

Report of the lobster *Palinustus truncatus* A. Milne-Edwards, 1880 (Decapoda, Achelata) in the Great Amazon Reef System, Brazil

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ABSTRACT

The lobster *Palinustus truncatus* A. Milne-Edwards, 1880, Palinuridae Latreille, 1802, is rarely reported in commercial fisheries in northern Brazilian coast. Two specimens were caught in the area known as Great Amazon Reef System. The specimen was deposited in the carcinological collection.

Keywords: Artisanal fishing; biodiversity; brazilian North coast; bycatch.

Ocorrência da lagosta *Palinustus truncatus* A. Milne-Edwards, 1880 (Decapoda, Achelata) no Grande Sistema de Recifes do Amazonas, Brasil

RESUMO

A lagosta *Palinustus truncatus* A. Milne-Edwards, 1880, Palinuridae Latreille, 1802, é raramente relatada na pesca comercial da lagosta na costa Norte do Brasil. Dois exemplares foram coletados na área conhecida como Grande Sistema de Recifes do Amazonas. O exemplar foi depositado em coleção carcinológica.

Palavras-chave: Biodiversidade, costa Norte, fauna acompanhante, pesca artesanal.

Introduction

The lobsters are a diverse group of crustaceans, which vary not only in body size, but also in their geographic distribution and habitat preferences (SILVA et al., 2013). The lobsters are in the infraorder Achelata Scholtz & Richter, 1995, which comprises 140 marine species in two families: 1) Palinuridae Latreille, 1802, with 55 species, and 2) Scyllaridae Latreille, 1825, with 85 species (DE GRAVE et al., 2009).

The family Palinuridae comprises 12 genera, which includes *Palinustus* A. Milne-Edwards, 1880, with the species *P. holthuisi* Chan & Yu, 1995 (found from Japan to Taiwan), *P. mossambicus* Barnard, 1926, (found on eastern Africa coast), *P. truncatus* A. Milne-Edwards, 1880, (Gulf of Mexico, Caribe and northern coast of South America), *P. unicornutus* Berry, 1979 and *P. waguensis* Kubo, 1963, (western Indo-Pacific) (CHAN; YU, 1995). Chan and Yu (1995) report that *Palinustus* lobsters have distinct coloration as a diagnostic character.

Knowledge about species diversity has improved on last decades, due to description of different new species (CHAN, 2010). In northern Brazilian coast, seven lobster species were reported: *Nephropsis aculeata* Smith, 1881, *N. rosea* Spence Bate, 1888, *P. meripurpuratus* Girdaltes & Smyth, 2016, *Parribacus antarcticus* (Lund, 1793), *Polycheles typhlops* Heller, 1862, *Scyllarides delfosii* Holthuis, 1960, *Stereomastis sculpta* (Smith, 1880) (SILVA et al., 2013; SANTOS et al., 2019).

There is a lack of information about capture, distribution, population and reproductive biology of *P. truncatus* (SANTANA et al., 2016). The only anterior occurrence report for this specie in Pará was based in a specimen found in the stomach content of a fish from the genus *Lutjanus* Bloch, 1790 (FAUSTO-FILHO, 1977).

The current register of *P. truncatus* in the Great Amazon Reef System (GARS) confirms this species presence in the State of Pará and improves the knowledge about its distribution at the northern Brazilian coast.

Methods

Specimens described here were observed and collected by a fisheries observer from National Marine Center of Research and

Biodiversity Conservation on Brazil North Shelf (Centro Nacional de Pesquisa e Conservação da Biodiversidade Marinha do Norte – CEPNOR) in lobster commercial fishery at the Amazon continental shelf (Fig. 1), under Sisbio License 44915-3.

Moura et al. (2016) described and mapped an extensive reef system at the Amazon River mouth. The Great Amazon Reef System (GARS) is a complex environment with consolidated bottom composed by living organisms, firstly described by Collette and Ruetzler (1977). Moura et al. (2016) found an extensive carbonate reef system of approximately 9.500 km², a typical mesophotic reef, between 70 and 220 meters depth, mostly composed by crustose calcareous algae, sponges and scleractinian corals.

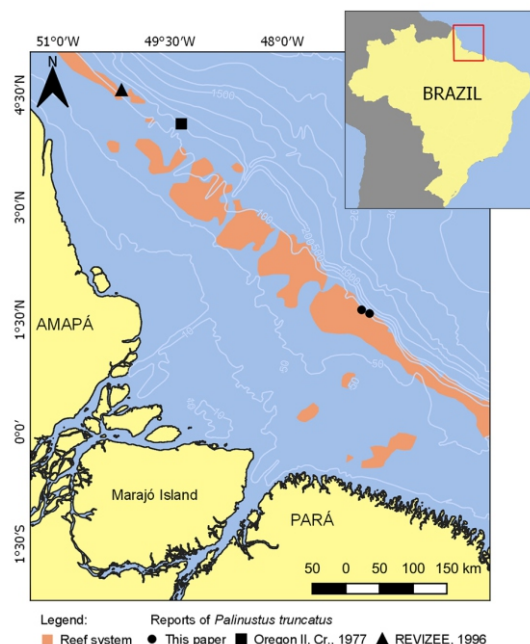


Figure 1. Occurrence of *P. truncatus* in this study and former records in Brazil at the Great Amazon Reef System mapped by Moura et al. (2016).

