
First record of the white prawn *Palaemon longirostris* H. Milne Edwards, 1837 in the Mediterranean waters of Morocco

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Taybi, A. F., Mabrouki, Y., Cuesta, J. A., 2021. First record of the white prawn *Palaemon longirostris* H. Milne Edwards, 1837 in the Mediterranean waters of Morocco. *Arxius de Miscel·lània Zoològica*, 19: 307–312, Doi: <https://doi.org/10.32800/amz.2021.19.0307>

Abstract

First record of the white prawn Palaemon longirostris H. Milne Edwards, 1837 in the Mediterranean waters of Morocco. In this paper, we provide the first record of the white prawn *Palaemon longirostris*, a palaemonid shrimp with socio-economic interests, in the north-eastern coasts of Morocco, and the third confirmed record for the Mediterranean. Future surveys may increase its known range in the Mediterranean Sea.

Key words: Caridea, Palaemonidae, Moulouya, Ramsar site

Resumen

Primer registro de camarón blanco Palaemon longirostris H. Milne Edwards, 1837 en las aguas mediterráneas de Marruecos. En este trabajo reseñamos el primer registro de camarón blanco *Palaemon longirostris*, un crustáceo palaemónido de interés socioeconómico, en las costas nororientales de Marruecos. Es el tercer registro de la especie confirmado en el Mediterráneo. Futuros estudios podrían ampliar su área de distribución conocida en el mar Mediterráneo.

Palabras clave: Caridea, Palaemonidae, Moulouya, Sitio Ramsar

Resum

Primer registre de gambeta blanca Palaemon longirostris H. Milne Edwards, 1837 a les aigües mediterrànies del Marroc. En aquest treball ressenyem el primer registre de gambeta blanca *Palaemon longirostris*, un crustaci palaemònid d'interès socioeconòmic, a les costes nord-orientals del Marroc. És el tercer registre de l'espècie confirmat al Mediterrani. Futurs estudis podrien ampliar la seva àrea de distribució coneguda al mar Mediterrani.

Paraules clau: Caridea, Palaemonidae, Moulouya, Lloc Ramsar

Received: 03/05/2021; Conditional acceptance: 12/07/21; Final acceptance: 03/12/2021

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Introduction

The white prawn *Palaemon longirostris* H. Milne Edwards, 1837, is a common palaemonid in Atlantic European estuaries. It inhabits freshwater most of the year but migrates to estuarine brackish waters for reproduction (Cartaxana, 2003). It measures up to 7 cm in length and has a maximum lifespan of 2 years (Béguer et al., 2010). Traditionally exploited by fishermen in Europe, this crustacean is of important economic and heritage interest (Béguer, 2009).

The native range of *P. longirostris* includes the Atlantic coasts from Northwestern Germany to the Northwest of Spain (González–Ortegón and Cuesta, 2006). While in the Mediterranean Sea it is known with certitude from the Guadiaro Estuary in Spain (González–Ortegón and Cuesta, 2006) and Oued Miliana in Tunisia (Cartaxana, 2015), and scattered records have been reported in the Black sea (Sezgin et al., 2007), other reports are uncertain (Zariquiey Alvarez, 1968; d'Udekem d'Acoz, 1999).

In the present study, we report for the first time the occurrence of the white prawn *P. longirostris* in the Mediterranean waters of the North African coast of Morocco. Future surveys may increase its known range in the Mediterranean Sea.

Material and methods

The prawns were captured by dragging a net in the wetland of the Moulouya river mouth (35°07'21.4" N 2°20'35.5" W) as part of a hydrobiological study in the Mediterranean region of eastern Morocco (fig. 1). The sampling, gathered through searching in the brackish waters near the shore, was performed using a hawk net at a depth ranging between 0.5 and 1 m, dragging it randomly through the marine vegetation (see Taybi and Mabrouki, 2020 for more details). Measurements (body length) were taken onboard using a caliper.

Results

Three female specimens of *Palaemon longirostris* were collected at a Ramsar listed site of the Moulouya river mouth on December 30th, 2019 (fig. 1; table 1). This finding represents the first record of this species in the Mediterranean coast of Morocco and the second record for North Africa. The interval size of the captured shrimps varies from 4.5 to 5.3 cm (body length). Only one specimen was kept; the other two females were returned to the water. The voucher specimen was deposited at Sidi Mohamed Ben Abdellah University, Faculty of Sciences Dhar El Mehraz in Fez, Morocco. Table 1 shows the physicochemical parameters of the water at the point of collection.

