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New insight into Cenozoic Orbitestellidae (Gastropoda: Heterobranchia) from the Magellanic Region based on lower Neogene and Recent species

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Abstract.—*Patagorbitestella* new genus is here proposed to include two extant and one fossil species: *P. ponderi* (Linse, 2002) new combination, *P. patagonica* (Simone and Zelaya, 2004) new combination, and *P. leonensis* new species, the last described from the Punta Entrada Member of Monte León Formation (50°21′25.4"S, 68°53′05.9″W, Aquitanian to lower Burdigalian, lower Miocene). A protoconch sculptured with distinctive microscopic spiral threads serves as a per se diagnostic shell character for the new genus. *Patagorbitestella* n. gen. constitutes a distinctive lineage of orbitestellid gastropods inhabiting exclusively the Magellanic Region at least since the early Miocene. This is the first fossil record of Orbitestellidae in South America.

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Introduction

Orbitestellidae Iredale, 1917 is a family of heterobranch marine gastropods characterized by their small, low-spired, and widely umbilicated shells (Ponder, 1990; Simone and Zelaya, 2004; Rolán et al., 2020, among others). After the study of type materials and soft parts from several species, Ponder (1990) provided new insight into the knowledge on Orbitestellidae. This study revealed well-known species in this family by Ponder (1990) and several subsequent workers (e.g., Warén and Bouchet, 2001; Simone and Zelaya, 2004) in several areas of the world. Currently, Orbitestellidae is considered to be part of Heterobranchia (Bouchet et al., 2017) and composed of the genera *Orbitestella* Iredale, 1917; *Microdiscula* Thiele, 1912; *Boschitestella* Moolenbeek, 1994; *Kaiwarella* Bandel, Gründel, and Maxwell, 2000; *Lurifax* Warén and Bouchet, 2001; and *Absonus* Rubio and Rolán, 2021. Assigned species are mostly living but can be found in the fossil record since the Eocene (e.g., Squires and Goedert, 1996; Kiel, 2006; Hybertsen and Kiel, 2018; Chernyshev and Goedert, 2021).

Two living species—*Orbitestella ponderi* Linse, 2002 and *O. patagonica* Simone and Zelaya, 2004—are reported from the Magellanic Region (Fig. 1). Rehder (1980) cited *O. toreuma* Powell, 1930 from Eastern Island, which is also the type locality of *O. aequicostata* Raines, 2002. Lima et al. (2011) reported *O. bermudezi* (Aguayo and Borro, 1946) from the Saint Peter and Saint Paul Archipelago off of Brazil, representing the only record of the group in the temperate waters of the southwestern Atlantic. *Microdiscula vanhoeffeni* Thiele, 1912 from the South Shetland Islands and *Microdiscula subcanaliculata* (E. A. Smith, 1875) from the South Orkney and South Georgia islands (Ponder, 1983, 1990) are the only species reported from sub-Antarctic areas.

In this contribution, we provide new taxonomic and biogeographical insights on Orbitestellidae from the Magellanic Region based on extant and lower Miocene specimens with the description of a new genus and a new species. Previous worldwide reports dealing with Orbitestellidae were compiled in an attempt to understand the scenario in which the findings of the present work should be interpreted.

Geological setting

The fossils described herein come from shell beds at the top of the Punta Entrada Member of the Monte León Formation (Bertels, 1970, 1980). The shell beds lie within loose or very poorly cemented sandstone, exposed along a cliff just south of the Monte León beach; these lithologies are interpreted as part of the generally regressive sedimentary package represented by the Monte León Formation. These sedimentological concentrations are parautochtonous and contain a species-rich, abundant, and well-preserved macrofauna (Ihering, 1907; Del Río and Camacho, 1998; Del Río, 2004a, b; Griffin and Pastorino, 2005, 2006; Del Río and Martínez, 2006; and references therein). A schematic section of the locality was given by Griffin and Pastorino (2012).

The Monte León Formation ranges from the Chattian to Rupelian (Oligocene) ages, based on its foraminiferan content (Bertels, 1970, 1975). Also based on foraminiferans, Náñez (1988) suggested an upper Oligocene–lower Miocene age for the Monte León Formation, whereas Barreda and Palamarczuk (2000) considered it lower Miocene based on palynological data. Parras et al. (2012) indicated an entirely lower Miocene (Aquitanian to lower Burdigalian) age for the Monte León

