

Research article**Second Record of *Arcania brevifrons* Chen, 1989 (Decapoda: Leucosidae) from the Mediterranean coast of Türkiye**Tahir ÖZCAN^{1,*}, A. Suat ATEŞ^{2,*}¹İskenderun Technical University, Faculty of Marine Sciences and Technology 31200 İskenderun, Hatay, Türkiye²Çanakkale Onsekiz Mart University, Faculty of Marine Sciences and Technology 17100 Çanakkale, Türkiye*Corresponding author: tahir.ozcan@iste.edu.tr; tahozcan@gmail.com

Abstract: The present study reports the second occurrence of *Arcania brevifrons* Chen, 1989 from the Mediterranean Sea coasts of Türkiye, based on specimens collected from trawl bycatch in Iskenderun Bay on 23.10.2025. This study, which examines two males and one female, provides comprehensive morphological descriptions of the species.

Keywords: *Arcania brevifrons*, exotic invasion, Mediterranean Sea, Türkiye

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Introduction

The Eastern Mediterranean Sea is continuously subject to the introduction of species originating from the Red Sea and the Western Indo-Pacific Ocean. The introduction of exotics via the Suez Canal has followed an upward trend over recent decades. Paradoxically, a recent study indicated that between 2011 and 2016, the annual rate of marine alien species introductions into the Mediterranean decreased, independent of the introduction pathway (Zenetos, 2017). Furthermore, Zenetos et al. (2022) reported that the number of new species has been increasing since 2000, with an average of 21 new exotic species introduced to European seas each year during the last six-year evaluation period (2012–2017). This increase has been attributed to intensified human activities and research efforts in European seas since the beginning of the 21st century.

The Mediterranean coast of Türkiye is currently subject to invasion by numerous exotics. To date, a total of 22 exotic crab species were reported from Turkish waters (Bakır et al., 2024; Özcan & Özcan, 2025). Leucosiid crabs, colloquially referred to as nut or pebble crabs, exhibit morphological traits that mimic small stones—an adaptation enabling crypsis

within sandy and silty substrata across both littoral and marine habitats (Rasheed et al., 2023).

Globally, the genus *Arcania* comprises 31 recognized species (WoRMS, 2026). The genus *Arcania* Leach, 1817 is represented by five species in the Red Sea and adjacent waters: *A. brevifrons* Chen, 1989, *A. erinacea* (Fabricius, 1787), *A. gracilis* Henderson, 1893, *A. septemspinosa* (Fabricius, 1787), and *A. tuberculata* Bell, 1855 (Galil, 2001). Among these, *A. brevifrons* was reported from the Israeli coast, a region adjacent to the Turkish Mediterranean and characterized by a high density of non-indigenous species. The present study documents the second record of *A. brevifrons* from the Mediterranean coast of Türkiye.

Material ve Methods

Sampling was carried out off İskenderun Bay (Fig. 1) using a commercial bottom trawler. Trawling was performed on October 23, 2025, at depths ranging from 55 to 65 m over sandy substrates. Following collection, the specimens were transported to the Faculty of Marine Sciences and Technology in İskenderun. All crab specimens were photographed,

and their morphometric measurements were subsequently recorded.



Figure 1. Map of sampling location

Results

Systematics

Family: Leucosiidae Samouelle, 1819

Genus: *Arcania* Leach, 1817

Arcania brevifrons Chen, 1989 (Fig. 2)

Material examined: 2♂, 1♀, GPS coordinates; 36°29'31"N-35°48'05"E, 36°33'30"N-35°54'33"E, 55-65 depth, 23.10.2025, sandy bottom, bottom trawl.

A total of 3 *A. brevifrons* specimens were collected from the sampling area. Morphometric analysis showed carapace lengths and widths ranging from 22–24 mm and 25–27 mm, respectively, with a total body weight of 2.9–4.3 g.

Arcania brevifrons exhibits morphological similarities to *A. tropicalis* (Prema et al., 2020). However, Galil et al. (2017) demonstrated that the former can be readily distinguished by the distal morphology of the first gonopod. Additional diagnostic characters include the morphology of the vulvae and the distinct colour patterns. This species was originally described from the Indo-Pacific, including Fiji, the Philippines, Indonesia, the Seychelles, Madagascar, the Mozambique Channel, and the Red Sea, occurring at depths ranging from the intertidal zone to 92 m (Galil, 2001).



Figure 2. Dorsal view of *Arcania brevifrons*

Arcania brevifrons was firstly reported off the coast of Israel in the Mediterranean by Galil et al. (2017). Subsequently, the species was recorded from the Gulf

of Antalya (Türkiye) and the coast of Rhodes (Greece) (Bariche et al., 2020; Kondylatos et al., 2023). The present study reveals the second occurrence of *A. brevifrons* Chen, 1989 from Turkish coast.

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Ethical Approval

No need to ethical approval for this study.

Conflicts of Interest

The authors declare that she has no conflict of interest.

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