NOTES AND NEWS

FIRST RECORDS OF *CARDISOMA GUANHUMI* (DECAPODA, BRACHYURA, GECARCINIDAE) FROM THE COAST OF BRAZILIAN AMAZONIA

BY

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In recent years, new geographical records of marine decapods have been profusely reported from the northern coast of Brazil (Barros & Silva, 1997; Silva et al., 1998a, b; Silva, 1999; Barros & Pimentel, 2001; Silva et al., 2001; Silva et al., 2002; Silva & Almeida, 2002; Cintra et al., 2003; Ramos-Porto et al., 2003; Viana et al., 2003). These are the result of an increasing number of surveys and have, in turn, amplified the sampling effort and the diversity of collecting sites aiming at a better understanding of the composition, diversity, and distribution of this group. Góes et al. (1998) have observed that the expansion of the geographic distribution of marine invertebrates may be related to a variety of larval dispersal mechanisms, such as ocean currents, winds, and tides. Studies of these factors may provide valuable insights into the distribution of brachyuran crabs, especially by identifying new areas that may be occupied by these animals. It should be borne in mind, that studies which present new distribution records are useful not only for updating distribution maps, but also for the analysis of biogeographic problems and the procurement of more reliable information for the conservation of species (Goés & Fernandes-Goés, 2007).

The brackish-water land crab, *Cardisoma guanhumi* (Latreille, 1825) is a semi-terrestrial species with nocturnal and gregarious behaviour. It is found principally

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in mangroves, where it constructs open-ended tunnel systems that are flooded with seawater (Melo, 1996). The species is economically important in the Brazilian northeast, where it is sold in large numbers on fish markets. *Cardisoma guanhumi* has a wide distribution, ranging from Florida and the Bermudas, through the Gulf of Mexico and the Caribbean, to Brazil (fig. 1). In Brazil, records confirm the occurrence of the species between the northeastern state of Ceará (3°45′47″S 38°31′23″W), and Santa Catarina in the south, at 27°35′36″S 48°35′56″W (Melo, 1996; Botelho et al., 2001; Duarte et al., 2008). There is thus a considerable lacuna in the known distribution of *C. guanhumi*, encompassing the Guyanas and northern