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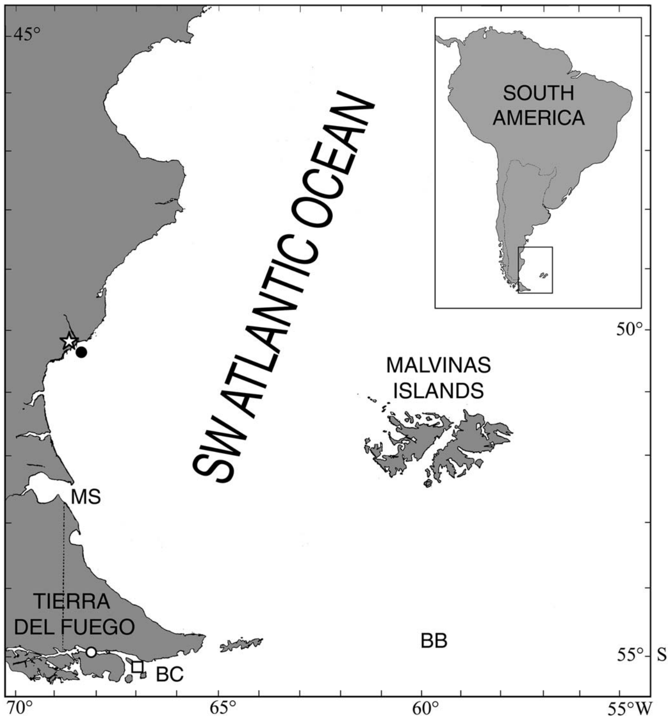

Figure 1. Map showing main areas from the Magellanic Region. BB = Burdwood Bank; BC = opening of the Beagle Chanel; MS = entrance of the Magellan Strait; open square = type locality of *Patagorbitestella ponderi* (Linse, 2002) n. comb.; open circle = type locality of *P. patagonica* (Simone and Zelaya, 2004) n. comb.; filled circle = northernmost record of living *Patagorbitestella* spp. in the Magellanic Region; star = type locality of *P. leonensis* n. sp.

Formation based on $^{87}Sr/^{86}Sr$ dates drawn from the shells of oysters, pectinids, and brachiopods, with dates ranging from 22.12 Ma (+ 0.46, - 0.54) at the base, to 17.91 Ma (+ 0.38, - 0.4) at the top of the unit.

Materials and methods

Seven bulk fossil samples, each filling a 5-liter container, were collected from the shell beds located at 50°21′25.4″S, 68° 53′05.9″W, within the boundaries of the Monte León National Park (Fig. 1). These samples were washed with diluted H_2O_2 and then sieved following the usual procedure for processing foraminiferans and small mollusks, as described by Beu and Maxwell (1990). Recent material comes from several cruises at the Magellanic Region (Campaña Antártica de Verano CAV) on board the R/V Puerto Deseado (Fig. 1). Bottom samples were obtained with a dredge net (2 mm mesh) and fixed in 5% formalin solution on board, then transferred to 70% ethanol. Both fossil and Recent specimens were sorted under a Leica MZ 95 stereoscopic microscope (X max = 60), then photographed with Zeiss Discovery V20 stereoscopic microscope and/or Philips XL 30 scanning electron microscope (SEM) both at the Museo Argentino de Ciencias Naturales (MACN). Shell morphologies of Orbitestellidae species, based on previous reports and photographs of specimens housed in different institutions, are provided (see Table in Supplemental data).

Abbreviations used in the text are: an. = complete animal; sh. = shell. Diameter of the protoconch (D) indicates the maximum distance between the prototeleoconch limit and other opposite points.

Repositories and institutional abbreviations.—Specimens here reported are deposited in the Invertebrate Collection (MACN-In) and in the Paleontological Collection (MACN-Pi) at the MACN, Buenos Aires, Argentina. Type material of previously described species from the area is deposited at Museo de La Plata (MLP), La Plata, Argentina; Museu de Zoologia da Universidade de São Paulo (MZSP), San Pablo, Brazil, and Zoological Museum (ZMH), Hamburg, Germany. Specimens listed (herein and in Table in Supplemental data) are housed at Australian National Museum (AMS), Sydney, Australia; Bailey-Matthews National Shell Museum (BMSM), Sanibel, Florida, USA; Los Angeles County Museum (LACM), California; Muséum National d'Histoire Naturelle (MNHN), Paris; Victoria Museum of Science (SMV), Melbourne, Australia; and Te Papa Tongarewa Museum (NMNZ), Wellington, New Zealand.

Systematic paleontology

Class Gastropoda
Subclass Heterobranchia
Superfamily Orbitestelloidea Iredale, 1917
Family Orbitestellidae Iredale, 1917
Genus *Patagorbitestella* new genus

Type species.—*Orbitestella patagonica* Simone and Zelaya, 2004, here designated.