The lobster occurrence locations were added to a geographical information system, which includes other occurrences registered for the specie in the area, bathymetry, and the reef system at the Amazon River mouth, as described by Moura et al. (2016).

Only one specimen was stored in refrigeration chamber; then preserved in 70% ethanol and deposited in the carcinological collection of the Crustacean Laboratory (UFRA and CEPNOR/ICMBio) with registration number 42.2.1 A. For morphometric measurements, we took total length (TL - the distance between the rostrum and the posterior edge of the telson), cephalothorax length (CL - the distance between the rostrum and the posterior edge of the cephalothorax) and total weight (WT).

Results

Family Palinuridae Latreille, 1802
Palinustus A. Milne-Edwards, 1880
Palinustus truncatus A. Milne-Edwards, 1880

Palinurus truncatus: Gruvel, 1911: 18; Bouvier, 1925: 441.

Palinustus truncatus. Milne-Edwards, 1880: 66, 67; Holthuis, 1946: 121; Coelho, 1967/1969: 231; Fausto-Filho, 1977: 75; Fischer, 1978; Berry, 1979: 93; Rodriguez, 1980: 203; Coelho and Ramos-Porto, 1983/1985: 63; 1991: 125; 1998: 390; Takeda, 1983: 81; Chan and Yu, 1995: 376, 377, 378, 379, 380, 381, 390, 391, 392; Melo, 1999: 432; Silva et al., 2002: 103; Silva et al., 2003: 29, 30; Tavares, 2003: 316; Coelho et al., 2007: 7; Dall'Occo et al., 2007: 47; Santana et al., 2016: 269, 270, 272, 273, 275.

Material examined. 1 male, TL 101 mm, CL 40.8 mm, WT 34,8 g; Brazil, lobster fishing zone, Pará State, 01°37'51" N 046°56'26" W; depth 93 m; 28 Oct. 2019; gillnet; substrate sand, rocks and corals; - 1 female, TL 118,0 mm; Brazil, lobster fishing zone in Pará State, 01°34'55 N 046°50'02 W; depth 121 m; 1 Nov. 2019; gillnet; substrate sand, rocks and corals (Fig. 2).



Figure 2. *Palinustus truncatus* A. Milne Edwards, 1880, in Pará State, Brazil (female).

Diagnosis. Carapace with spines anteriorly, scaly appressed posteriorly, and short hairs entirely; spines more or less disposed in some longitudinal rows in front of cervical groove; supraorbital tooth distinctly truncated and cut into some minute teeth anteriorly; anterior margin of carapace between both supraorbital teeth with a median and some submedian spinules. Antennule about half as long as antenna, its flagellum being markedly short. Each abdominal segment with a transverse groove which is interrupted medially. Ambulatory legs markedly hairy, with rows of spines on both borders of meri and anterior borders of carpi; in last pair a peculiar chela formed by protuberances of posterior distal end of propodus and proximal part of dactylus (TAKEDA, 1983).

Distribution. *P. truncatus* is restricted to western Atlantic (TAKEDA, 1983; MELO, 1999; CHAN; YU, 1995) Antilles, Venezuela, Suriname and Brazil (HOLTHUIS, 1991). In Brazil, it is reported at Amapá coast (CHAN; YU, 1995; SILVA et al., 2003). Depth of occurrence between 100 and 1000 m (SANTANA et al., 2016), on mud, sand and corals substrates, but there are reports in depths up to 4.000 m (HOLTHUIS, 1991).

Former Reports in Brazil. Chan and Yu, 1995 (Scientific Survey Oregon II), Station 23214, west of Amazon delta, 04°34'N, 50°09'W, otter trawl, depth 121 m, 21 November 1977, 3 males, TL 30.6 to 33.3 mm, 1 ovigerous female, TL 30.5 mm [RMNH D-35845]; Station 23215, between Amazon delta and Cape Orange, otter trawl, depth 70 to 77 m, 1 November 1977, ovigerous female, TL 28.7 mm, 1 female TL 29 mm [RMNH D-35838]; Fausto-Filho (1977) - 1 male found in the stomach content of a *Lutjanus* fish captured at continental shelf, Pará State, July 1978; Silva et al. (2003) - Amapá (04°07'N, 049°21'W), 2 female, depth 330 m, 6 October 1996.

Discussion

The lobster fishing area in the Amazon continental shelf extends from Pará to Amapá states, between 60 and 100 m depth (PORTO et al., 2005); this area overlaps with the GARS. The lack of knowledge about biodiversity in the GARS implies the inability to develop measures for the protection and management of ecosystems and natural resources intensively exploited by industrial fishing. Although GARS biodiversity and population dynamics are not largely known, fisheries in this area are responsible for high catches, economically relevant for the State of Pará.

The report of *P. truncatus* in lobster fishery represents an important contribution to the knowledge of the GARS area. It is important to consider that learning about biodiversity is fundamental for decreasing the risks caused by commercial activities, as fishing and petroleum exploration, in sensitive areas.

Conclusion

We confirmed the presence of *P. truncatus* in the State of Pará, at the GARS, it extends the occurrence area for this specie in Brazil.

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