

A new subgenus and three new species of Brazilian deep water *Olivella* Swainson, 1831 (Mollusca, Gastropoda, Olivellidae) collected by the RV *Marion Dufresne* in 1987

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ABSTRACT

Anasser n. subgen., a new subgenus of *Olivella* Swainson, 1831, is proposed based on the absence of any kind of pillar structure and the presence of a parietal callus reaching the apertural end but not above it. Three new species are described from Brazilian deep waters: *Olivella (Anasser) careorugula* n. sp. is medium sized, oblong outline, whorls strongly convex and with a large subsutural white band; *Olivella (Olivina) hyphala* n. sp. is large, relatively big-belled and presents a milk-white subsutural belt; and *Olivella (Olivina) klap-penbachi* n. sp. is medium sized, roughly obconic, resembling a whirligig with protoconch large and rounded.

KEY WORDS

Mollusca,
Gastropoda,
Olivellidae,
Olivella,
Olivina,
Anasser n. subgen.,
deep water,
Brazil,
new subgenus,
new species.

RÉSUMÉ

Un nouveau sous-genre et trois nouvelles espèces d'Olivella Swainson, 1831 (Mollusca, Gastropoda, Olivellidae) des eaux profondes du Brésil, récoltés par le NO Marion Dufresne en 1987.

Anasser n. subgen., nouveau sous-genre d'*Olivella* Swainson, 1831, est proposé. Il est basé sur l'absence de toute structure en pilier et sur la présence d'un callus pariétal atteignant mais ne recouvrant pas l'extrémité aperturale. Trois nouvelles espèces sont décrites des eaux profondes du Brésil : *Olivella (Anasser) careorugula* n. sp. est de taille moyenne, de silhouette allongée, les tours sont fortement convexes et possèdent une large bande subsuturale blanche ; *Olivella (Olivina) hyphala* n. sp. est grande, avec un cône relativement grand, elle présente une ceinture subsuturale blanc laiteux ; et *Olivella (Olivina) klappenbachi* n. sp. est de taille moyenne, grossièrement obconique et ressemble à un tourniquet avec une grande protoconque arrondie.

MOTS CLÉS

Mollusca,
Gastropoda,
Olivellidae,
Olivella,
Olivina,
Anasser n. subgen.,
eaux profondes,
Brésil,
nouveau sous-genre,
nouvelles espèces.

INTRODUCTION

The family Olividae Latreille, 1825 *sensu* Vaught (1989) is traditionally considered to include five subfamilies: Olivinae Latreille, 1825; Ancillinae Swainson, 1853; Olivellinae Troschel, 1869; Agaroninae Olsson, 1956; and Pseudolivinae Cossmann, 1901 (Ponder & Warén 1988). Kantor (1991), after an anatomically based phylogenetic study, raised the Olivellinae taxon to the family level, sharing with Olividae the presence of mantle appendages, formation of parapodia of the foot, crescent shaped propodium, ramified tubular salivary glands and a channeled suture. According to Kantor (1991), the Olivellidae is defined by the loss of the spiral morphology of visceral mass, the head and the accessory glands (Leiblein included), and includes the single genus *Olivella* Swainson, 1831, a large and important group for understanding the muricoidean phylogeny. Family assignment notwithstanding, the group still lacks an actual taxonomic revision under genus and subgenus level.

Olivella subgeneric taxonomy was established by Olsson (1956), based on the presence of pillar structure over the parietal wall, degree of excavation above the basal fold of the columella and the presence of columellar plaits.

Olsson (1956) pointed out that there are more species of *Olivella* in the American tropics than in any other part of the world. In fact, the olivellids

are mainly tropical and subtropical, with about 17 species assigned to Brazilian waters. These are assigned to six subgenera (Rios 1994; Absalão 2000). On the other hand, Abbott (1974) recognized 25 species of *Olivella* from the eastern coast of North America, while Diaz & Puyana (1994) reported only nine species from the Atlantic coast of Colombia. Such numbers suggest that the apparent lower species diversity of *Olivella* in the more southerly areas probably reflects the low number of researchers (Bouchet 1997). Indications that we are not leveling off in the inventory of *Olivella* diversity can be found in the reports of Klappenbach (1962, 1964, 1986, 1991), Diaz & Götting (1990) and Absalão (2000). Deep water operations carried on by the research ship *Marion Dufresne* in May 1987, off the southeastern coast of Brazil (MD-55 cruise), yielded new taxa of other marine gastropod families, such as Volutidae (Leal & Bouchet 1989) and Muricidae (Houart 1991). This work deals with the Olivellidae species collected by the MD-55 cruise.

