

First record of *Lomanotus barlettai* García-Gomez, Lopes-Gonzalez & García, 1990 (Gastropoda: Heterobranchia: Nudibranchia) from the Adriatic Sea: remarkable range extension in the Mediterranean Sea

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ABSTRACT

Three specimens of *Lomanotus barlettai* were found while scuba diving at Sveta Marina (Labin, Croatia, Adriatic Sea). It is the first record from the Adriatic Sea and the third for the whole Mediterranean Sea, after those reported from the Catalan coast of Spain.

Keywords: *Lomanotus barlettai*, Mediterranean, Adriatic.

INTRODUCTION

Lomanotus barlettai (García-Gomez, Lopes-Gonzalez & García, 1990) is a very small cryptic species described from two specimens found at El Portil (Huelva) in the Atlantic coast of southern Spain (García-Gomez et al., 1990). The first record for the Mediterranean Sea is from Aiguafreda (Begur, Catalunya), photographed by Miguel Codina (@GROC) on 13/01/2014 and later published in Trainito & Doneddu (2014) as *Lomanotus* sp. with the remark of a strong resemblance to *L. barlettai*. Lately, on 08/11/2014, 2

specimens crawling on collected algae were recorded from L'Escala (Catalunya). Both findings were reported in Ballesteros et al. (2016).

The external morphology of the species, despite its dimensions, is well defined and easily recognizable among the species of the genus. Currently, the genus includes six valid species, with three Mediterranean species known to date: *L. barlettai*, *L. genei* Vèrany, 1846 and *L. marmoratus* (Alder & Hancock, 1845).

MATERIALS AND METHODS

The three individuals were observed *in situ* and photographed with the use of a Nikon D750 24 megapixels Full Frame camera, Nikkor AFS 105/2,8 VR lens with Nauticam + 15 additional lens and two Inon Z240 strobes. Postproduction on original files was performed through Photoshop© CS6 and Camera Raw© 8.8.0.397.

DISCUSSION

The three individuals were approximately 5 mm long. They were found in Sveta Marina (Labin, Croatia) on 10/12/2016 on the brown alga *Cystoseira* sp. which was covered by epiphytic red algae, on a detrital bottom at 20 m depth (Figure 1 a-b).

In the immediate vicinity of the animals were also present some colonies of hydroids, belonging to Superfamily Plumularioidea. This is consistent with the fact that *L. barlettai* was previously associated with two hydroid

species, *Kirchenpaueria pinnata* and *Kirchenpaueria halecioides* (as *Ventromma halecioides* in García-Gomez et al., 1990): both hydroid species are also present in the Northern Adriatic Sea.

The individuals were not collected, but the unambiguous identification was possible due to the high definition photographs revealing some diagnostic morphological traits: the shape of the rhinophores and of their sheaths, the posterior ridge of the rhinophores, the tuberculate ridge between them, the assemblage of the cerata. These traits of the Adriatic individuals well meet the original description. In particular, the most remarkable external features of *L. barlettai* are the small cephalic ridge, and the one or two constrictions found in the cerata and in the processes of the rhinophoral sheath (García-Gomez et al., 1990) (Figure 2 a-b).

The characters of the five species known until 1990 are found in García-Gomez et al. (1990); we report the more significant part of this in Table 1.

Table 1. Important morphological characters of *Lomanotus* species, modified from García-Gomez et al., 1990.

	<i>L. genei</i>	<i>L. marmoratus</i>	<i>L. phiops</i>	<i>L. vermiformis</i>	<i>L. barlettai</i>
Cerata	Narrow, spoon-shaped, not tentaculate	Short papillae	Short, conical papillae	Spoon-shaped, with or without tentacle	Papillae with 1 or 2 constrictions
Cephalic ridge	-	-	-	-	Present
Velar processes	2	2 or 3	1	1	2
Rhinophoral lamellae	28	18-20	6	7-12	8-9
Rhinophoral sheath	4 or 5 papillate processes	0-5 papillate processes	4-5 papillate processes	2-10 shallow processes	6-7 papillate processes
Foot corners	Long, grooved	Long, grooved	Short, not grooved	Short, not grooved	Short, not grooved