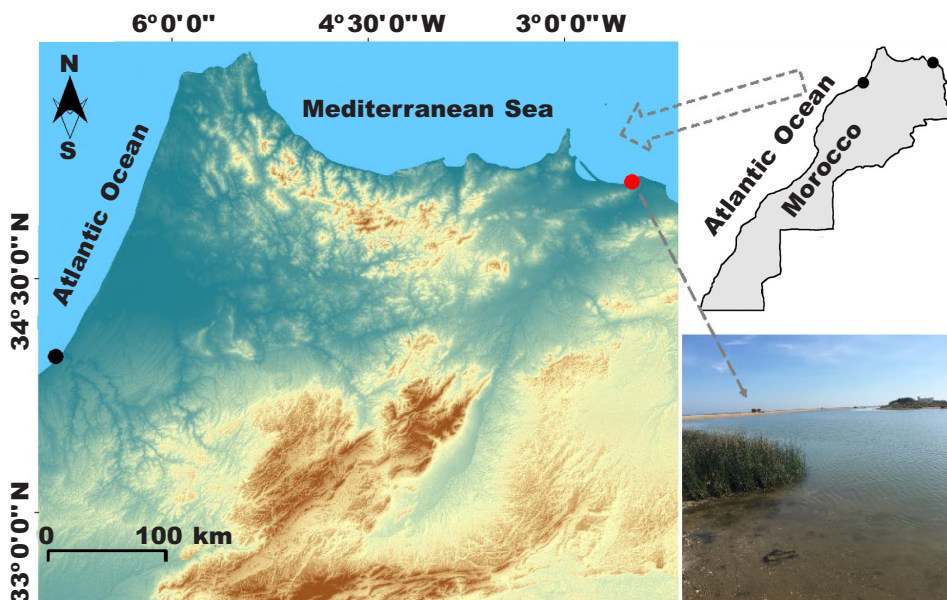


Fig. 1. Distribution of *Palaemon longirostris* in Morocco and North Africa (old record black dot, new record red dot), with a view of the Moulouya estuary.

Fig. 1. Distribución de *Palaemon longirostris* en Marruecos y el norte de África (punto negro: registro antiguo; punto rojo: nuevo registro) y vista del estuario del Moulouya.

Table 1. Details of the Moulouya River mouth and analysis of parameters where *Palaemon longirostris* was found: GPS, GPS coordinates; N, number of specimens and sizes; T, temperature; Do, dissolved oxygen; S, salinity.

Tabla 1. Detalles de la desembocadura del río Moulouya y parámetros analizados en el lugar de recolección de *Palaemon longirostris*: GPS, coordenadas GPS; N, número de especímenes y tamaños; T, temperatura; Do, oxígeno disuelto; S, salinidad.

Date	GPS	N	T	Do	S	pH
30/12/2019	35°07'23.2"N 2°20'34.2"W	3 ♀ 4.5 cm, 4.7 cm and 5.3 cm	16.7°C	6 mg/l	1.711 g/l	6.5



Fig. 2. Photograph of *Palaemon longirostris* H. Milne Edwards, 1837, female (preserved in alcohol).

Fig. 2. Fotografia de *Palaemon longirostris* H. Milne Edwards, 1837, hembra (ejemplar conservado en alcohol).

Discussion

On the Atlantic coast, *P. longirostris* has been recorded in several estuaries in Western European countries (Smaldon et al., 1993; Van Den Brink and Van Der Velde, 1986; Béguer, 2009) to Morocco at the Mouth of Oued BouRegreg (Elkaim, 1974). In the Mediterranean basin, it has been specifically recorded at the Guadiaro estuary in Spain (González–Ortegón and Cuesta, 2006) and at the Oued Miliana in Tunisia (Cartaxana, 2015). There are also other scattered records in the Mediterranean and the Black Sea (Zariquiey Álvarez, 1968; d'Udekem d'Acoz, 1999; Sezgin et al., 2007). We here report it for the first time on the Mediterranean coast of Morocco.

The species can be identified by its usual 8 teeth uniformly distributed along the rostrum; teeth on ventral margin with straight tips (fig. 2); anterolateral spine of basal segment of antennule reaching about half the length of the second segment, and the distal half of the dactylus of the second pereopod always beyond the tip of the rostrum and pleon with a slightly orange striped pattern. It usually, inhabits estuarine regions and can live in either in salt or in freshwater, although it generally prefers the brackish waters of large rivers (Campbell and Jones, 1989; González–Ortegón and Cuesta, 2006; González–Ortegón et al., 2006). In eastern Morocco, its environment consists of large sections of the Moulouya River to its confluence with the Mediterranean, at an altitude ranging between 0 and 1 m above sea level. The salinity of the mouth of the Moulouya varies between 2.8 and 1.5 g/l (Taybi et al., 2020).

The white prawn is a resident species and can complete its entire life cycle in an estuary, where it is the most common species and frequent in all seasons (Béguer, 2009). It has very strong osmoregulatory capacities, supporting a wide range of salinity. Some authors qualify it as a hyper–hypo–osmoregulator (González–Ortegón et al., 2006). Sexual spatial segregation can be observed; males are found in the mesohaline zone, in saltiest waters, while females inhabit ligohaline and fresh waters (Béguer et al., 2010). This could explain the lack of males in our samples.

The rostrum of females from Mediterranean Morocco, short and wide, is more similar to that of the northern Atlantic specimens (UK, Netherland, and North Spain), and Tunisia, than those from Portugal, south of Spain to Morocco (Atlantic), as already pointed out in the morphometric study by Cartaxana (2015) in the case of Tunisia specimens. These differences in the morphology of the female rostrum between populations of a same species led in the past to descriptions as belonging to a different species, *Palaemon garciacidi*, whose females have a longer, more slender and upward curved rostrum. However, molecular and morphometric analysis by Cartaxana (2015) showed that *P. garciacidi* is not a valid species. These differences in the rostrum were considered in the key to species of *Palaemon* from European waters by González–Ortegón and Cuesta (2006) who separately identified the two types of females in *P. longirostris*.

The present record highlights the need for wider assessments in the Mediterranean, especially along the Maghrebian coasts, where studies are lacking. With habitat deterioration and the arrival of invasive species, many autochthonous and endemic species could see their regional distribution greatly reduced or even disappear.

Acknowledgements

We thank the editor and reviewers, whose helpful comments improved the present paper.

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