Diagnosis.—Shell very small (Figs. 2.1–2.6, 2.8–2.10, 3.1–3.5), to 1.1 mm (Simone and Zelaya, 2004); protoconch with granular nucleus and 10–12 spiral threads toward teleoconch boundary (Figs. 2.7, 2.11, 3.6–3.8) that continue on the teleoconch covering the entire shell surface. Axial sculpture from strongly developed (Fig. 2.1–2.6) to almost obsolete (Fig. 2.8–2.10); macroscopic spiral sculpture rare, but relatively well developed if present (Fig. 3.1–3.5). Central radular teeth with wide pectinate cutting edge; lateral teeth narrow with few cusps; marginal teeth narrow, hook-like without additional cusps. A single jaw plate per row.

Occurrence.—Recent: southern Chile (Linse, 2002); Beagle Channel (Linse, 2002; Simone and Zelaya, 2004); Burdwood Bank (Di Luca and Zelaya, 2019; this work); and off of the mouth of the Santa Cruz River (this work), 0–300 m depth. Lower Miocene: 50°21′25.4″S, 68°53′05.9″W, Punta Entrada Member of the Monte León Formation within the boundaries of the Monte León National Park, Argentina (this work) (Fig. 1).

Etymology.—The name is a conjunction of 'Patagonia,' a term commonly employed to refer the southern area of South America, and *Orbitestella*.

Remarks.—*Patagorbitestella* n. gen. includes *P. ponderi* n. comb., *P. patagonica* n. comb., and *P. leonensis* n. sp. According to Simone and Zelaya (2004), radulae and jaws are

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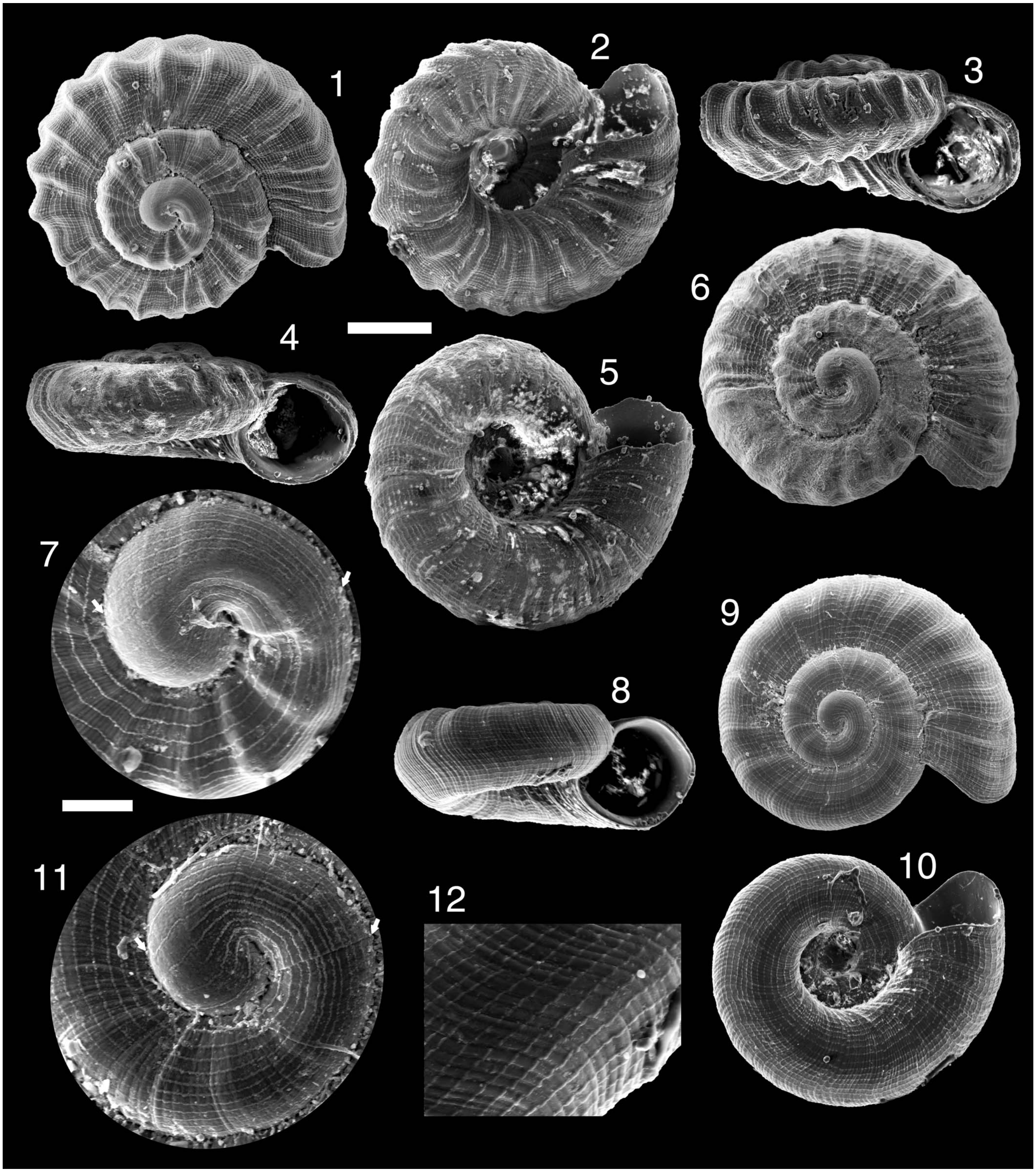

