Note on *Parastichopus regalis* (Cuvier, 1817) from the Sidi-Medjdoub area of Mostaganem, Algeria

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Abstract

Parastichopus regalis (Cuvier, 1817) is a sea cucumber species reported from several areas of the Mediterranean Sea. Three individuals of this species were collected by small-scale fishers at the Sidi-Medjdoub area of Mostaganem, Algeria in February 2019 at a depth of 53 m. A morphological, anatomical and endoskeletal description was carried out on each individual.

Keywords: *Parastichopus regalis*, small-scale fisheries, Mostaganem, Algeria.

Introduction

In Algeria, no studies have been conducted on the Stichopodidae family, which is represented in the Mediterranean by *Parastichopus regalis*. This species is mainly distributed in the northwest of the Mediterranean Sea and in the eastern Atlantic Ocean (Ramón et al. 2010). In the Mediterranean Sea, *P. regalis* is caught as bycatch by trawlers and is marketed for human consumption in Europe (Spain, Turkey and Greece) (Ramón et al. 2010). In Catalonia (Spain), it is currently the most expensive seafood product, reaching EUR 130/kg fresh weight (Ramón et al. 2010). Few biological data are available on *P. regalis* (Santos et al. 2015; Galimany et al. 2018; Ramón et al. 2019). This is probably because this species expels its organs when the nets are hauled in, making it difficult to collect and monitor them (González-Wangüemert et al. 2018; several personal observations during the collection of this species).

Methods

This study was carried out in the Sidi-Medjdoub region, which is located in the west of the Algerian coast (Fig. 1). An indirect method of recovering bycatch (not targeted by

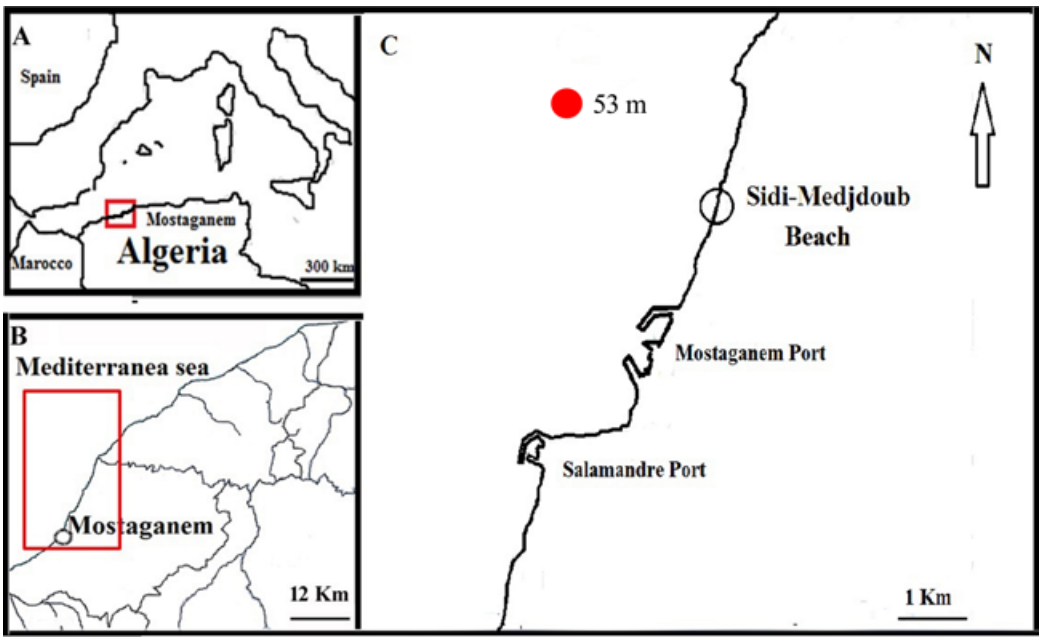

Figure 1. Geographical location of the Sidi-Medjdoub station (indicated by a red dot on the right-hand map).

