

Occurrence of *Charybdis hellerii* (Milne Edwards, 1867) (Crustacea, Decapoda, Portunidae) in an Amazonian Estuary.

Ocorrência de *Charybdis hellerii* (Milne Edwards, 1867) (Crustacea, Decapoda, Portunidae) em um Estuário Amazônico.

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ABSTRACT: For the first time specimens of *Charybdis hellerii* (Milne Edwards 1867), an Indo Pacific specie, were caught in Amazon estuary, Bragança, Pará, North of Brazil.

1. Introduction

The crab *Charybdis hellerii*, common in the Indo-Pacific region, is naturally found in Japan, New Caledonia, Australia, Hawaii, the Philippines and in the Indian Ocean in general, including the Red Sea and Mediterranean Sea (SAKAI 1976). It occurs in various environments such as coral reefs, mangroves and rocky shores, but its geographical distribution has expanded due to anthropogenic reasons (FRIGOTTO and SERAFIM-JUNIOR 2007). In Brazil, this species has been found in the states of Bahia (CARQUEIJA and GOUVÊA 1996), Alagoas (CALADO 1996), São Paulo (NEGREIROS-FRANSOZO 1996), Rio de Janeiro (TAVARES and MENDONÇA 1996; MELO 2008), Santa Catarina (MANTELATTO and DIAS 1999), Rio Grande do Norte (FERREIRA et al. 2001), Pernambuco (COELHO and Santos 2003), Paraná (FRIGOTTO and SERAFIM-JUNIOR 2007), Maranhão (FERES et al. 2007), Piauí (LIMA JÚNIOR et al. 2008; LOEBMANN 2010) and Espírito Santo (MUSIELLO - FERNANDES et al. 2011), yet this species was not recorded in the coastal waters of the state of Pará.

The Portunid diversity described for the estuarine and coastal areas of the State of Pará, including the Caeté and Taperaçu estuaries, includes three known taxa, often described in

the literature - *Arenaeus cribarius* (Lamarck 1818) Diele et al. (2010), *Callinectes bocourti* (A. Milne Edwards 1879), *Callinectes danae* (Smith 1869) and *Callinectes ornatus* (Ordway 1863) (CINTRA et al. 2003; NEVIS et al. 2009). Thus, this paper reports the first occurrence of the exotic crab *Charybdis hellerii* in the Taperaçu estuary, Bragança-PARÁ, which is part of the *Reserva Extrativista Marinha Caeté-Taperaçu* (Caeté-Taperaçu Marine Reserve) whose crab fauna is still poorly known.

2. Material and methods

The Taperaçu estuary, which merges with the Atlantic Ocean in the northeastern region of the State of Pará, Amazon region, is located alongside the Caeté estuary between latitudes 00°50' S and 00°57' S and longitudes 46°42' W and 46°45' W.

Specimens were obtained from experimental collections with the use of four different mesh gill nets and a flat beach seine. Then, they were stored in coolers and carried to the Laboratório de Bioecologia Pesqueira of the Grupo de Pesquisa em Ecologia de Crustáceos da Amazônia for identification.

The carapace width - CW, the largest distance between the side edges of the carapace, not including the lateral spines, and the carapace length - CL, extending from the anterior portion of the rostrum between the

two rostral spines and the base of the telson, were measured with a precision caliper (0.01 mm) and the total weight was determined using a digital scale accurate to 0.01 g. The specimens were then sexed by observing the

shape of the abdomen (inverted 'T' for males and semi-oval or triangular in females).

3. Results

Two specimens (one male and one female) (Figure1), captured in the estuary with a 50 mesh gill net, were examined (Table 1).



Figure 1. Specimens captured in the estuary Taperaçu. (A) Dorsal view of *Charybdis hellerii*-1-female, male 2a, (B) Ventral view of *Charybdis hellerii* -1b female, 2b - male.

Table 1. Number of individuals, sex, carapace width (CW mm), carapace length (CL mm) total mass (M-g), collection name and deposit number of the *Charybdis hellerii* specimens captured in the Taperaçu Estuary (Bragança - PARÁ).

Number of Individuals	Sex	CW (mm)	Capture Depth (m)	CL (mm)	M (g)	Collection name and deposit number
1	M	330	2.5m at low tide and 4m at high tide	212	6.59	CEPNOR IBAMA - 20.4.1.
1	F	387		259	8.78	Voucher specimens were deposited in the Crustacean Collection of Department of Biology (CCDB) of Faculty of Philosophy, Sciences and Letters of Ribeirão Preto (FFCLRP) - University of São Paulo (USP), under number access CCDB 3858

Diagnosis: According to Coelho and Santos (2003); Frigotto and Serafim-Junior (2007); Silva (2009) and Musiello - Fernandes et al. (2011). Dorsal region of the carapace without hairs, having six teeth on anterolateral margin (with external orbitals). Front with six teeth, two median and four external orbitals. Palm with six strong spines on dorsal surface. Carpus and merus of each swimming leg with sturdy thorn; propodus with a row of spinules on posterior margin.

Coloration: Mostly dark, with reddish tones in the extremities and greenish towards the center.

4. Discussion

The introduction of species may occur intentionally or accidentally, but is almost always linked to human activities. The bioinvasion is an event that increases at a rapid pace and many factors, such as maritime and inland waterway transportation, which contributes to the occurrence of exotic species in different regions of the world (FRIGOTTO and SERAFIM-JUNIOR 2007).

The arrival of *C. hellerii* to the Brazilian coast possibly occurred during the years 1993/1994, in its larval stage (MANTELATTO and DIAS 1999). The larvae would be transported to points far from their original habitat inside ballast water or even through transportation on the ship hulls (COELHO and SANTOS, 2003), coming from the Caribbean by means of the Brazil Current (TAVARES and MENDONÇA 2004).

In Pará, the introduction of this species has probably been favored by the passage of Asian and European ships, common in the deeper coastal areas of the State. According to Feres (2007), biological features of *C. hellerii* may favor its colonization of new areas. In fact, early sexual maturity and the exclusive carnivorous diet can also cause changes in the trophic chain. In the coastal waters of Pará, the invasion of *C. hellerii* deserves to be treated with caution in view of the diversity of crustacean species, including decapods, which contribute a significant portion of the fish

volume produced (BENTES et al. 2011). Frigotto-Junior and Serafim (2007) argue that the pressure exerted by *C. hellerii* as a competitor, can cause serious damage to native species, especially in habitats such as mangroves. Another problem with the entry of this species is that it can be a potential host of the White Spot Syndrome Virus (WSSV) which can cause damage to the rearing of penaeids (SILVA 2009).

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