Figure 2. Recent species of *Patagorbitestella* n. gen. from the Magellanic Region: (**1–7**) *Patagorbitestella ponderi* (Linse, 2002) n. comb. (MACN-In 44058: 54° 15′48.3″S, 59°59′2.52″W, 103 m): (**1–3**) dorsal, ventral, and lateral views of a specimen; (**4–6**) lateral, ventral, and dorsal views of another specimen; (**7**) protoconch, with arrows delimiting protoconch diameter (D); (**8–12**) *Patagorbitestella patagonica* (Simone and Zelaya, 2004) n. comb. (MACN-In 44060: 50°30′40″S, 68° 02′33″W, 62 m): (**8–10**) lateral, dorsal, and ventral views of a specimen; (**11**) protoconch, with arrows delimiting protoconch diameter (D); (**12**) detail of the teleoconch spiral threads and commarginal growth lines. Scale bars = 200 µm (**1–6, 8–10**); 50 µm (**7, 11, 12**).

similar between *P. patagonica* n. comb. and *P. ponderi* n. comb., and jaws also differ in the number of rows reported (five in *P. patagonica* vs. six to eight in *P. ponderi*). *Patagorbitestella* n. gen. is a distinctive group exclusively inhabiting the Magellanic Region (Fig. 1); its presence in the area can be traced to at least the early Neogene.

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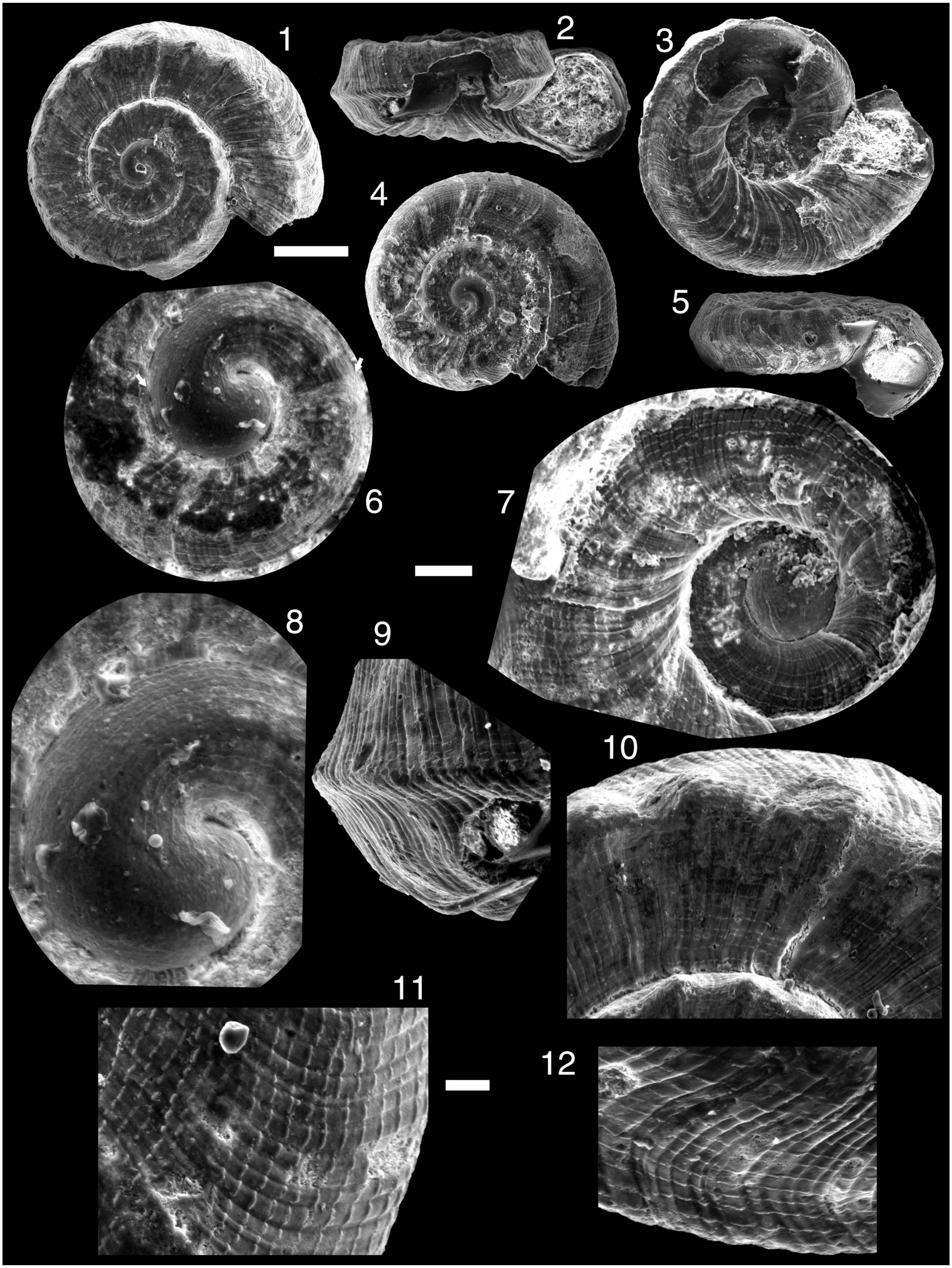