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professional fishing) of demersal gill nets was used. Three individuals of *Parastichopus regalis* were collected by small-scale fishers in February 2019 at a depth of 53 m (N 36°0.032, E 0°1.456, Fig. 1).

The individuals of *Parastichopus regalis* (Fig. 2) were identified on the basis of morphological, anatomical and endoskeletal criteria (the form of sclerites of the ventral and dorsal faces and tentacles). The preparation of sclerites was carried out according to the protocol of Samyn et al. (2006). Photographs were taken on the different types of ossicles using Optika View Lite software.

The three individuals of *P. regalis* were measured (relaxed total body length) and weighed (wet body weight with viscera and digestive system, which represents only a very small part of the total weight of the animal) (Mezali1998).

Results and discussion

The *Parastichopus regalis* individuals that were examined had a fairly depressed soft body with a sharp lateral fold bearing large papillae and separating the dorsal and ventral sides (Fig. 2A, B and C). The length of the three individuals was between 9 cm and 20 cm, with an average length of nearly 14.0 cm and a wet weight between 35.6 and 89.7 g, with an average weight of 59. 9 g. The anatomical examination revealed the presence of five pairs of longitudinal muscles (Fig. 2D). The defense organs (Cuvierian tubules) were absent. Observation of the dorsal (Fig.3A) and ventral (Fig.3B) integument revealed three types of ossicles: 1) tables (Fig. 3 A-a,c,d; B-e), perforated plates (Fig.3 A-b; B-f) and terminal plates (Fig. 3B). The tables observed corresponded to that of the genus *Stichopus* described by Clark (1922).

The ossicles of the ventral side differ from those of the dorsal side. The rods that exist only in tentacles (Fig. 3C) are elongated (Fig. 3C-h), arched (Fig. 3C-i), thorny, and some are branched and perforated (Fig.3 C-g).

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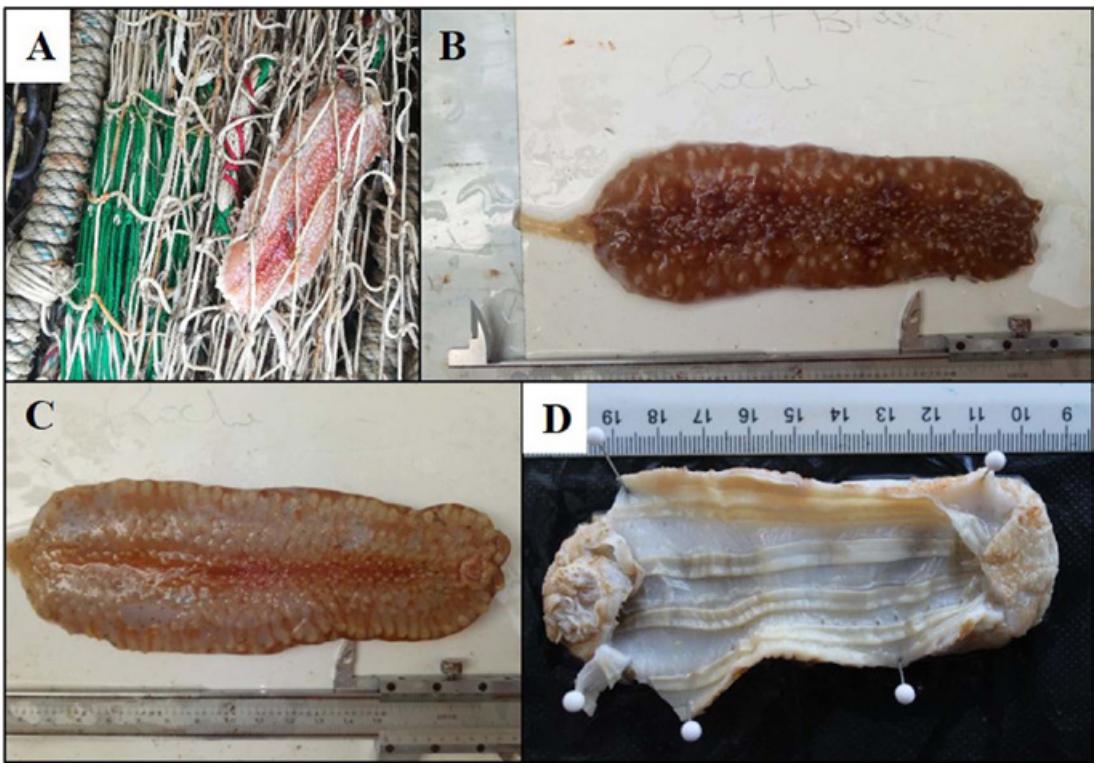