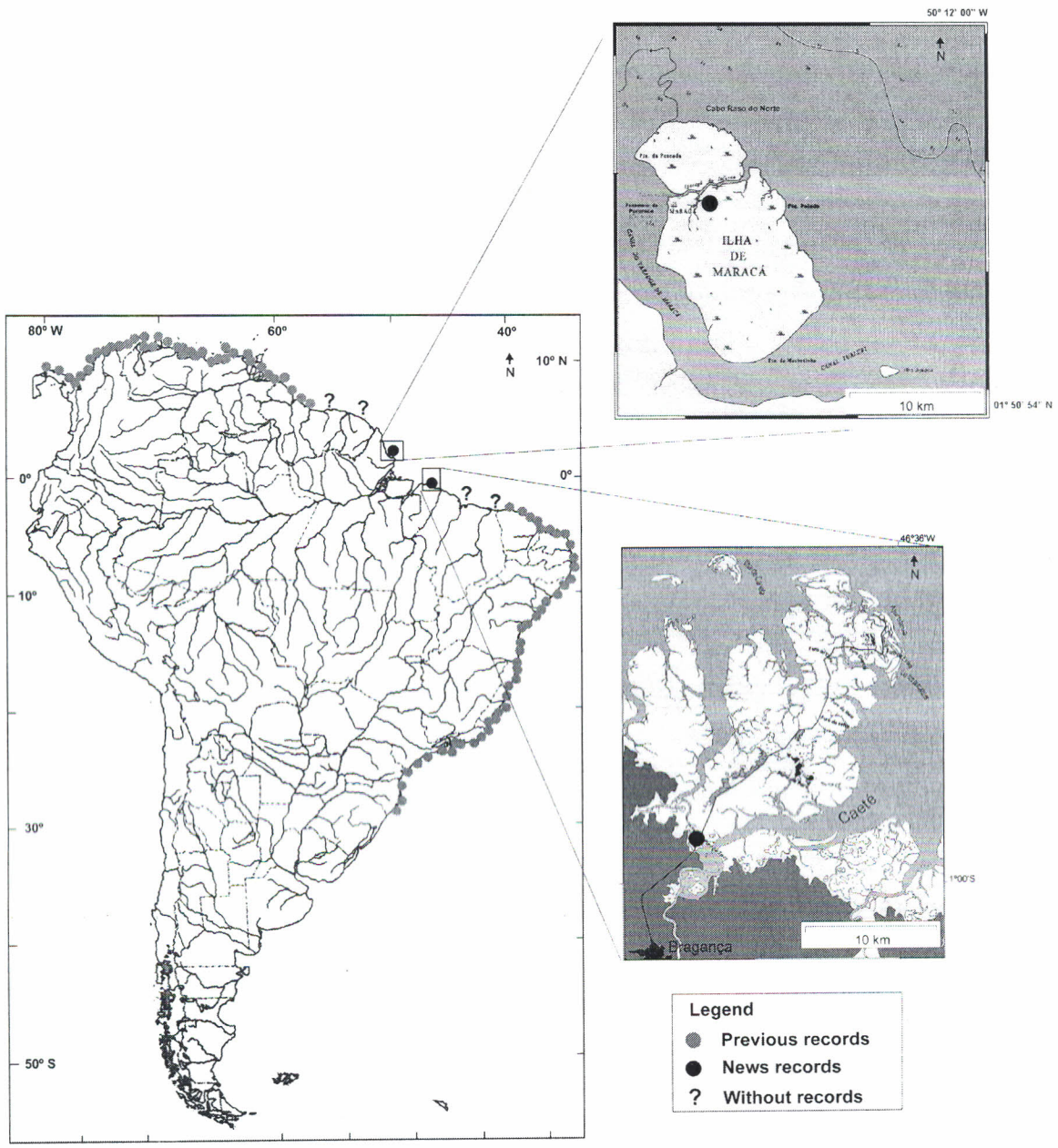

Fig. 1. Known geographical distribution of *Cardisoma guanhumi* (Latreille, 1825) in South America.

Brazil (fig. 1). The present study addresses this observation by presenting new information on the occurrence of the species in the Brazilian Amazon region, which considerably reduces the observed lacuna.

In February 1996, an adult male *C. guanhumi* (body width (BW) = 99.25 mm, body length (BL) = 76.85 mm) was collected on Maracá Island (01°50′54″N 50°12′00″W) at the Maracá-Jipióca Ecological Station, municipality of Amapá, in the northern Brazilian state of Amapá. The specimen was collected during the day at the margin of a small channel in an area of mangrove forest. It was labelled and fixed in 70% ethanol, and deposited in the crustacean collection of the Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá – IEPA (IEPA) in the state's capital, Macapá, with catalog number IEPA 00074 (fig. 2). More than a decade later, in December, 2006, a second, moulting adult male (BW = 85.30 mm, BL = 66.35 mm) was collected in the estuary of the Caeté River, also in an area of mangrove forest, near the city of Bragança, state of Pará (0°58′10″S 46°44′15″W). The specimen was preserved in 70% ethanol before being deposited in the invertebrate collection of the Goeldi Museum in Belém, under specimen number MPEG 00803. Specimens were examined using a stereoscopic microscope equipped with a drawing tube, and taxonomic identification of the specimens was based on the morphological characteristics described by Melo (1996).

Few *C. guanhumi* burrows were observed at either Maracá Island or the Caeté River, indicating a low population density of the species at both sites, which almost