ABBREVIATIONS

Institutions

ANSP	Academy of Natural Sciences, Philadelphia;
Aust. Mus.	The Australian Museum, Sydney;
BMNH	The Natural History Museum, London;
IBUFRJ	Instituto de Biologia, Universidade Federal do Rio de Janeiro;
MNHN	Muséum national d'Histoire naturelle, Paris;

MNRJ	Museu Nacional, Universidade Federal do Rio de Janeiro;
MORG	Museu Oceanográfico "Eliézer de Carvalho Rios" da Fundação Universidade do Rio Grande;
MZSP	Museu de Zoologia, Universidade de São Paulo;
ZMA	Zoologisch Museum, Amsterdam.
<i>Oceanographic vessels</i>	
AG	<i>Astro Garoupa</i> ;
NOAC	<i>Almirante Câmara</i> ;
NOAS	<i>Almirante Saldanha</i> ;
NOWB	<i>Professor Wagner Besnard</i> .
<i>Expeditions</i>	
CF VII	Comissão Oceanográfica Cabo Frio VII, NOAS, 1983;
CGR II	Comissão Oceanográfica Geocosta Rio II, NOAC, 1979;
Conversut I	Convergência subtropical, NOAS, 1977;
GEOMAR XII	Geologia Marinha, NOAC, 1979;
Platsul I	Plataforma Continental Sul, NOAS, 1977.
<i>Prefixes for station data of the MD-55 denote collecting equipment</i>	
CB	Blake trawl;
DC	dredge.

MATERIAL EXAMINED

Besides the material of the species here described, we have examined several lots of other species for comparison purposes.

Olivella (Callianax) moorei Abbott, 1951: Key Largo, Florida, 2 paratypes (ANSP 188338). — *Olivella (Callianax) biplicata* (Sowerby, 1825): San Pedro, California, 11 spec. (ANSP 111816). — *Olivella (Cupidoliva) nympa* (A. Adams & Angas, 1864): Port Jackson, Australia, 12 spec. (ANSP 16036); 2.3 km east of Malabar, Sydney, Australia, 33°59.45'S, 151°16.80'E, 25.X.1973, 1 spec. (Aust. Mus. C380265). — *Olivella (Minioliva) acteocina* Olsson, 1956: Grenada, B.W.I., I.1964, 25 spec. (ANSP 296675); Bahamas, 26°34'45"N, 078°51'45"W, 15 spec. (ANSP 371171). — *Olivella (Minioliva) perplexa* Olsson, 1956: Florida, holotype (ANSP 199584), 3 paratypes (ANSP410711); St Vincent, B.W.I., 13°07'N, 061°12'W, II.1972, 7 spec. (ANSP 332064); British Virgin Islands, 25.II.1973, 11 spec. (ANSP A5654c). — *Olivella (Minioliva) myrmecoon* Dall, 1912: Cólón,

