

# First record of *Trachycaris restricta* (A. Milne-Edwards, 1878) (Crustacea, Hippolytidae) from the State of Sergipe, northeast Brazil: Filling distribution gaps

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**ABSTRACT:** This paper presents the first record of *Trachycaris restricta* (A. Milne-Edwards, 1878) from the State of Sergipe, filling a gap of occurrence of this species in the Brazilian northeast coast and compiles previous reports of this species from Brazil. The analyzed specimens were associated with algae and captured through daytime fishery hauls in two sampling stations at 30 m depth in March 2000.

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The family Hippolytidae Dana, 1852 is composed of 22 genera, in which the genus *Trachycaris* Calman, 1906 comprises only two species, *Trachycaris rugosa* (Bate, 1888) and *T. restricta* (A. Milne-Edwards, 1878). The first species occurs in the Western Atlantic and the second species in the Eastern Atlantic. Several studies have indicated the occurrence of *T. restricta* in the Brazilian coast (Ortmann 1893; Coelho and Araújo Ramos 1972; Coelho *et al.* 1978, 1980; Christoffersen 1979; Fausto Filho 1980; Ramos-Porto 1980; Ramos-Porto and Coelho 1991/93; Cardoso 2006) from the states of Amapá to Espírito Santo and apparently along the whole northeast coast of Brazil. However, although Coelho *et al.* (1978) stated that *T. restricta* is a “continuous tropical” species presenting a continuous distribution from the Antilles to the northeast of Brazil (including Espírito Santo State), no publication mentions the capture of this species in the state of Sergipe. The specimens analyzed herein were collected in a coastal oceanographic campaign that monitored the impact of oil platforms off the coast of Sergipe and are deposited in the Zoological Collection, Benthos Coastal Laboratory, Sergipe Federal University (voucher numbers UFS-CRU 0012 and UFS-CRU 0013). The specimens were captured during daytime in March 2000 (dry season), in bottom trawls of 15 minutes at two sampling stations on the continental shelf at 30 m depth (Figure 1). In Sergipe, the continental shelf’s bottom sediments are influenced by the presence of the São Francisco River to the north and also by four other estuarine complexes, besides two submarine canyons (São Francisco and Japarutuba) that are situated less than 12 km away from the coastline. Although the coast of Sergipe presents characteristics that suggest a muddy platform, it possesses a sedimentary mosaic with predominance of terrigenous muds at the coastal region and sands, gravels and carbonate muds toward

offshore. The presence of macroalgae and carbonate bottoms in two small regions allowed the formation of a favorable habitat to *T. restricta*.

Seven specimens of *T. restricta* were found associated with macroalgae in an environment with gravelly sedimentary facies and large biomass of algae, corroborating the general information in the literature regarding its habitat. The specimens were identified according to Houthuis (1949) and Cardoso (2006). *Trachycaris restricta* occurs at depths ranging from 18 to 100 m in sandy, muddy, rocky, coral and coralline algae bottoms (Ortmann 1893; Coelho and Araújo Ramos 1972; Coelho *et al.* 1978; Christoffersen 1979; Fausto Filho 1980; Ramos-Porto 1980; Cardoso 2006). Table 1 presents works mentioning the occurrence of *T. restricta* in the Brazilian coast with records based on samplings.

According to Cardoso (2006), in 1949 Holthuis compared specimens of *T. rugosa* from the Canary Islands with specimens of *Hyppolyte restrictus* from Curacao (Antilles) and concluded that both species were actually only one, naming it *Trachycaris restricta*. However, Criales (1992) analyzed 19 mature females from the Western Atlantic and concluded that all of them, except for one specimen, possessed similar features to the description for *T. rugosa*. Thus, Criales (1992) concluded that the two species are valid, with *T. restricta* (Figure 2A) having as its main distinguishing features: presence of mandibular palp (Figure 2B); 3 spines on basal antennal peduncle (Figure 2C) and first maxilliped with unsegmented palp (Figure 2D), corroborating with the species in this paper. *Trachycaris rugosa* has no record for the Brazilian coast.