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Patagorbitestella ponderi (Linse, 2002) new combination
Figure 2.1–2.7

1990 *Orbitestella* sp.; Ponder, p. 516.
1999 *Orbitestella* sp.; Linse, p. 401.
2002 *Orbitestella ponderi* Linse, p. 82, pl. 9a, figs. 9.1.1 65–68, pl. 9b, figs. 9.1.1 69–72.
2004 *Orbitestella ponderi*; Simone and Zelaya, p. 165.
2019 *Orbitestella ponderi*; Di Luca and Zelaya, p. 62, fig. 5A.

Type specimens.—Holotype from Isla Picton, Beagle Channel, Chile: 55°06.89′S, 66°39.95′W, 63 m (ZMH 2826); 53 paratypes from the holotype locality (ZMH 2827); 42 paratypes from Beagle Channel: 55°28.8′S, 66°03.5′W, 1,279 m (ZMH 2828); and 17 paratypes from Isla Picton: 55° 07.30′S, 66°52.78′W, 25 m (ZMH 2829).

Diagnosis.—Shell to 1.04 mm D; protoconch somewhat bulging toward the prototeleoconch boundary; spire low; teleoconch whorls convex; axial sculpture of strong ribs, forming granules at the dorsal side.

Occurrence.—Southern Chile (Linse, 2002); Beagle Channel (Linse, 2002; Simone and Zelaya, 2004); and Burdwood Bank (Di Luca and Zelaya, 2019; this work) (Fig. 1), 0–300 m depth. Empty shells were reported to 1280 m depth by Linse (2002).

Materials.—54°27′18″, 60°57′10.35″W, 100 m (MACN-In 44056: 5 sh.); 54°25′30″S, 58°22′19″W, 300 m (MACN-In 44057: 2 an., 40 sh.); 54°15′48.3″S, 59°59′2.52″W, 103 m (MACN-In 44058: 6 an., 16 sh.); 54°15′24.9″S, 60° 34′5.22″W, 113 m (MACN-In 44059: 2 sh.); 54°15′S, 60° 00′W, 97–101 m (MACN-In 40697: 1 an., 13 sh.).

Remarks.—This species was properly described and illustrated. Specimens here studied were recognized by having strong axial sculpture and a relatively high spire. Some specimens have more spiral threads on the last whorl (i.e., 50 vs. 40–45) than those reported by Linse (2002); this feature is considered as intraspecific variability. Animals deposited under MACN-In 44057 are the deepest known living specimens (300 m) among species of *Patagorbitestella* n. gen.

Patagorbitestella patagonica (Simone and Zelaya, 2004) new combination
Figure 2.8–2.12

2004 *Orbitestella patagonica* Simone and Zelaya, p. 161, figs. 2–18

Type specimens.—Holotype from Isla H, Beagle Channel, Argentina: 54°52′S, 68°12′W (MLP 6367); 9 paratypes from the same locality (MLP 6368); and 5 paratypes and sections of 2 specimens from the same locality (MZSP 38708).

Diagnosis.—Shell to 1.1 mm D; protoconch not bulging toward the prototeleoconch boundary; spire very low; teleoconch whorls convex; axial sculpture almost obsolete; recognizable by wavy shell, mainly on dorsal surface.

Occurrence.—Beagle Channel (Simone and Zelaya, 2004) and off of the mouth of the Santa Cruz River (this work) (Fig. 1), 0–62 m.

