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ON THE OCCURRENCE OF *VELOLAMBRUS EXPANSUS* (BRACHYURA, PARTHENOPIDAE) IN HELLENIC WATERS

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ABSTRACT

The finding in 2022 of the parthenopid Velolambrus expansus (Miers, 1879) in the Hellenic waters of the Aegean Sea is reported. This crab is considered rare in the Mediterranean Sea and the distribution of its records in the basin is updated and briefly discussed.

Key words: Crustacea Decapoda, rare species, Mediterranean Sea, distribution

SULLA PRESENZA DI *VELOLAMBRUS EXPANSUS* (BRACHYURA, PARTHENOPIDAE) IN ACQUE ELLENICHE

SINTESI

Viene segnalato il ritrovamento nel 2022 del partenopide Velolambrus expansus (Miers, 1879) nelle acque elleniche del mar Egeo. Questo granchio è considerato raro nel Mediterraneo e la distribuzione delle sue segnalazioni nel bacino viene aggiornata e brevemente discussa.

Parole chiave: Crostacei Decapodi, specie rare, Mar Mediterraneo, distribuzione

INTRODUCTION

The crab *Velolambrus expansus* (Miers, 1879) is an Atlanto-Mediterranean species (Manning & Holthuis 1981) rarely collected in the Mediterranean Sea (García-Raso, 1989; Christodoulou *et al.*, 2009). The species was described for the first time by Miers (1879) as *Lambrus (Parthenopoides) expansus*. This parthenopid lives between 30 m and 190 m of depth on a variety of substrates such as gravel, sand, broken shell, coral, mixed rocky-sandy bottoms, calcareous algae (e.g., maërl), volcanic detritus (Pastore, 1975; Manning & Holthuis, 1981; García-Raso, 1989; d'Udekem d'Acoz, 1999; Spanò, 2002).

In the Mediterranean Sea, *V. expansus* was first recorded in 1893 at northwest of Crete Island, Greece (Adensamer, 1898). In the Hellenic waters, after this old record, the species was collected only a second time, in the Aegean Sea (Koukouras *et al.*, 1992, 1993).

The recent finding of two specimens of *V. expansus* in the Saronikos Gulf, Greece, is described, ascertaining its current occurrence in the Aegean Sea after more than 65 years and updating knowledge on its distribution in the whole Mediterranean basin.

MATERIAL AND METHODS

On 19 June 2022 two crabs of similar features were collected off the island of Fleves, Saronikos Gulf, southwestern Aegean Sea (37.7344°N, 23.7692°E) (Fig. 1), as

by-catch of trammel net at 120 m of depth on a muddy sand and maërl bottom. The above fishing gear, named *παρμπουνοδίχτια* (barbounodichtia) is commonly used in the Hellenic small scale fishery and targets prevalently red mullet *Mullus* spp. but also other species (Adamidou, 2007). The discarded crab specimens, currently stored by one of the authors (P.O.), were identified following Manning & Holthuis (1981), Falciai & Minervini (1992) and Tan & Ng (2007). Measurements (CW, carapace width, CL, carapace length) of both specimens were taken with a caliper to the nearest 0.1 mm.

RESULTS AND DISCUSSION

The specimens (Fig. 2) were identified as *V. expansus*, according to the above mentioned literature. Both crabs were males, the largest, specimen A, with CW 5.43 mm and CL 4.22 mm, the smallest, specimen B, with CW 3.0 mm and CL 2.98 mm.

The following main characteristics were observed (Fig. 2): carapace triangular in outline, slightly broader than long in specimen A, same CW and CL in specimen B. Front prominent forming a straight line with sides of carapace; in specimen A, the front terminates with five tubercles, the central more pronounced; in specimen B, the front appears rounded, slightly sunken in the center. In the posterior half of both specimens the lateral margin is slightly widened, showing 3 shallow teeth just before posterolateral angle. Posterior margin of carapace slightly convex, with inconspicuous tuber-