Panamá, 2 spec. (ANSP 194585). — *Olivella (Olivina) orejasmirandai* Klappenbach, 1964: off Sarita, Brazil, 3 spec. (MORG 17590); off Sarita, Brazil, NOWB, 1972, 3 spec. (IBUFRJ 2114); Prainha, Rio de Janeiro State, Brazil, 1990, T. Almeida coll., 2 spec. (IBUFRJ 6593). — *Olivella (Olivina) puelcha* (Duclos, 1840): off Albardão, Brazil, 10 spec. (MORG 23160); Arquipélago de Santana, Macaé, Rio de Janeiro State, Brazil, AG, V.1993, 1 spec. (IBUFRJ 6471); Platsul I, stn 4428, NOAS, 1977, 1 spec. (IBUFRJ 4541); Platsul I, stn 4411, NOAS, 1977, 7 spec. (IBUFRJ 5422); Platsul I, stn 4393, NOAS, 1977, 1 spec. (IBUFRJ 4512); Platsul I, stn 4429, NOAS, 1977, 1 spec. (IBUFRJ 4515); Platsul I, stn 4446, NOAS, 1977, 1 spec. (IBUFRJ 4517); off Espírito Santo State, Brazil, 1993, V. Abud coll., 1 spec. (IBUFRJ 8317); Platsul I, stn 4446, NOAS, 1977, 4 spec. (IBUFRJ 368); CGR II, stn B1, 1988, O. Falcão coll., 1 spec. (IBUFRJ 942); CF VII, stn 6147, stn 6194, NOAS, 1983, 12 juv. (IBUFRJ 6995); CF VII, stn 6199, NOAS, 1983, 12 juv. (IBUFRJ 7464); CF VII, stn 6192, NOAS, 1983, 4 spec. (IBUFRJ 7465); CF VII, stn 6165, NOAS, 1983, 7 juv. (IBUFRJ 7466); CF VII, stn 6144, NOAS, 1983, 1 spec. (IBUFRJ 7467); CF VII, stn 6198, NOAS, 1983, +50 spec. (IBUFRJ 11018); GEOMAR XII, stn 107, NOAC, 1979, 1 spec. (IBUFRJ 7622); GEOMAR XII, stn 43, NOAC, 1979, 1 spec. (IBUFRJ 7878); GEOMAR XII, stn 49, stn 114, NOAC, 1979, 3 spec. (IBUFRJ 8400). — *Olivella (Olivina) tebuelcha* (Duclos, 1840): MD-55, 23°41'6"S, 042°06'5"W, 430-450 m, +100 spec. (MNHN); off Chuí, Rio Grande do Sul State, Brazil, 7 spec. (MORG 19640); Conversut I, stn 4532, 1977, 3 spec. (IBUFRJ 4553); Platsul I, stn 4395, NOAS, 1977, 1 spec. (IBUFRJ 4513); CF VII, stn 6186, NOAS, 1983, 1 spec. (IBUFRJ 7472); CF VII, stn 6146, stn 6172, stn 6180, stn 6165, NOAS, 1983, 29 spec. (IBUFRJ 7472); Platsul I, stn 4428, NOAS, 1977, 1 spec. (IBUFRJ 324). — *Olivella (Olivina) riosi* Klappenbach, 1991: off Sarita, Brazil, 6 spec. (MORG 26716). — *Olivella (Olivina) plata* (Ihering, 1909): off Uruguay, 3 spec. (MORG 32592).

SYSTEMATICS

Subclass ORTHOGASTROPODA

Ponder & Lindberg, 1995

Order SORBEOCONCHA

Ponder & Lindberg, 1997

Infraorder NEOGASTROPODA Thiele, 1929

Family OLIVELLIDAE Troschel, 1869

Genus *Olivella* Swainson, 1831

TYPE SPECIES. — *Oliva dama* Mawe, 1828 by subsequent designation (Dall 1909).

DIAGNOSIS. — Shell small or medium sized, oliviform, elevated spire, polished and smooth surface; suture grooved or channeled; parietal region with a callus which may extend along the spire whorls that usually bears an accessory growth (pillar structure) upon it developing folds or lirations. Operculum when present is chitinous and thin.

Subgenus *Anasser* n. subgen.

TYPE SPECIES. — *Olivella ambli*a Watson, 1882. Recent, off Brazil, southern Atlantic.

ETYMOLOGY. — This taxon is named after its characteristic absence of pillar structure: *an* (Latin), without; and *asser* (Latin), pillar.

DESCRIPTION

Small and large *Olivella*, whitish or very light colors. Parietal callus light to moderately developed, reaching the apertural end but not above it. No pillar structure. Lirae on the inner side of the outer lip absent. Suture channeled. Operculum chitinous, usually present. Internal resorption of shell.

*Olivella (Anasser) ambli*a Watson, 1882
(Fig. 1A-C)

TYPE MATERIAL. — Three syntypes (BMNH 1887.2.9.771-3).

TYPE LOCALITY. — Off Pernambuco, Brazil, *Challenger* Expedition, stn 122.