Materials.—50°30′40″S, 68°02′33″W, 62 m (MACN-In 44060: 61 an., 18 sh.).

Remarks.—This species was properly described and illustrated. Specimens studied herein have the axial sculpture comparatively more developed and more spiral threads on the last whorl (i.e., 42 vs. 35–37) than those reported by Simone and Zelaya (2004). This is the second record of *P. patagonica* n. comb. and the northernmost record of Recent species of *Patagorbitestella* n. gen. in the Magellanic Region (Fig. 1).

Patagorbitestella leonensis new species
Figure 3

Type specimens.—Holotype (MACN-Pi 6502) and 3 paratypes (MACN-Pi 6503a–c), all from 50°21′25.4″S, 68°53′05.9″W, within the boundaries of the Monte León National Park, Argentina (Fig. 1); Punta Entrada Member of the Monte León Formation.

Diagnosis.—Shell to 840 μm D; protoconch somewhat bulging toward prototeleoconch boundary; spire low, teleoconch whorls subangled; sculpture of moderately strong axial ribs, more or less bulging at the dorsal end.

Occurrence.—Known only from the type locality, Monte León National Park, Argentina.

Description.—Shell (Fig. 3.1–3.5) very small (to 840 μm D), discoidal, widely umbilicated, low-spired. Protoconch (Fig. 3.6–3.8) of ∼1⅕ whorls, ∼175 μm D, sculptured with 11 or 12 spiral threads; nucleus somewhat sunken, sculptured with granules. Teleoconch to 2¼ whorls, weakly angled ventrally, dorsally, and at the periphery (Fig. 3.2, 3.5, 3.9, 3.10). Sutures somewhat grooved. Axial sculpture of 17–19 ribs per whorl. Ribs stronger ventrally and dorsally toward periphery where they produce more or less pointed bulges; ribs weaker toward aperture. Commarginal growth marks present (Fig. 3.9–3.12). Spiral sculpture of a single peripheral cord (Fig. 3.2, 3.5, 3.9, 3.12), moderately developed (cf. Fig. 3.2,

Figure 3. *Patagorbitestella leonensis* n. sp. from Monte León Formation (early Miocene, 50°21′25.4″S, 68°53′05.9″W): (**1–3**) dorsal, lateral, and ventral views of the holotype (MACN-Pi 6502); (**4, 5**) dorsal and lateral views of a paratype (MACN-Pi 6503a); (**6, 7**) setails of the firsts whorls in dorsal and ventral positions from two paratypes (MACN-Pi 6503c, b), with arrows on **3.6** delimiting protoconch diameter (D); (**8**) detail of the protoconch in dorsal view from a paratype (MACN-Pi 6503c); (**9**) detail of the periphery of the holotype (MACN-Pi 6502) in lateral view; (**10**) detail of the dorsal sculpture of the holotype (MACN-Pi 6502); (**11, 12**) details of the teleoconch spiral threads and commarginal growth lines: (**11**) dorsal view of a paratype (MACN-Pi 6503a); (**12**) ventral view of the holotype (MACN-Pi 6502). Scale bars = 200 μm (**1–5**); 50 μm. (**6, 7, 9, 10**); 20 μm (**8, 11, 12**).

3.9 vs. 3.5); 10 or 11 spiral threads (Fig. 3.6) on dorsal side of first whorl, 44–49 on last whorl running over entire shell surface (Fig. 3.7, 3.9–3.12). Umbilicus (Fig. 3.3, 3.7) wide (~35% of D) and deep (shell nucleus visible). Aperture somewhat angled to almost circular; columellar callus very narrow.

Etymology.—The name refers to the type locality of this species.

Materials.—Only the type material.

Remarks.—The specimens show some degree of variability in the height of the spire, the strength of the peripheral spiral cord, and the development of spiral threads. The holotype (Fig. 3.1–3.3, 3.9, 3.10, 3.12) shows the highest spire and the strongest peripheral spiral cord observed. In contrast, spiral threads are comparatively less developed (or preserved) than on one of the paratypes illustrated (Fig. 3.4, 3.5, 3.11). A weakly angled teleoconch whorl outline, with the dorsal part more depressed, and the presence of a peripheral spiral cord are the distinctive characters of *P. leonensis* n. sp., contrasting with the convex outline present in *P. ponderi* n. comb. and *P. patagonica* n. comb., which also lack the macroscopic spiral sculpture. The bulging protoconch and the moderately strong axial sculpture of *P. leonensis* n. sp. resemble those of *P. ponderi* n. comb. However, the ribs are comparatively more developed on the periphery of the latter species. The numerous spiral threads on the protoconch and teleoconch of *P. leonensis* n. sp. render it similar to *P. ponderi* n. comb. and *P. patagonica* n. comb., allowing the identification of a distinctive group of species among Orbitestellidae.