Order Decapoda Latreille, 1802  
Infraorder Caridea Dana, 1852  
Superfamily Alpheoidea Rafinesque, 1815

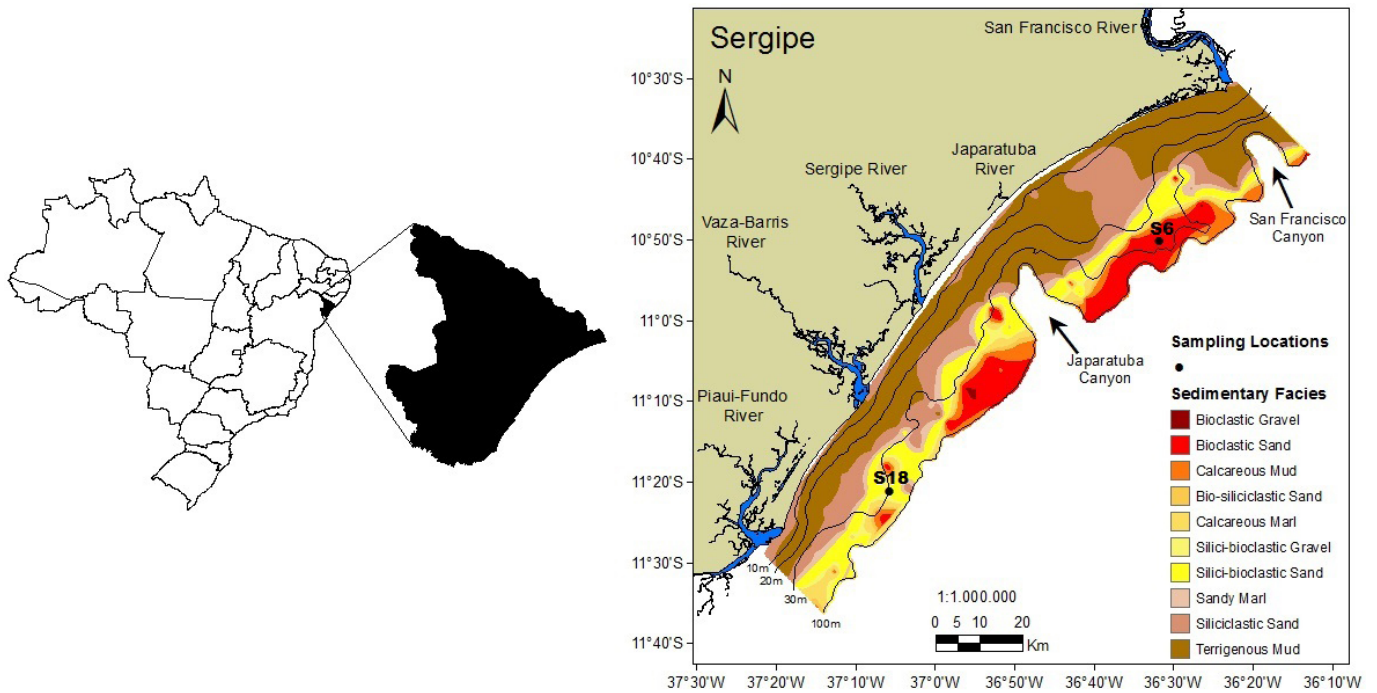


FIGURE 1. Map of the state of Sergipe, indicating the samplings locations (S6 and S18).

Family Hippolytidae Spence Bate, 1888

Genus *Trachycaris* Calman, 1906

*Trachycaris restricta* A. Milne-Edwards, 1878

Diagnosis: Carapace tuberculate, with teeth and tufts of setae; rostrum laterally flattened, as long as high, dorsal margin with 8-13 teeth, distal margin with 3-6 small teeth, lower margin with 3 broad teeth, dorsal carina with 5-7 teeth; antennal spine strong and acute, 2-3 small teeth on anterolateral angle. Stylocerite broad ending in 2 processes, proximal one acute and distal rounded, with strong teeth. Scaphocerite with small distal tooth, not overreaching blade.

Material examined: 3 males (carapace length 1.80-2.50 mm) and 1 ovigerous female (carapace length 4.07 mm), 11°21'07" S, 37°05'50" W, station 18, 30 m (UFS\_CRU\_0012). Water temperature: 26°C; salinity: 34.1‰; bottom sediment: coarse sand and gravel; organic matter content: 9.0%; calcium carbonate content: 35.8%.

3 ovigerous females (carapace length 4.07-4.13 mm), 10°49'47" S, 36°32'10" W, station 6, 30 m (UFS\_CRU\_0013).