MATERIAL EXAMINED. — The type material photographs and: MD-55, stn CB95, 19°38'S, 38°43'W, 960 m, +50 spec. (MNHN); MD-55, stn CB93, 19°36'S, 38°53'W, 640 m, 45 spec.; MD-55, stn CB78, 18°58'8"S, 37°48'4"W, 1200 m, 13 spec.; MD-55, stn CB95, 19°38'4"S, 38°43'4"W, 960 m,

+50 spec.; MD-55, stn DC70, 18°59'1"S, 37°47'8"W, 1540-1550 m, 12 spec.; MD-55, stn CB97, 21°33'9"S, 40°08'4"W, 600 m, 5 spec.; MD-55, stn CB76, 18°58'9"S, 37°49'6"W, 637 m, 7 spec.; MD-55, stn SY74, 18°58'S, 37°49'W, 682 m, 2 spec.; MD-55, stn CB79, 19°01'8"S, 37°47'8"W, 1500-1575 m, 3 spec.; MD-55, stn CB105, 23°46'7"S, 42°10'1"W, 610 m, 8 spec.

REMARKS

See under *O. (A.) ephamilla* Watson, 1882.

Olivella (Anasser) ephamilla Watson, 1882
(Fig. 1D-F)

TYPE MATERIAL. — Three syntypes (BMNH 1887.2.9.774).

TYPE LOCALITY. — Off Pernambuco, Brazil, *Challenger* Expedition, stn 122.

MATERIAL EXAMINED. — The type material photographs and: MD-55, stn DC73, 18°59'5"S, 37°48'2" W, 607-620 m, 106 spec. (MNHN).

REMARKS

*Olivella ambli*a Watson, 1882 (Fig. 1A-C) and *O. ephamilla* Watson, 1882 (Fig. 1D-F) were described based on three shells each and were known, up to now, by their original descriptions and illustrations only. Examination of the photographs of these syntypes (Fig. 1A, B, D, E), several additional specimens of *O. ambli*a (Fig. 1C), *O. ephamilla* (Fig. 1F), and of an undescribed species (Fig. 1G-I) (see description below) has led us to confirm the absence of pillar structure in all these taxa, which seem to form a natural group (*Anasser* n. subgen.) unlike any other subgenus of *Olivella*, already described.

While the definition of a generic-level taxon based solely on conchological characters is a sub-optimal situation, we feel the uniqueness of this group warrants such a measure.

The simplest kind of pillar structure among the *Olivella* is found in the subgenera *Minioliva* Olsson, 1956, *Callianax* H. & A. Adams, 1853 and *Cupidoliva* Iredale, 1924 (Table 1). Besides that character, these subgenera share with *Anasser* n. subgen. a callus that does not extend beyond the upper end of the aperture.