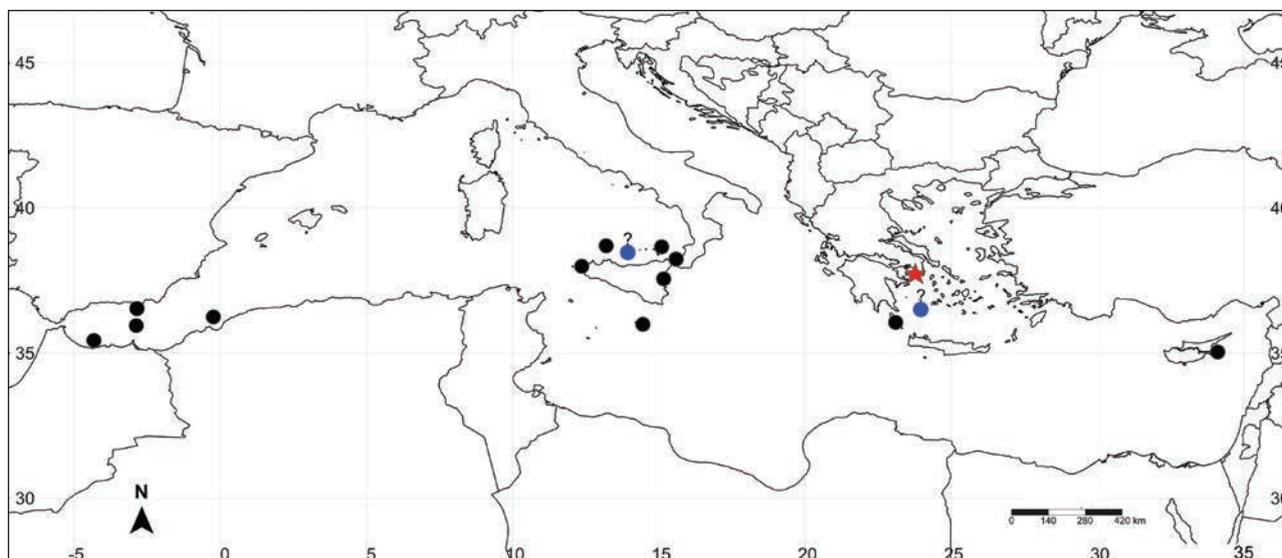


Fig. 1: Distribution of records of *Velolambrus expansus* in the Mediterranean Sea. Black circles: published records with specified or approximate coordinates; blue circles, published records with unspecified site of collection (south Tyrrhenian Sea and Aegean Sea); red star, present record. Detail in Tab. 1.

Sl. 1: Razširjenost vrste *Velolambrus expansus* v Sredozemskem morju na podlagi zapisov o pojavljanju. Črni krogi: objavljeni zapisi z natančnimi ali približnimi koordinatami; modri krogi, objavljeni zapisi z neoznačeno lokaliteto najdbe (južno Tirensko morje in Egejsko morje); rdeča zvezdica, pričujoči zapis o pojavljanju. Detajli v Tab. 1.