Water temperature: 26°C; salinity: 34.7‰; bottom sediment: coarse sand and gravel; organic matter content: 5.2%; calcium carbonate content: 38.9%.

This is the first record of *T. restricta* for the state of Sergipe, confirming the northeast coastal distribution of *T. restricta*, as well as its association with carbonate environments and macroalgae.

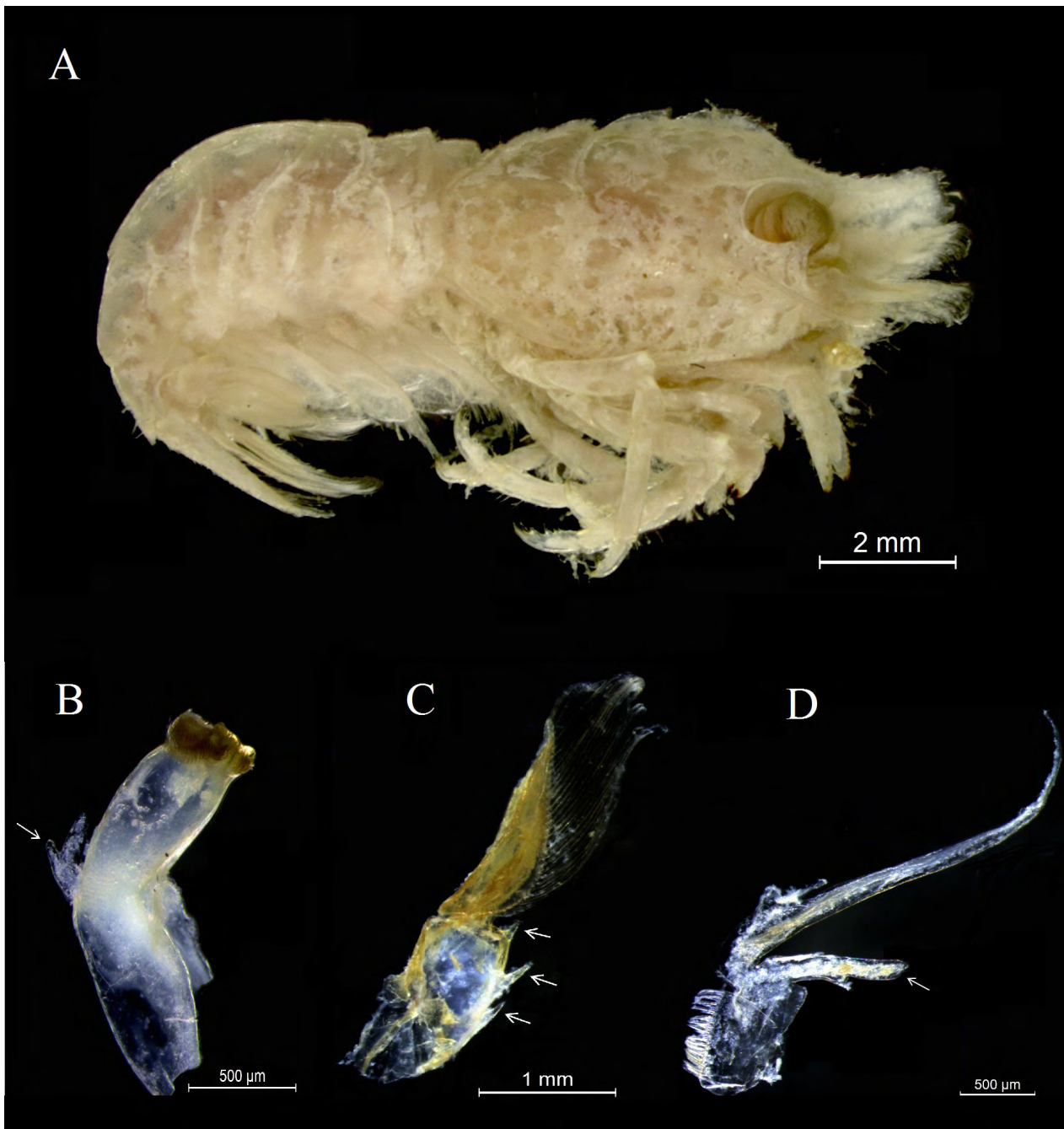
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#### LITERATURE CITED