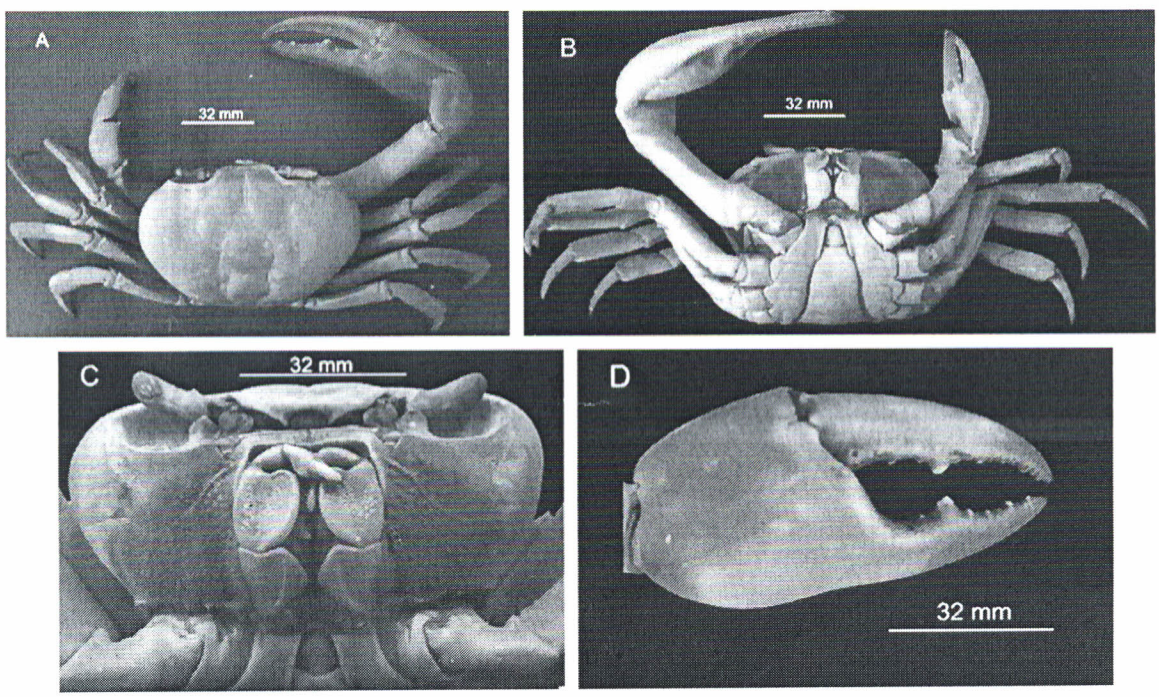

Fig. 2. Specimen of *Cardisoma guanhumi* (Latreille, 1825) from Maracá Island, Ecological Station of Maracá-Jipióca, Amapá, Brazil. A, dorsal view; B, ventral view; C, front view; D, major chela.

certainly limits its capture by local fishermen. There are in fact no records of the species being sold in markets anywhere along the northern coast of Brazil. This contrasts considerably with the intense exploitation of the mangrove crab, *Ucides cordatus* (Linnaeus, 1763) in both Pará and Amapá. It seems likely that the local abundance of *U. cordatus* makes the commercial exploitation of other crab species less worthwhile. According to Wolff et al. (2000), the mangrove crab is one of the primary resources of the mangrove ecosystems of the Caeté, from which as much as 1500 t of *U. cordatus* may be extracted annually. In fact, more than 40% of the local human population on the river banks depends on this species as their principal source of subsistence and income.

There is good evidence, however, that Amazonian populations of *C. guanhumi* were much more abundant in the past, according to the testimonies of older local residents, who confirm the exploitation of the species for subsistence and small-scale trading in the first half of the twentieth century. The replacement of *C. guanhumi* as a fishery resource by a second commercial species (*U. cordatus*) may have been a key factor for the maintenance of its genetic stock in natura, and the preservation of the species throughout its distribution range along the Brazilian coast. Given the existence of records of *C. guanhumi* between Ceará and Santa Catarina, and those from the present study, it seems reasonable to assume that the species is found all along the Brazilian coast, north of the southern limit of Santa Catarina, a distribution equivalent to that of *U. cordatus*. However, corroboration of this assumption will depend on the confirmation of the presence of *C. guanhumi* in the intervening states of Maranhão and Piauí. Records from this region may depend on a specific sampling initiative.

Ultimately, new records of marine invertebrates, whether of new species or involving extensions of the geographic distribution of known forms, are of fundamental importance for scientific investigations of the dynamics both of populations and communities, among other things, for a better understanding of the mechanisms of migration and larval recruitment (Wolff, 1954; Góes et al., 1998). In this respect, precise knowledge of the geographic distribution of species of Crustacea constitute a valuable tool in the development of strategies for the conservation of this taxonomic group, which plays such an important role along the Brazilian coast, both in ecological and in economic terms.

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