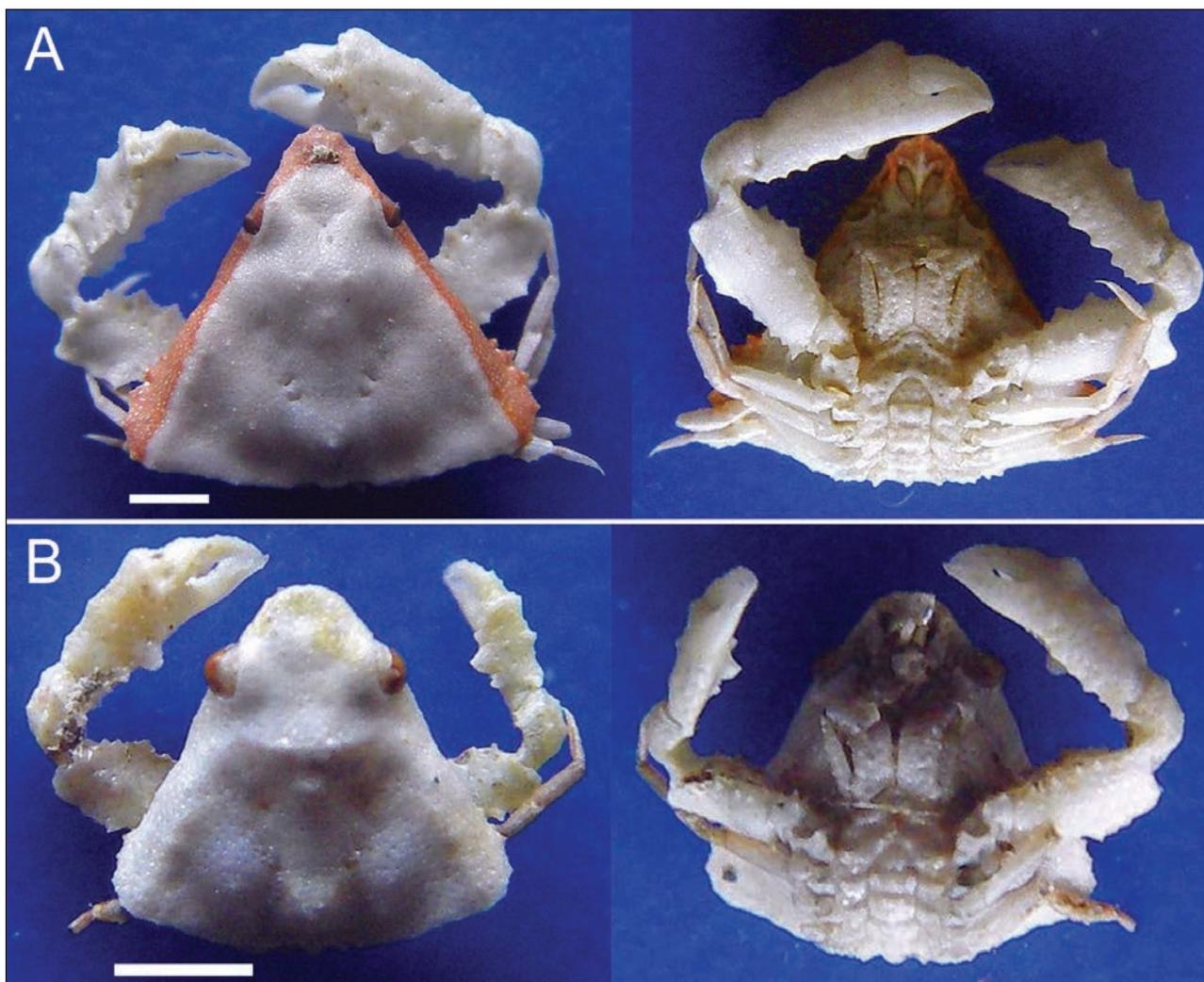


Fig. 2: Dorsal and ventral view of the two male specimens of *Velolambrus expansus* from the Saronikos Gulf, Greece. Scale bars: 1 mm (photo: P. Ovalis).

Sl. 2: Pogled s hrbtne in trebušne strani na dva samca vrste *Velolambrus expansus* iz zaliva Saronikos v Grčiji. Merilo: 1 mm (foto: P. Ovalis).

cles. The expanded lateral margins and the posterior margin of carapace partially cover the ambulatory legs. Carapace grossly smooth but evenly minutely pitted. Gastric region with three prominences. Posterior part of carapace bearing one median and two submedian elevations, median with a tubercle. Oblique, smooth ridge present over each branchial region ending in posterolateral angle and running parallel to lateral margin of carapace. Chelipeds different, heaviest the right in specimen A, the left in specimen B. Upper surface of palm slightly smooth; outer margin bearing ridge with three large blunt teeth, more pronounced in smaller than in larger cheliped. Inner margin of the upper surface of palm bearing about five blunt teeth, middle largest. Merus short and wide, inner margin bearing distinct larger and smaller teeth, on outer

margin teeth less conspicuous. Lower margin of merus with longitudinal row of large tubercles, inner surface bearing some scattered tubercles, outer surface almost smooth. In specimen A, antennal article IV same length of antennal article III; in specimen B, antennae were damaged. Telson triangular, broader than long.

Color. Specimen A: front and lateral margins of carapace rose, all the remaining surface of carapace and legs whitish; specimen B: uniformly whitish (Fig. 2).

The size of specimen B was small and not included in the known size range of carapace, CW 5–12 mm and CL 4–10 mm, reported by Manning & Holthuis (1981); it was also smaller than the size of specimens collected in the last forty years in the Mediterranean and listed in Tab. 1. Comparing our specimens with those reported

Tab. 1: References and detail of the records of *Velolambrus expansus* in the Mediterranean Sea (n: number of specimens; CW: carapace width, mm; CL: carapace length, mm).

Tab. 1: Objavljeni zapisi in detajli o pojavljanju vrste *Velolambrus expansus* v Sredozemskem morju (n: število primerkov; CW: širina karapaksa, mm; CL: dolžina karapaksa, mm).