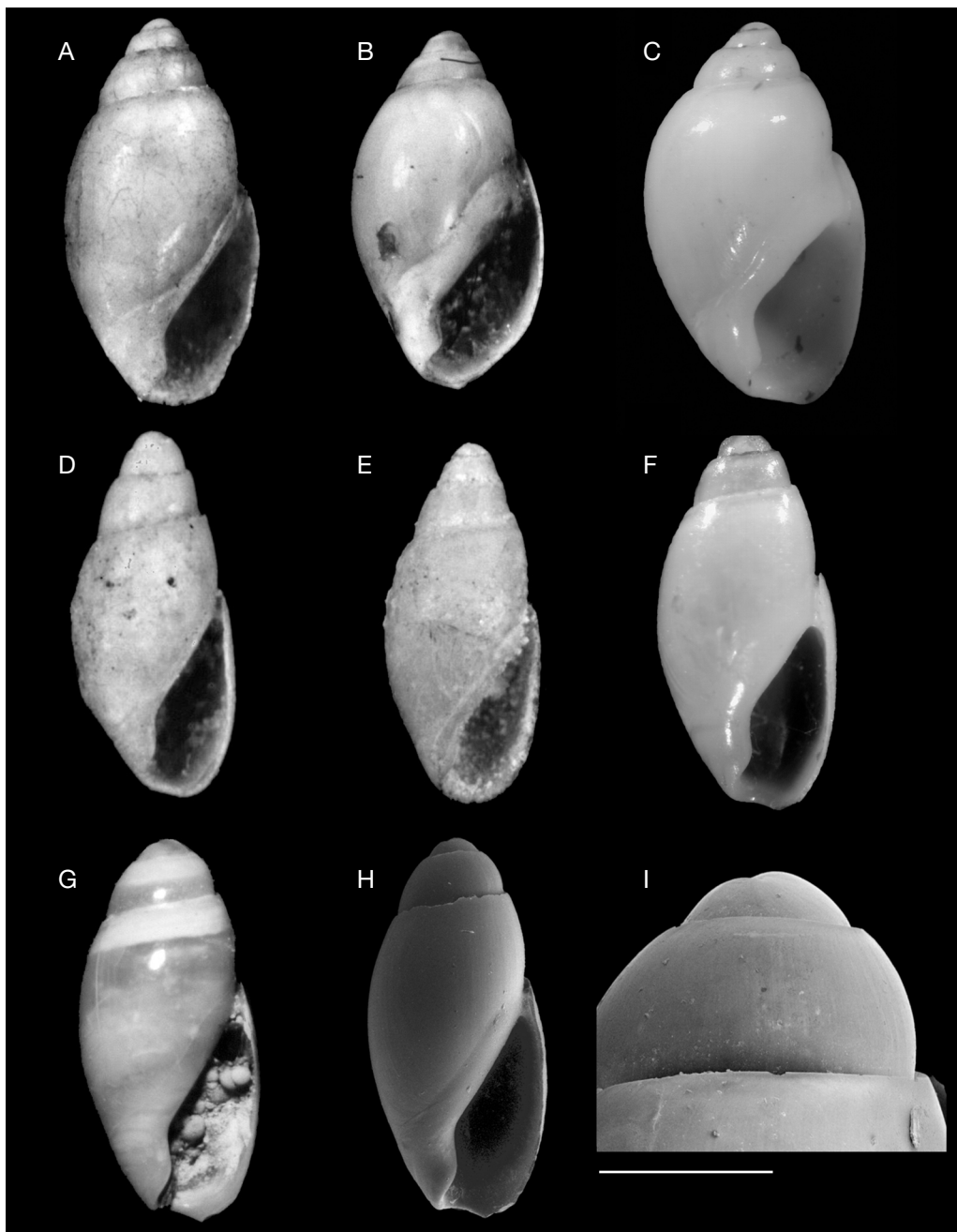


FIG. 1. — Subgenus *Anasser* n. subgen.; **A-C**, *Olivella ambli*a Watson, 1882; **A**, syntype, 5.9 mm length (BMNH 1887.2.9.771-3); **B**, syntype, 5.2 mm length (BMNH 1887.2.9.771-3); **C**, specimen from MD-55, stn 95, 8.2 mm length (MNHN); **D-F**, *Olivella ephamilla* Watson, 1882; **D**, syntype, 3.6 mm length (BMNH 1887.2.9.774); **E**, syntype, 4.2 mm length (BMNH 1887.2.9.771-3); **F**, specimen from MD-55, stn DC73, 4.7 mm length (MNHN); **G-I**, *Olivella careorugula* n. sp., holotype (MNHN); **G**, optical photography, 4.5 mm length; **H**, SEM photography, 4.5 mm length; **I**, apex detail. Scale bar: I, 500 μ m.

TABLE 1. — Comparison of *Anasser* n. subgen. to similar *Olivella* Swainson, 1831 subgenera.

Subgenus Character	<i>Callianax</i> H. & A. Adams, 1853	<i>Cupidoliva</i> Iredale, 1924	<i>Minioliva</i> Olsson, 1956	<i>Anasser</i> n. subgen.
Distribution	North America, West Africa	Australia	eastern North America	eastern South America
Spire height	medium-high	high	high	medium
Size	small-large	small-medium	minute	small-medium
Parietal callus (extension)	reaching the end of aperture or a bit beyond it	reaching the end of aperture	reaching the end of aperture	reaching the end of aperture
Radula	38-40 teeth, triserial	not documented	apparently missing	apparently missing
Parietal callus	variable-medium	thin	thick	thick
Pillar structure	strong, smooth or lirate fold	simple fold	simple small fold	absent
Fasciole	divided	large, not divided	simple and small	simple and small
Operculum	apparently absent	apparently absent	chitinous	chitinous
Protoconch	large	small-median	large	large (globose)
Internal whorl	reabsorbed	?	?	reabsorbed

Olivella (Anasser) careorugula n. sp.
(Fig. 1G-I)

TYPE MATERIAL. — Holotype: MNHN; paratypes (two shells in each lot): MNRJ 8913, 8915; IBUFRJ 11074; MORG 41036; MZSP 35529; ANSP 410280. All type material from the type locality.

