

A new species of *Liostomia* G.O. Sars, 1878 (Pyramidelloidea, Odostomini) from deep water around the Selvagens Islands

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Abstract: A new species belonging to the genus *Liostomia* and originating from deep Atlantic waters around the Selvagens Islands is described.

Introduction: The European Atlantic species belonging to the genus *Odostomia* were thoroughly studied by Aartsen (1987), Peñas, Templado & Martínez (1996), Aartsen, Gittenberger & Goud (1998), Peñas & Rolán (1999a, 1999b) and Peñas, Rolán & Swinnen (2014).

In Albuquerque, Borges & Calado (2009), the biogeographic and bathymetric characteristics of the Selvagens Islands were discussed in a detailed way. Some species described from deep water around the Atlantic banks of the Meteor group (south of the Azores Islands), like *Odostomia fehrae* (van Aarsten, Gittenberger & Goud, 1998) and *Odostomia prona* Peñas & Rolán, 1999, were reported from this locality.

Giannuzzi-Savelli *et al.* (2014) consider *Liostomia* a valid genus, characterised by the lack of spiral sculpture, a protoconch usually of type C and the lack of columellar teeth. The new species described herein is included in this genus despite having a spiral cord around the umbilical infundibulum.

During the 2013 oceanographic campaign of the Portuguese Task Group for the Extension of the Continental Shelf (EMEPC), the suction sampler of the ROV LUSO in the NRP Almirante Gago Coutinho ship collected samples in deep water around the Selvagens Islands (Portugal). As a result, some samples of an unknown *Liostomia* species were collected. After studying them, the species was considered new to science and it is described in the present work.

Systematics

Family PYRAMIDELLIDAE Gray, 1840

Genus *Liostomia* G.O. Sars, 1878

Type species: *Liostomia eburnea* Stimpson, 1851

Liostomia abreu sp. nov.

Figs 1-5

Type material: Holotype: (Fig. 1) deposited in Museu Municipal of Funchal (MMF 44409), Madeira, Portugal.

Paratypes: one in each of the following collections: Museu Nacional de História Natural e da Ciência, Lisbon (MUHNAC, MB28-004380), Museo Nacional de Ciencias Naturales of Madrid (MNCN 15.05/47535), Museum national d'Histoire naturelle, Paris (MNHN), Royal Belgian Institute for Natural Sciences, Brussels (RBINS, I.G. 33042; MT.3227), F. Swinnen collection (FSC) and EMEPC collection (L13D14S01).

Type locality: Selvagens Islands, sample code L13D14S01, 30°07.1784'N, 15°52.536'W, 604 m deep.

Description: Shell very small, turbiniform, with a short spire, fragile, colourless and rather transparent. Protoconch of heterotrophic type C, with a little more than one visible of about 290 µm in diameter. The teleoconch consists of about 1 ½ whorls, and bears a prominent spiral cord at its beginning, resulting in a slight elevation of the end of the protoconch. This cord is present on all of the shell, thereby separating it in two parts: the subsutural one which is a little depressed at the beginning and almost horizontal and the part below the cord, which is lightly convex and smooth. The growth lines are prosocline and irregular. At the base, a new spiral cord appears, forming an infundibulum for the umbilicus, which is deep and wide. Aperture ovoid, with a very fine peristome, which is a little angulous at

the top and the bottom. Columella slightly curved without any tooth.

Dimensions: The holotype is 0.85 mm in height x 0.76 mm in diameter.

Distribution: Only known from the type locality.

Remarks: The main distinguishing characteristics of the new species are the wide and well-defined umbilicus bordered by a spiral cord and the presence of another subsutural spiral cord.

Another *Odostomia* species with a wide umbilicus is *Odostomia umbilicatissima* Peñas & Rolán, 1999, but this species lacks the spiral cord around the umbilicus and the subsutural cord; furthermore the shell is larger (1.5 mm), the suture is very deep and the protoconch is of type B.

Etymology: The species' name honours Manuel Pinto de Abreu who, as the head of the Task Group for the Extension of the Continental Shelf (EMEPC), boosted the Marine Biodiversity Information System (M@rBis).

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the micrographs of the new species. Antonio A. Monteiro of Lisbon made the corrections to the text.