Discussion

Patagorbitestella leonensis n. sp. (Fig. 3) from the Monte León Formation (Aquitanian to lower Burdigalian) constitutes the first record of fossil Orbitestellidae from South America. Shell characters of this species are remarkably similar to those of the extant *P. ponderi* n. comb. and *P. patagonica* n. comb. (Fig. 2). The three species are very small (usually < 1 mm) and have protoconchs of ~ 1⅕ whorls with granular nuclei ornamented with 10–12 spiral threads (Figs. 2.7, 2.11, 3.6–3.8) and teleoconchs to 2¼ whorls, sculptured with numerous spiral threads, continuous with the protoconch threads, over the entire shell surface (9–12 on the dorsal side of the first whorl, 35–50 on the last whorl) always interrupted by commarginal growth lines (Figs. 2.12, 3.9–3.12). *Patagorbitestella ponderi* n. comb. and *P. leonensis* n. sp. share the feature of a bulging protoconch toward the teleoconch boundary, correlated with strong axial sculpture. In contrast, *P. patagonica* n. comb. has almost obsolete axial sculpture and non-bulging protoconch.

Among species known from areas surrounding the Magellanic Region, *Orbitestella toreuma*, with New Zealand as its type locality, was mentioned from Easter Island (Rehder, 1980). It has a slight keel on its protoconch, two peripheral keels, and spiral threads only between the axial ribs (Powell, 1930, pl. 88, figs. 16, 17). Also from Easter Island, *O. aequicostata* has a shell outline comparable to *O. toreuma* although it was described with a smooth protoconch. *Orbitestella bermudezi* was described from the Tertiary of Cuba; however, it was also mentioned as living in several localities worldwide (see Rolán et al., 2020; Rubio and Rolán, 2021) including Saint Peter and Saint Paul Archipelago off of Brazil (Lima et al., 2011). The specimens from this last locality (as far as it can be seen in the illustration; Lima et al., 2011, figs. 4A–G) have a shell outline similar to those of *O. aequicostata* and *O. toreuma*, and a protoconch sculptured with a single keel. *Microdiscula vanhoeffeni* and *Microdiscula subcanaliculata*, with type localities in the Kerguelen Islands, were mentioned from South Orkney and South Georgia islands by Ponder (1983, 1990) and Dell (1990). *Microdiscula* has convex teleoconch whorls with deeper sutures and generally sculptured only by growth lines, sometimes developed as axial threads (Ponder, 1967; 1990, fig. 2). There are also morphological differences in the soft parts, according to the reports of Linse (2002) and Simone and Zelaya (2004); *Patagorbitestella* n. gen. has species with single jaw plates per row whereas *Microdiscula* has four jaw plates per row (Ponder, 1990).

Species inhabiting New Zealand and Australian waters are of particular interest because the early Miocene is related to the development of the Antarctic Circumpolar Current (from west to east since opening of the Drake Passage), which could have effects on the distribution of some taxa across these areas and the Magellanic Region (Beu et al., 1997; Casadio et al., 2010). Moreover, *Cyclostrema bastowi* Gatliff, 1906 (the type species of *Orbitestella*) is an Australian species that, together with other species from the area (e.g., *O. decorata* Laseron, 1954), allowed Ponder (1990) to recognize the presence of *Orbitestella* in the Magellanic Region. Anatomical similarities among the Magellanic species of *Patagorbitestella* and *Orbitestella* from Australia and New Zealand have been pointed out by Ponder (1990), Linse (2002), and Simone and Zelaya (2004).

Beu and Maxwell (1990, pl. 54, figs. N, O) and Ponder (1990, fig. 1A–E) illustrated *Orbitestella praetoreuma* Laws, 1939, a Miocene species, and Recent *O. decorata* from New Zealand and Australian waters. Both species have protoconchs of ~1¼ whorls, sculptured with a spiral ridge and several minor spiral elements crossed by numerous axial ribs that produce a pitted pattern. This protoconch morphology contrasts with the unique spiral threads of *Patagorbitestella* n. gen. (Figs. 2.7, 2.11, 3.6–3.8). In addition, macroscopic spiral elements are very common in most *Orbitestella* spp. (e.g., Bandel, 1988, pl. 4, figs. 5, 6, pl. 5, fig. 3; Beu and Maxwell, 1990, pl. 54, figs. L–N; Ponder, 1990, fig. 1; Ortega y Gofas, 2019, fig. 25D–F; Rubio and Rolán, 2021, figs. 2–9), whereas in *Patagorbitestella* n. gen., a single, relatively well developed peripheral cord is only present in *P. leonensis* n. sp. (Fig. 3.2, 3.5, 3.9, 3.12). According to Simone and Zelaya (2004), *P. patagonica* n. comb. has a smaller stomach and a somewhat different radula than *Orbitestella* spp. studied by Ponder (1990). Radulae of species of *Patagorbitestella* n. gen. have a central tooth with comparatively wider, less triangular, pectinate cutting edge, narrower lateral teeth with fewer cusps, and marginal teeth that are also narrower, hook-like, and without additional lateral cusps.

