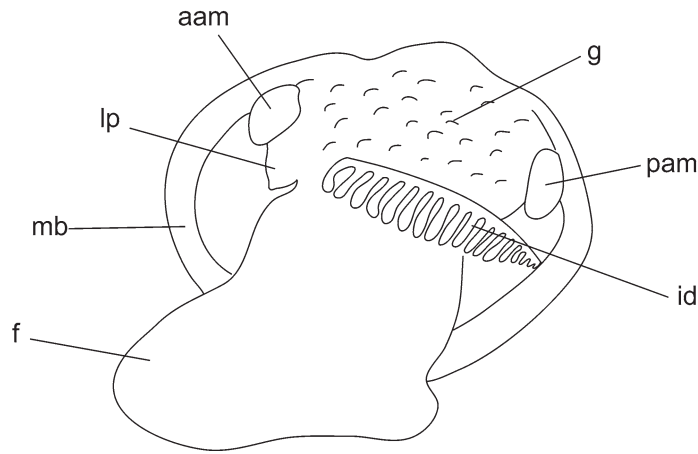


FIG. 13. *Mysella cahuelmensis*, new species, anatomy. aam: anterior adductor muscle; f: foot; g: gonad; id: inner demibranch; lp: labial palp; mb: mantle border; pam: posterior adductor muscle.

truncate, forming weak angles at junctions with ventral part and dorsal margin (Figs. 1–5, 7, 8). Beaks inflated, located posterior to midline, usually eroded in the studied specimens, opisthogyrous (Figs. 1–5). Prodissoconch ovate, smooth, about 570 μm in diameter (Fig. 6). Shell surface sculptured with coarse, regularly separated commarginal cords (Fig. 12). Periostracum brown to yellowish-brown, sometimes crusted with ferruginous material. Inner shell surface white, mimicking outer shell sculpture. Hinge plate narrow, but well visible beneath beaks (Figs. 7, 8, 10, 11). Right valve with two straight, divergent, equally solid teeth; the anterior slightly longer than the posterior. Anterior to anterior tooth and posterior to posterior tooth, hinge plate margin forming a low ridge, delimiting with dorsal shell margin two grooves to accommodate margin of opposite valve (Fig. 11). Left valve edentulous, with dorsal margin moderately thickened on each side of ligamental pit, forming short lamellae that interlock with the grooves of right valve. Ligamental pit deeply recessed, flanked by anterior and posterior ligamental ridges (Fig. 10). Ligament large, internal.

Anatomy: Mantle margin with long inhalant-pedal aperture and small posterior exhalant aperture. Transverse section of anterior and posterior adductor muscles ovate, similar in size. Gill axis obliquely directed (Fig. 13).

Only one (the inner) demibranch, present, with 19 filaments in a 2 mm length specimen (Fig. 13). Ascending and descending lamellae equally developed. Left and right demibranchs posteriorly fused. Foot large, compressed, with well-marked posterior heel (Fig. 13). Brooding was observed in a 4.3 mm long specimen.

Ethymology: The species name refers to the collection site, the Fiordo Cahuelmo, which in Mapuche aboriginal language means “place of cahueles”; “cahuel” is the name used to refer to the Peale’s Dolphin, *Lagenorhynchus australis* (Peale, 1848).

Remarks: The new species here described shows a combination of characters reported for *Mysella* – with *Rochefortia* Vélain, 1877, considered a synonym, by Gofas & Salas (2008) – and *Kurtiella* Gofas & Salas, 2008. It shares with *Mysella* the presence of a continuous cardinal platform under the beaks and the teeth of the right valve entirely supported by the cardinal platform, and with *Kurtiella* subequal teeth in the right valve. Gill morphology in *Mysella cahuelmensis* also resembles that described for *Kurtiella*, particularly that of *K. tumidula* (Jeffreys, 1866) (Gofas & Salas, 2008: fig. 14A). Although this character is unknown in the type species of either *Mysella* and *Rochefortia*, a wide variation of gill development has been reported for other species currently assigned

to *Mysella* (Boyko & Mikkelsen, 2002). Due to these uncertainties, we prefer to be conservative and tentatively place the new species here described under *Mysella*.

Although the generic placement of Chilean mysellids is unresolved, six species of *Mysella* s. l., are currently known from the area, three from the central and northern coasts – *Mysella coquimbensis* (Hanley, 1857), *Mysella deanneae* Ramorino, 1968, and *M. molinae* Ramorino, 1968) – and three from the Magellan Strait – *Mysella mabillei* (Dall, 1908), *Mysella rochebrunei* (Dall, 1908) and *Mysella sculpta* Soot-Ryen, 1957. *Mysella cahuelmensis* resembles *M. deanneae* and *M. coquimbensis* in having an ovate shell outline, differing in having the anterior and posterior parts of dorsal margin shorter, similar in length, and horizontal to only slightly sloping, and the ventral margin more widely arcuate.

The evenly ovate shell outline clearly distinguishes *Mysella cahuelmensis* from *Mysella mabillei*, *M. rochebrunei*, *M. sculpta*, and *M. molinae*. The two former species have a rectangular shell outline, with the ventral margin straight and parallel to the anterior part of dorsal margin; and the two latter species have a trigonal-ovate shell outline. In addition, in *M. molinae* the right valve has a posterior tooth that is longer than the anterior tooth. *Mysella cahuelmensis* differs from any other mysellid occurring in Chilean waters in its coarse com-marginal sculpture.

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