Country	Date	Location	Depth (m)	Coordinates	Bottom	n	Sex	CW	CL	References
Greece	1893	Aegean Sea, NW Crete	160	36.05°N, 23.1°E	Nullipores & coarse sand	1	♂			Adensamer (1896); Holthuis & Gottlieb (1958); Manning & Holthuis (1981)
	1955	Aegean Sea								Koukouras <i>et al.</i> (1992, 1993); d'Udekem d'Acoz (1999)
	2022	Aegean Sea, Saronikos Gulf	120	37.7344°N, 23.7692°E	Maërl & muddy sand	2	♂ ♂	5.4 3.0	4.2 3.0	Present study
Italy	1972	West Ionian Sea, north to the Gulf of Catania	50-60	37.55°N, 15.1667°E	Detritus & organic remains	2	♂			Pastore (1975)
	1983	Ustica Isl.	50-200	~38.6880°N, 13.2025°E		2				Covazzi Harriague <i>et al.</i> (2008)
		Panarea Isl.	50-100	~38.6522°N, 15.0982°E		1				
		Levanzo Isl.	50-100	~37.9812°N, 12.3671°E		1				
	1995	Strait of Messina	47	38.2322°N, 15.5831°E	Coralligenous	4	♂	9.9	8.7	Spanò (1998a, 2002); Pipitone & Arculeo (2003); Froglià (2010); Spanò & De Domenico (2017)
			55	38.2353°N, 15.585°E	Coralligenous		♂	10.4	9.5	
60			38.2317°N, 15.5839°E	Coralligenous	♂		8.4	7.3		
190			38.2281°N, 15.5942°E	Hard	♀ ovig.		11.9	9.8		
1992-1996	South Tyrrhenian Sea								Spanò (1998b); Pipitone & Arculeo (2003); Froglià (2010)	
Cyprus	2004		68	35.0307°N, 34.1106°E	Maërl	1	♂		9.7	Christodoulou <i>et al.</i> (2009)
Malta	1996	Off Qawra, Ghallis	60-100	35.9822°N, 14.4578°E	Maërl	1				Sciberras <i>et al.</i> (2009); Mifsud (2017); Hall-Spencer <i>et al.</i> (2018)
		Off St Paul's Islands		36.0015°N, 14.4307°E		1				
Spain	1985	Alboran Sea	70-100	36.5267°N, 2.8433°W	Red coral	1	♂	10.4	7.8	García-Raso (1989); Marco-Herrero <i>et al.</i> (2015)
	2011-2012		40-150	~35.9372°N, 3.03648°W	Gravel					García-Raso (2012); García-Raso <i>et al.</i> (2014)
Morocco	1984	Alboran Sea	170	35.4283°N, 4.3133°W	Shell remains	6	♂ ♀	Largest 10 Largest 7.5 Smallest ovig. 6.8		García-Raso (1996)
Algeria		Western Algeria (Mostaganem-Ghazaouet)		~ 36.2369°N, 0.2301°W		Larvae				Seridji R., 1989; Grimes <i>et al.</i> (2016); Bakalem A. pers. comm. (2022)

in the literature (Pastore, 1975; García-Raso, 1989; Tan & Ng, 2007; Christodoulou *et al.*, 2009), some morphological characters appear variable, such as the expansions of the lateral margins in the posterior half of carapace and the presence or absence of tubercles in the front and in the lateral ridges. Color polymorphism is observed in this small species: uniform white-grey (Pastore, 1975) as in specimen B, creamy with reddish brown irregular spots as in specimens observed in Madeira (Wirtz, 2020, citing Araújo & Wirtz, 2015), whitish with reddish lateral and frontal margins as the specimen of *V. cf expansus* photographed within

the Tagoro Volcano complex, Canary Islands, Spain (Sotomayor-García *et al.*, 2019), this last similar to the color of our specimen A.

In the Eastern Atlantic, *V. expansus* has been recorded from Madeira, the Azores, the Canary Islands, and West Africa from Mauritania to the islands of Cape Verde to São Tomé and Annobon islands in the Gulf of Guinea (d'Udekem d'Acoz, 1999). Although the occurrence of this crab is documented from all across the Mediterranean, to date the records of this species in the basin appear scattered, prevalently concentrated in the Alboran Sea and around Sicily (Tab. 1 and Fig. 1).

It is rarely detected likely for its small size and no commercial value and consequent discard during fishing operations, but also for the relatively high depths where it lives and for the mimetic color patterns, as happens in other marine crabs (Tan & Richer de Forges, 1993; Bedini, 2002; Stevens, 2016; Price *et al.*, 2019), which render difficult its observation. The species *V. expansus* may be more abundant than expected and palatable for other organisms like fishes. In fact, Chartosia *et al.* (2021) recently documented that the species is a component of the diet of the non-indigenous tetraodontid *Torquigener flavimaculosus* Hardy and Randall, 1983, in Cyprus.

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O POJAVLJANJU RAKOVICE VRSTE *VELOLAMBRUS EXPANSUS* (BRACHYURA, PARTHENOPIDAE) V GRŠKIH VODAH

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POVZETEK

Avtorja poročata o najdbi vrste rakovice Velolambrus expansus (Miers, 1879) iz družine Parthenopidae v grških vodah Egejskega morja. Gre za redko vrsto v Sredozemskem morju. Avtorja na kratko razpravljata o razširjenosti in podajata listo do zdaj objavljenih zapisov o pojavljanju.

Ključne besede: Crustacea Decapoda, redke vrste, Sredozemsko morje, razširjenost

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