Boschitestella encompasses very small shells mostly covered by microscopic spiral threads, protoconchs split into two distinctly sculptured sections, and a sharp peripheral keel on the teleoconch (e.g., Moolenbeek, 1994, figs. 9–16; Rolán et al., 2020, figs. 1–3; Rubio and Rolán, 2021, fig. 10C–F). *Absonus* has a similar protoconch and keel to those of *Boschitestella*, however, the shells are larger (~2 mm) and almost without sculpture (Rubio and Rolán, 2021, figs. 10A, B, 11A–D, 12, 13). *Lurifax* has a multispiral smooth protoconch and encompasses relatively large species (to 2.8 mm) related to Orbitestellidae by the anatomy of the soft parts (e.g., Warén and Bouchet, 2001, figs. 37C, D, 44E–G, 46C, D, 47A, B; Sasaki and Okutani, 2005, fig. 1; Kiel, 2006, fig. 10.1–10.6). Finally, *Kaiwarella* is only known from the Jurassic; its type species (Bandel et al., 2000, pl. 10, figs. 4–7) has a markedly angled shell with a strong peripheral keel.

Microscopic spiral sculpture densely developed on the entire surface of the teleoconch is known from several Orbitestellidae (e.g., *Orbitestella wareni* Ponder, 1990; *O. decorata*; *O. praetoreuma*; *O. nova* Rolán, Rubio, and Letourneux, 2020; *O. papuensis* Rubio and Rolán, 2021; *Boschitestella* spp. as described by Moolenbeek, 1994). *Patagorbitestella* n. gen. has microscopic spiral threads continuous from the protoconch to the teleoconch in all species (Figs. 2.7, 2.11, 3.6–3.8), a characteristic feature that does not occur in any other Orbitestellidae species.

Patagorbitestella n. gen. is a distinctive genus group among Orbitestellidae that can be morphologically distinguished from any other genera currently known. It encompasses two Recent species (i.e., *P. ponderi* n. comb.; *P. patagonica* n. comb.) and one fossil species from the lower Miocene (*P. leonensis* n. sp.), all known only from the Magellanic Region (Fig. 1). *Patagorbitestella* n. gen. is a consistent generic lineage of gastropods exclusively inhabiting the Magellanic Region, with a presence certainly extending to the lower Miocene, as appears to occur with other mollusks in the area. Pastorino and Griffin (2018, 2019) described *Cyclochlamys argentina* Pastorino and Griffin, 2018 (Pectinoidea) and reported specimens of *Antistreptus magellanicus* Dall, 1902 (Prosiphonidae) from the same region and deposits as species of *Patagorbitestella* n. gen. studied here, suggesting the presence of long-lasting lineages with no changes since the early Miocene. Pastorino and Griffin (2019) highlighted that both species share a small shell (< 5 mm) and inhabit shelf and upper-slope environments associated with the alga *Macrocystis pyrifera* (Linnaeus, 1771) C. Agardh, 1820. The concept of a long-lasting lineage is also applicable to *Patagorbitestella* n. gen. and probably to other groups of mollusks. There are also other records of small invertebrates with genera recognizable both from the early Miocene (or late Oligocene) and Recent faunas in this area (e.g., Casadio et al., 2009; Griffin and Pastorino, 2012; Pérez et al., 2015). The presence of these lineages could be related to a set of tectonic and biogeographical conditions that appears to be constant in the Magellanic Region. Pastorino and Griffin (2019) mentioned the fact that the SW Atlantic coast is disposed on a passive continental margin that remained relatively stable during the Cenozoic. This could have had effects on the stability of environments in the area, providing ecological conditions suitable for the development of several taxa around this time.

Species of *Patagorbitestella* n. gen. here studied have few-whorled, large protoconchs (~1⅕ whorls, 160–175 μm D) that suggest direct development (Shuto, 1974; Di Luca et al., 2020; Rolán et al., 2020). Such species without free larvae have limited potential for dispersal into other areas, a fact that contributes to explaining the unique characters of *Patagorbitestella* n. gen. from the Magellanic Region.

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Declaration of competing interests

The authors declare none.

Data availability statement

Data available from the Zenodo Digital Repository: https://doi.org/10.5281/zenodo.7544475.

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