Figure 2. A: An individual of *Parastichopus regalis* caught in a net; B: Dorsal face of *P. regalis*; C: Ventral face of *P. regalis*, showing a ventral mouth; D: Anatomical section showing the various internal organs of *P. regalis*.

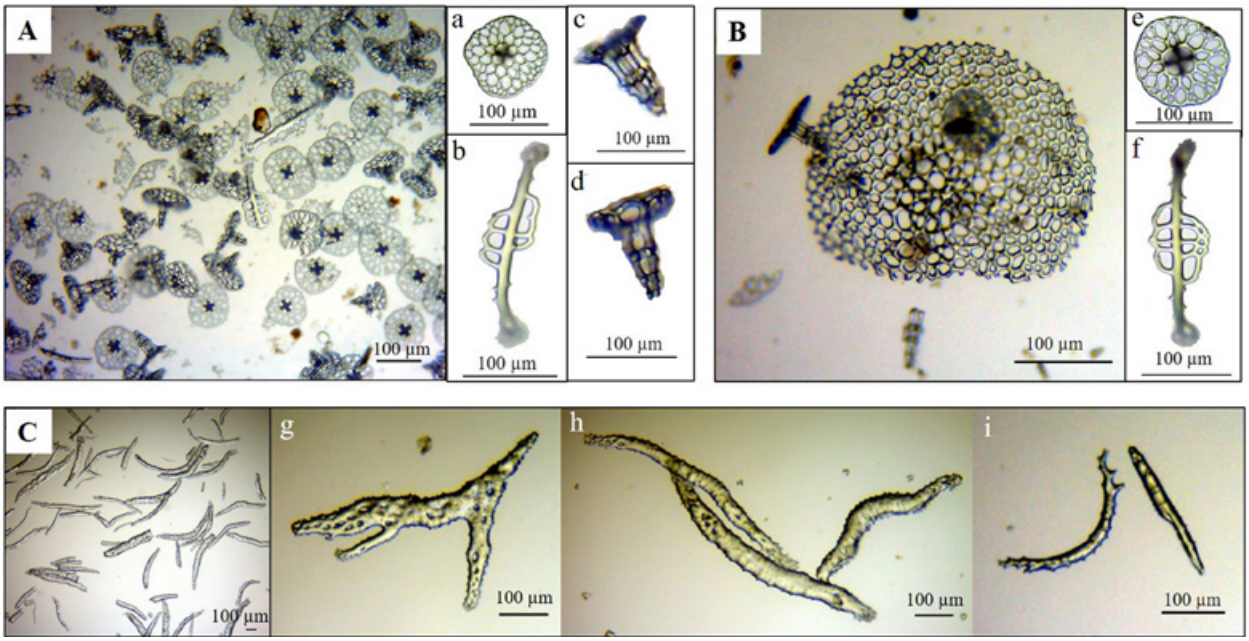

Figure 3. Endoskeletal characteristics of *Parastichopus regalis* individuals from the Sidi Medjdoub region (A: General view of sclerites of the dorsal integument – a: Top view of dorsal integument's table, b: perforated plates of dorsal integument, c,d: side view of dorsal integument's tables; B: General view of sclerites of the ventral integument, showing the perforated plate – e: Top view of ventral integument's table, f: perforated plates of ventral integument; C: Different rod shapes observed at the tentacles – g: branched and perforated rods, h: elongated rods, i: arched rods) (Magnification:C: X4; A,B,c,d,g,h,i: X10; a,b,e,f: X40).

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