References:

- Aartsen, J.J. van, 1987. European Pyramidellidae. III. *Odostomia* and *Ondina*. *Bollettino Malacologico* 23(1-4): 1-34.
- Aartsen, J.J. van, Gittenberger, E. & Goud, J., 1998. Pyramidellidae (Mollusca, Gastropoda, Heterobranchia) collected during the Dutch CANCAP and MAURITANIAN Expeditions in the south-eastern part of the North Atlantic Ocean (part 1). *Zoologische Verhandelingen* 321: 1-57.
- Albuquerque, M., Borges, J.P. & Calado, G., 2009. *Moluscos Marinhos – Atlas das Ilhas Selvagens*. Direcção Regional do Ambiente, Funchal, Portugal, 308 pp.
- Estrutura de Missão para a Extensão da Plataforma Continental (EMEPC), 2013. Scientific Cruise EMEPC/PEPC/LUSO/2013.
- Giannuzzi-Savelli, R., Pusateri, F., Micali, P., Nofroni, I. & Bartolini, S., 2014. *Atlante delle conchiglie marine del Mediterraneo, Vol. 5 (Heterobranchia)*. Edizioni Danaus, Palermo, 112 pp + Apendice 96 pp.
- Peñas, A. & Rolán, E., 1999a. La familia Pyramidellidae Gray, 1840 (Mollusca, Gastropoda, Heterostropha) en África Occidental. 4. Los géneros *Megastomia*, *Odostomia*, *Ondina*, *Noemiamea* y *Syrnola*. *Iberus* suppl. 5: 1-150.
- Peñas, A. & Rolán, E., 1999b. Pyramidellidae (Gastropoda, Heterostropha) de la Misión Oceanográfica "Seamount 2". *Iberus* suppl. 5: 151-199.
- Peñas, A., Rolán, E. & Swinnen, F., 2014. The superfamily Pyramidelloidea Gray, 1840 (Mollusca, Gastropoda, Heterobranchia) in West Africa 11. Addenda 3. *Iberus* 32(2): 105-206.
- Peñas, A., Templado, J. & Martínez, J.L., 1996. Contribución al conocimiento de los Pyramidelloidea (Gastropoda, Heterostropha) del Mediterráneo español. *Iberus* 14(1): 1-82.

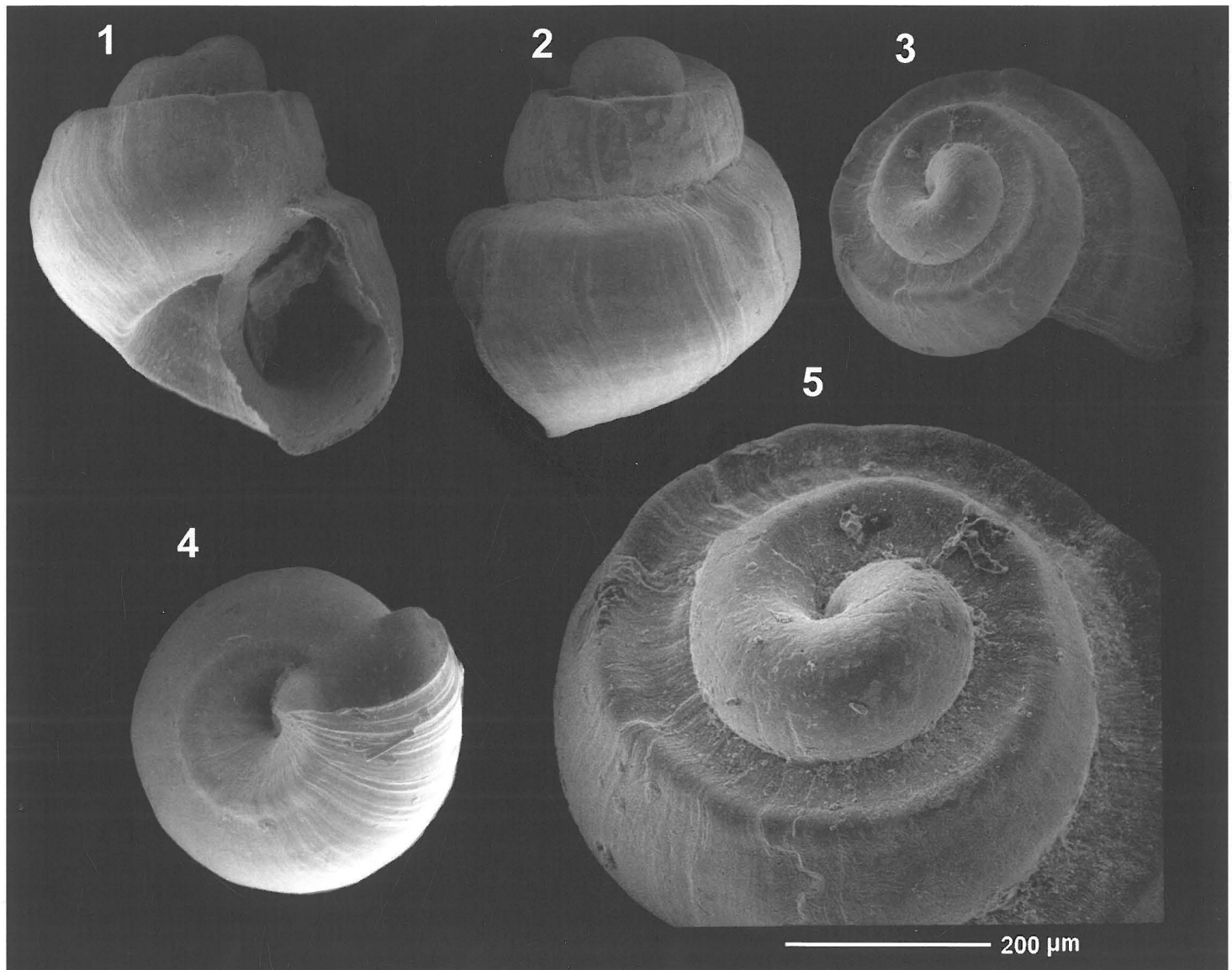
Plate:

1-5: *Liostomia abreui* sp. nov.:

1: holotype, 0.76 mm in diameter (MMF).

2-4: paratypes, dimensions in diameter: 0.71 mm (MHNL), 0.75 mm (MUHNAC), 0.69 mm (MNCN).

5: protoconch of the specimen in Fig. 3.



shelf of Western Australia. Due to the lack of exploration in this area, a more extended range can only be conjectured.

Habitat. All known specimens have been trawled at a depth of 120 m. Fishermen reported a bottom substrate of sandy rubble.

Description. Shell solid, of moderate size (70–80 mm), with slightly bulbous body whorl and tapered spire.

Protoconch smooth, large (average diameter of 6 mm), papilliform, of three whorls. Apex of protoconch white, marked with a brown blotch which extends, progressively thinning, along suture up to beginning of teleoconch (Fig. 2H). Transition protoconch/teleoconch gradual and smooth. Teleoconch of four shiny moderately convex whorls, slightly shouldered by light concave narrow subsutural band. Sculpture of faint irregularly spaced revolving striae, more conspicuous on subsutural zone, extending attenuated to the body whorl (Fig. 2H). Absence of axial sculpture. Suture appressed. Aperture high, narrow, forming average of 60 % of total shell length. Outer lip beveled and simple. Columella straight, with five oblique plaits, posterior one weakest. On three of the four examined specimens, one fine inconspicuous intermediary plait inserts between second and third plaits (Fig. 2G). Siphonal notch deep and narrow. Fasciole distinct.

Background color cream with a pattern of close, fine, zigzag, axial beige lines forming open tent-like markings, crossed by three narrow spiral bands of darker blotches, light on subsutural portion, more pronounced on middle body whorl and on anterior part. Coloration faded on holotype but typical pattern preserved.

Discussion. This new species can be compared first with the other large species of the genus *Notovoluta* inhabiting the West Australian waters:

Notovoluta norwestralis Bail & Limpus, 2003 (Fig. 2A-B), trawled dead in the vicinity of Rowley Shoals is the other inhabitant of the northwestern continental shelf. It is the most similar by sharing the same medium-sized fusiform shape, same brown blotch on protoconch and presence of subsutural spiral striae. The differences are constant: a smaller protoconch

(average diameter 4.6 mm), shorter spire less tapered, faint axial ribs on the two first teleoconch whorls, spiral striae restricted to the subsutural zone only, pattern finer and denser when visible.

Notovoluta gerondiosi Bail & Limpus, 2005 (Fig. 2C-D), from west off North-West Cape presents some similarities of shape and pattern but differs by having a thicker shell of slightly larger size (80–100 mm), smaller protoconch (average diameter 4.9 mm) with brown blotch reduced to the embryonic whorl only, strong axial ribs on the spire, absence of spiral striae, tent-like pattern slightly more open with two constantly broad spiral bands of blotches.

No confusion is possible with the other large western *Notovoluta* species: *Notovoluta baconi* Wilson, 1972, *N. capricornea* (Wilson, 1972), *N. pseudolirata* (Tate, 1888) are drastically different in shape and pattern.

In the northeast Australian waters, *Notovoluta gardneri* Darragh, 1983 (Fig. 2E-F) is different with its large rounded protoconch (average diameter 7–8 mm), shorter spire, more tapered anterior and a coarser tent pattern with two narrow spiral rows of black dashes on the last whorl.

Remarks. The range of this new species is unknown but similarity to other members of the genus and their wide ranges leads to reasonable expectation that this species will also be found over a wider range. This chance discovery brings the number of western *Notovoluta* to seven species, one of them still undescribed. With *Notovoluta kreuslerae* (Angas, 1865), *N. verconis* (Tate, 1892) and *N. occidua* Cotton, 1946 being the only species inhabiting the southern part of the continent, the dissymmetry with the only two known eastern species *Notovoluta gardneri* and *N. hoskensae* Poppe, 1992, very remote in the distribution of the genus, as well as the lack of species in the northern waters can be pointed out without explanation.

Etymology. Named after the daughter of Michael Zografakis, Kalotina.

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