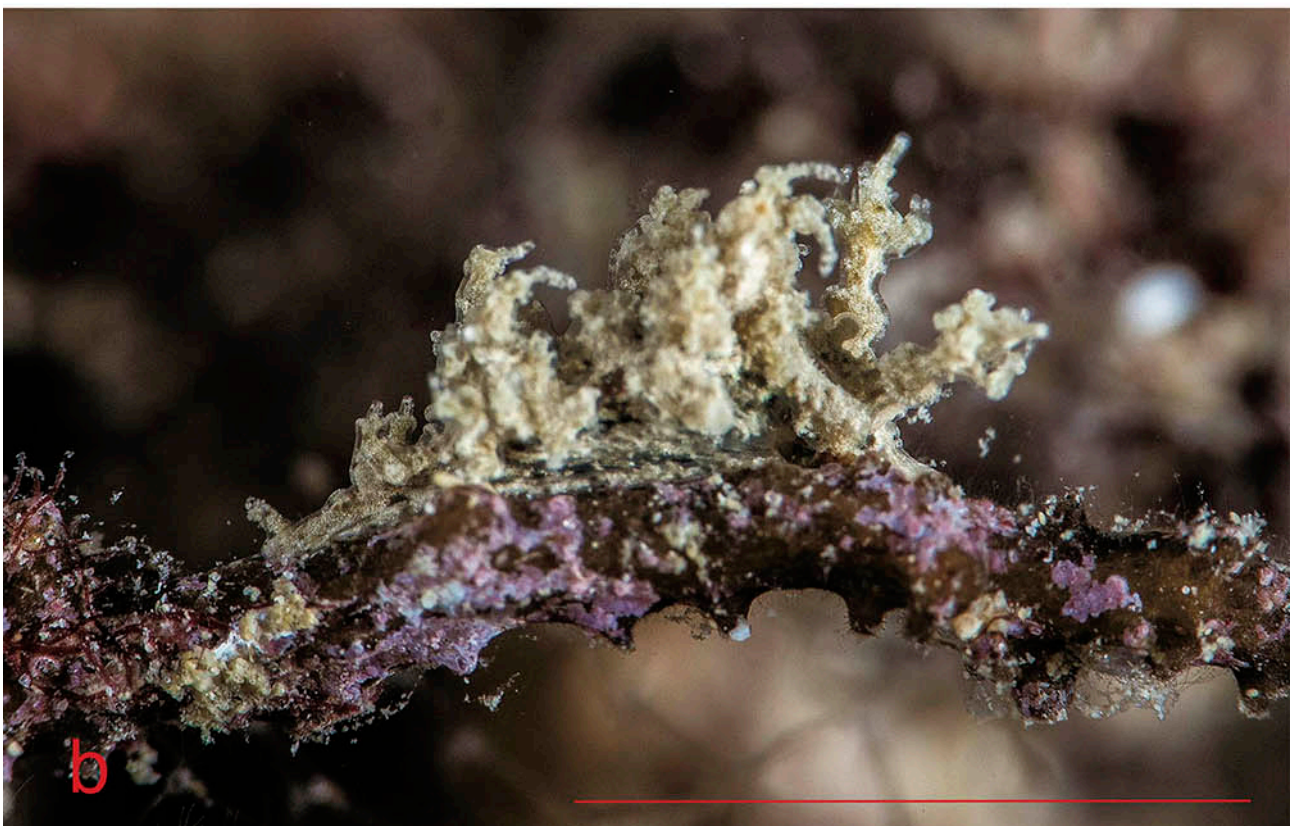


Figure 1. a. Three *Lomanotus barlettai* in the environment (Scale bar 5 mm); b. Right lateral view of *Lomanotus barlettai* (Scale bar 5 mm).