TYPE LOCALITY. — South of Cabo Frio, Rio de Janeiro State, Brazil, MD-55, stn CB105, 23°47'S, 042°10'W, 610 m.

OTHER MATERIAL EXAMINED. — MD-55, stn CB105, 23°47'S, 42°10'W, 610 m, 2.VI.1987, 41 spec. (MNHN); MD-55, stn CB105, 23°47'S, 42°10'W, 610 m, V.1987, 2 shells (MNHN); MD-55, stn CB97, 21°34'S, 40°08'W, 600 m, V.1987, 1 spec.

ETYMOLOGY. — From *careo* (Latin): not; and *rugula* (Latin): fold, referring to the absence of folds or pillar structure.

DESCRIPTION

Shell medium sized (maximum length about 6.0 mm), white, semi-translucent, glossy of about 3.5 whorls. Spire of 2.5 whorls moderately tapering, comprising about 16-19% the total length. Protoconch small, rounded, not projecting above the outline of shell. The sutures are narrow and channeled visible as a spiral line due to shell translucence. In fresh specimens, there is usually an opaque white subsutural belt. Body whorl sub-cylindrical; spire whorls quite convex and very slightly stepped. Apex blunt and convex. Fasciole simple and sometimes hardly discernible. Low, light parietal callus, a bit more opaque than the shell and extending only to the end of the

aperture. Pillar structure absent. Columella strongly concave at anterior end, the remainder almost straight. Yellowish chitinous operculum present.

REMARKS

Olivella careorugula n. sp. (Fig. 1G-I) is less inflated and much smaller than *O. amblya* (Fig. 1A-C). *Olivella ephamilla* (Fig. 1D-F) shares with *O. careorugula* n. sp. the oblong outline but the spire profile of *O. ephamilla* is almost straight, giving a stepping tapering appearance, while in *O. careorugula* n. sp. it is strongly convex. Besides that, *O. careorugula* n. sp. bears a large subsutural white band, which is not present in the types of *O. ephamilla*.

The only species from western Atlantic with shells similar to *O. careorugula* n. sp. are *O. (Minioliva) acteocina* Olsson, 1956 and *O. (Minioliva) perplexa* Olsson, 1956 (Olsson 1956: pl. 12, fig. 6 and pl. 16, fig. 7 respectively) from Florida and Bahamas-Panamá respectively. Both these *Minioliva* have higher spires and less convex whorls than *O. (Anasser) careorugula* n. sp. Furthermore, they have a typical *Minioliva* pillar structure (*sensu* Olsson 1956), absent in all *Anasser* n. subgen. species.

Additionally, *Anasser* n. subgen. seems to be a deep water southern Atlantic group while *O. acteocina* and *O. perplexa* inhabit shallow, more northerly coastal waters.

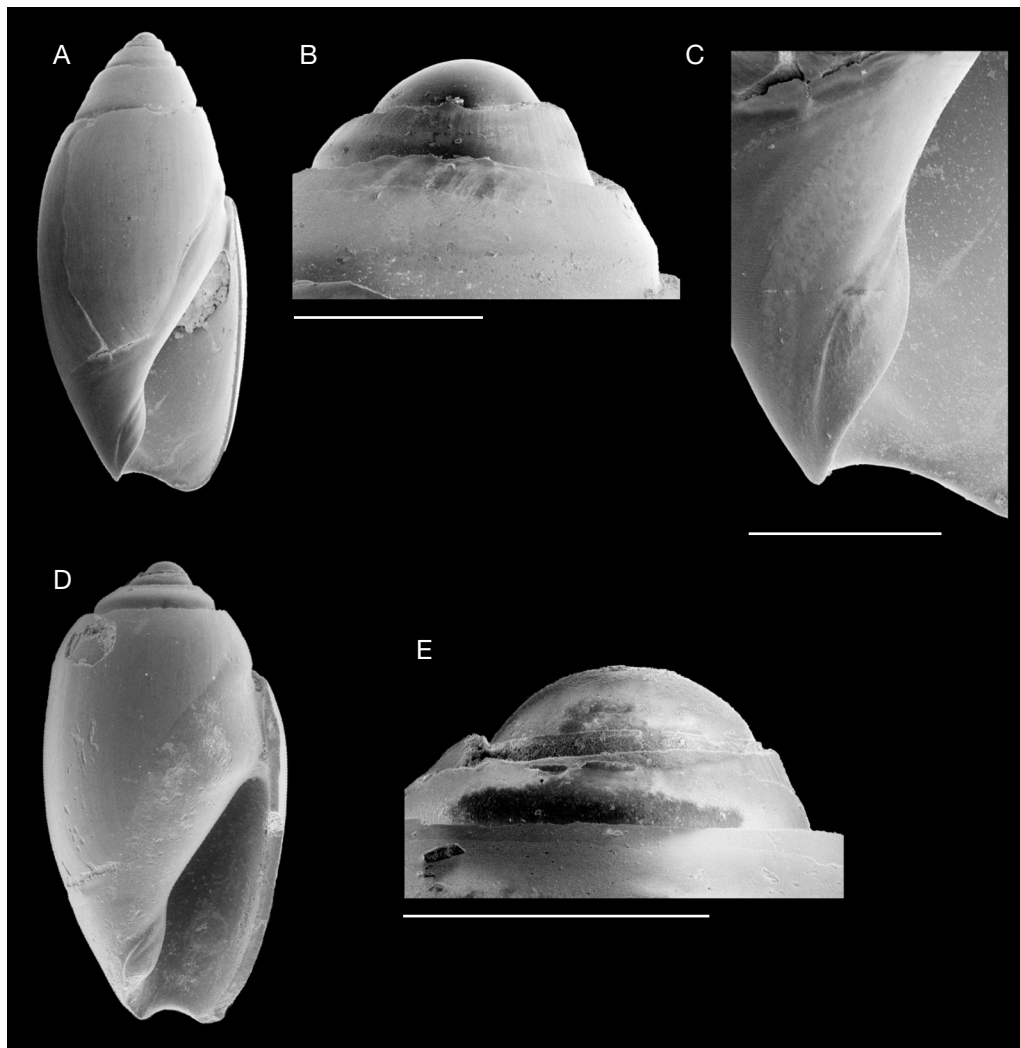


FIG. 2. — Subgenus *Olivina* d'Orbigny, 1841; **A-C**, *Olivella hyphala* n. sp., holotype (MNHN); **A**, apertural view, 7.4 mm length; **B**, apex detail; **C**, plicae detail; **D, E**, *Olivella klappenbachi* n. sp., holotype (MNHN); **D**, apertural view, 5.5 mm length; **E**, apex detail. Scale bars: B, C, E, 500 μ m.

We failed to find radulae in dried specimens. Despite rehydration, careful dissection and, ultimately, KOH digestion. *Olivella careorugula* n. sp. may lack this structure.

DIAGNOSIS. — Parietal callus thin, usually transparent, extending beyond the aperture toward the suture. Pillar structure is a low, simple or double fold at the end of columella, the wall above it smooth. Outer lip without lirae inside. Chitinous operculum present.

Subgenus *Olivina* d'Orbigny, 1841

TYPE SPECIES. — *Olivella tehuelchana* d'Orbigny, 1841, by subsequent designation by Olsson (1956): Recent, southern Atlantic.

Olivella (Olivina) hyphala n. sp. (Fig. 2A-C)

TYPE MATERIAL. — Holotype: MNHN; paratypes (two shells in each lot): MNRJ 8914, 8917;

IBUFRJ 11914; MORG 41051; MZSP 35534; ZMA 402931; ANSP 410279. All from the type locality.

TYPE LOCALITY. — Abrolhos continental slope, Brazil; MD-55, stn DC75, 18°59'S, 37°50'W, 295 m.

OTHER MATERIAL EXAMINED. — MD-55, stn DC75, 18°59'S, 37°50'W, 295 m, 27.V.1987, +150 spec. (MNHN); MD-55, stn DC63, 29°00'S, 37°48'W, 607-620 m, 27.V.1987, 32 spec. (MNHN); MD-55, stn DC65, 18°59'S, 37°50'W, 295 m, V.1987, 6 spec. (MNHN); MD-55, stn DC73, 19°00'S, 37°48'W, 607-620 m, V.1987, 17 spec. (MNHN).