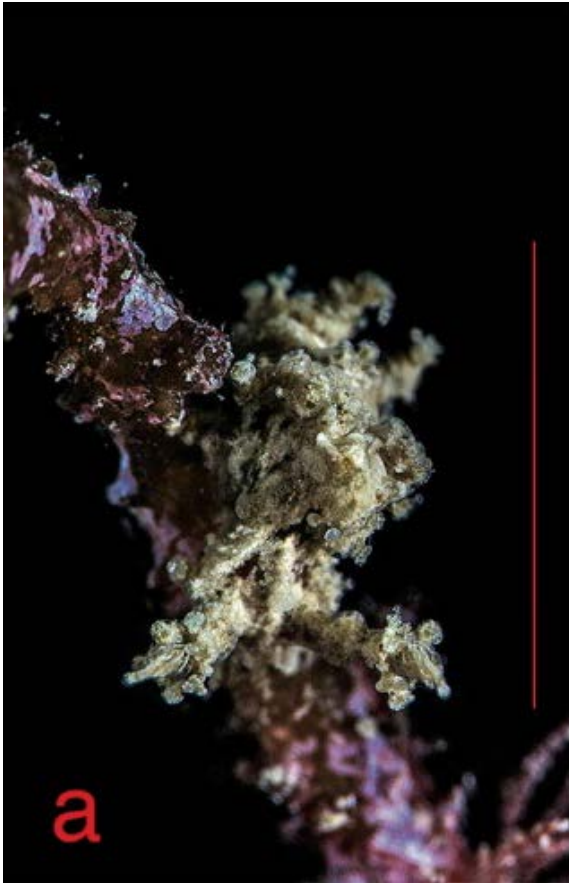


Figure 2. a. Front view (Scale bar 5 mm); b. Left lateral view (Scale bar 5 mm).

A sixth species of *Lomanotus* from Cabo Verde was described after 1990: *Lomanotus draconis* Ortea & Cabrera, 1999. This species can be easily differentiated from *L. barlettai* according to the original description. In the work of Ortea & Cabrera (1999) a useful identification key is also provided: it has allowed an easy identification of the Adriatic specimen.

Thus, this is the first report from the coast of Croatia and the entire Adriatic Sea, taking into account that a recent updated checklist of the Adriatic 'opisthobranchs' did not list this species among those present in the Adriatic (Zenetos et al., 2016).

The small dimensions and its appearance, more similar to debris than to a typical nudibranch, make this species very cryptic and thus probably neglected. This is probably the reason of its rarity and of limited distribution reported until now (Figure 3).

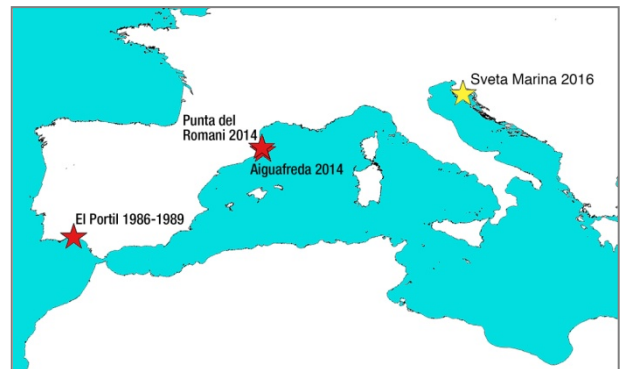


Figure 3. Known distribution of *Lomanotus barlettai*: in yellow, the findings described in this paper. In red, previous findings: El Portil 1986-1989 (Huelva, Spain 7,130766W 37,206911N) in García-Gomez et al., 1990; Aiguafreda 2014 (Begur, Catalunya, Spain 3,227988E 41,964015N) in Ballesteros et al., 2016; Punta del Romani 2014 (L'Escala, Catalunya, Spain 3,168949 E 42,115068N) in Ballesteros et al., 2016; Sveta Marina 2016 (Labin, Croatia 14,157611E 45,03135N) present paper.

ACKNOWLEDGEMENTS

We gratefully thank Ferdinando Boero for his contribution to the framing of the hydroids. We thank also Giulia Furfaro, Paolo Mariottini and Juan Moles Sanchez for their helpful suggestions.

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Received: 13. 01. 2017.

Accepted: 03. 03. 2017.

In memoriam

After this short communication was accepted, on 6th of March 2017, Barbara Camassa died in tragic car accident: she was the author of the photographs that are the source of this communication. She was a wonderful person, a skilled underwater photographer with great curiosity and artistic sensibility for small animals, nudibranchs over all. Her photographs will continue to be inspiring both for sea lovers and researchers: other findings by Barbara will be of great aid in future papers. We will miss her.

Prvi nalaz *Lomanotus barlettai* García-Gomez, Lopes-Gonzalez & García, 1990 (Gastropoda: Heterobranchia: Nudibranchia) iz Jadranskog mora: izuzetno proširenje rasprostranjenosti u Sredozemnom moru

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SAŽETAK

Tri jedinke *Lomanotus barlettai* su nađene tokom ronjenja na lokaciji Sveta Martina (Labin, Hrvatska, Jadransko more). To je prvi nalaz za Jadransko more i nakon onih navedenih za obalu Katalonije u Španiji treći nalaz za cijelo Sredozemno more.

Ključne riječi: *Lomanotus barlettai*, Sredozemlje, Jadran