ETYMOLOGY. — From *hyphalos* (Greek): under the sea, in the deep, concerning the relatively deep waters where this species inhabits.

DESCRIPTION

Shell large (reaching 12.0 mm length), subovate, homogeneously light cream in color, glossy, with a white subsutural belt. Spire moderately elevated, of three whorls, and about 48% the total length. Protoconch relatively low and large, forming a blunt apex. Sutures anterior to a wide channel. Fasciole line double. Parietal callus light, semi-translucent and relatively narrow, reaching the end of the aperture or a little above it, but never above the middle of the last whorl. Pillar structure smooth or with one or two folds in an inflexion of parietal wall, remainder smooth and almost straight. Younger forms are, usually, more inflated than adults. Deep water species (300-600 m depth). Known only from empty shells.

REMARKS

The form of shell of *O. hyphala* n. sp. (Fig. 2A) is relatively big-belled and distinguishes it from more slender taxa as *O. (Olivina) plata* (Ihering, 1909), *O. (Olivina) orejasmirandai* Klappenbach, 1964 and *O. (Olivina) tehuelcha*. It is close to *O. (Olivina) riosi* Klappenbach, 1991 and *O. (Olivina) puelcha* (Duclos, 1840). While *O. puelcha* is colored by tones of yellowish-brown or orange, *O. hyphala* n. sp. is devoid of colors except the milk-white subsutural belt. Additionally, *O. hyphala* n. sp. shows a double fasciolar line, while it is simple in *O. puelcha*.

Olivella riosi is very variable in the shell form but is always less inflated than *O. hyphala* n. sp., both species share a double fasciolar line but the pari-

etal calus in *O. hyphala* n. sp. is more lighty than in *O. riosi*.

Olivella hyphala n. sp. can be distinguished from *O. klappenbachi* n. sp. by its high spire. It may be distinguished from all other *Olivina* species by its subsutural band. Finally, the two new *Olivina* species differ conspicuously in bathymetric range from all previously recorded members of the subgenus – the next deepest record being 87 m (Rios 1994), for *Olivella (Olivina) riosi*.

Olivella (Olivina) klappenbachi n. sp. (Fig. 2D, E)

TYPE MATERIAL. — Holotype: MNHN; paratypes: MNRJ 8916; IBUFRJ 11913; MORG 41050; ANSP 410281. All from the type locality.

TYPE LOCALITY. — South of Cabo Frio, Rio de Janeiro State, Brazil, MD-55, stn CB105, 23°47'S, 042°10'W, 610 m.

ETYMOLOGY. — *Olivella klappenbachi* n. sp. is named after Dr Miguel Klappenbach from Montevideo Museum, Uruguay, who has studied the South American *Olivella*.

DESCRIPTION

Shell medium sized (about 6.0 mm length), roughly obconic, resembling a whirligig; color dirty cream. Parietal callus and aperture white. Callus broad, strong, sometimes forming like a rounded projection near the end of aperture. Parietal callus well developed, opaque, continuing a bit over the end of aperture but hardly reaching the middle of whorl. Pillar structure simple with one fold on the posterior end, remainder smooth. Parietal wall almost straight except the most anterior end where it is concave. Pillar structure does not extend into the aperture. Spire low to very low, suture broad and channeled, protoconch large and rounded, apex blunt. Fasciole simple. Operculum and radulae unknown, only empty shell collected. Deep sea species (610 m depth).

REMARKS

The whirligig-shaped, stout profile (Fig. 2D) is the main distinctive character of *O. klappenbachi* n. sp. This species and the variable *O. (Olivina) riosi*

share the double fasciolar line, but it is clearly deeper in *O. klappenbachi* n. sp. The parietal callus of *O. klappenbachi* n. sp. is also somewhat thicker than in *O. riosi*. The protoconch width in *O. klappenbachi* n. sp. is approximately twice that of *O. riosi*. Despite the shell form variability showed by *O. riosi* which, sometimes, superficially looks like a teetotum, it is mainly more oblong than *O. klappenbachi* n. sp. and due to its shell form the spire in the former species is lower than in *O. riosi*. *Olivella riosi* usually has yellowish lines or flames on the shell, but the pattern, if any, of *O. klappenbachi* n. sp. remains unknown because all specimens were dead-collected and devoid of color.

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