- Cardoso, I. 2006. Caridea (Crustacea, Decapoda) collected on the Brazilian (13°/22°S) continental shelf and slope. *Zootaxa* 1364: 1-44.
- Christoffersen, M.L. 1979. Decapod Crustacea: Alpheoidea. Campagne de la Calypso au large des côtes atlantiques de l'Amérique du Sud (1961-1962). I. Resultats scientifiques des Campagnes de la Calypso. *Annales de l'Institut Océanographique Monaco*, Supplement 55: 297-377.
- Coelho, P.A., M. Araújo Ramos. 1972. A constituição e a distribuição da fauna de decápodos do litoral leste da América do Sul entre as latitudes 5° N e 39° S. *Trabalhos Oceanográficos da Universidade*

TABLE 1. Occurrences of *Trachycaris restricta* (A. Milne-Edwards, 1878) at the Brazilian coast. (AP) – Amapá. (PA) – Pará. (CE) – Ceará. (PB) – Paraíba. (PE) – Pernambuco. (BA) – Bahia. (SE) – Sergipe. (ES) – Espírito Santo.

CITATIONS FROM BRAZIL	STATES	GEOGRAFIC COORDINATES	DEPTH (m)	BOTTOM
Ortmann 1893	PA	—	50-100	—
Coelho and Araújo Ramos 1972	Ocean bank (CE), CE, PB, PE, BA, ES	—	47-68	calcareous algae
Christoffersen 1979	BA	12°56.4' S, 38°33.5' W 16°46' S, 38°53' W 18°09' S, 38°20' W 18°09' S, 38°30' W	18 27 33 50	sand, calcareous algae, mud, rock, coral
Fausto Filho 1980	CE, PB, PE	—	47-68	gravelly
Ramos-Porto 1980	PE	7°40' S, 34°28'7" W	60-68	calcareous algae
Ramos-Porto and Coelho 1991/93	AP, CE, PB, PE, BA, ES	—	47-99	calcareous algae
Cardoso 2006	BA	16°47'13" S, 38°41'48" W	50	—
Present study	SE	11°21'07" S, 37°05'50" W 10°49'47" S, 36°32'10" W	30	gravelly



**FIGURE 2.** *Trachycaris restricta* (A. Milne-Edwards, 1878); CRU\_0013, female, carapace length 4,09 mm. (A) lateral view; (B) mandible, arrow—mandibular palp; (C) antenna, arrows—spines on basal antennal peduncle; (D) first maxilliped, arrow—unsegmented palp.

- Federal de Pernambuco* 13: 133–236 ([http://www.revista.ufpe.br/tropicaloceanography/volumes/volume\\_13\\_1972.html](http://www.revista.ufpe.br/tropicaloceanography/volumes/volume_13_1972.html)).
- Coelho, P.A., M. Ramos-Porto, M.L. Koenig. 1978. Crustáceos marinhos do Brasil, do Uruguai e da Argentina (ao norte de Mar del Plata): considerações biogeográficas. *Anais da Universidade Federal Rural de Pernambuco* 2/3: 227–256.
- Coelho, P.A., M. Ramos-Porto, M.L. Koenig. 1980. Biogeografia e bionomia dos crustáceos do litoral equatorial brasileiro. *Trabalhos Oceanográficos da Universidade Federal de Pernambuco* 15: 7–138 ([http://www.revista.ufpe.br/tropicaloceanography/volumes/volume\\_15\\_1980.html](http://www.revista.ufpe.br/tropicaloceanography/volumes/volume_15_1980.html)).
- Criales, M.M. 1992. Redescription of the hippolytid shrimp *Trachycaris rugosa* (Bate) (Crustacea: Decapoda: Caridea) from the Western Atlantic, with notes on sexual dimorphism. *Proceedings of the Biological Society of Washington* 105: 562–570 (<http://biodiversitylibrary.org/page/35607741>).
- Fausto Filho, J. 1980. Crustáceos estomatopodos e decápodos dos substratos de cascalho do nordeste brasileiro. *Arquivos de Ciências do Mar* 20(1): 101–124.
- Holthuis, L.B. 1949. The caridean Crustacea of the Canary Islands. *Zoologische Mededelingen* 30(15): 227–255.
- Ortmann, A. 1893. Decapoden und Schizopoden der Plankton Expedition. *Ergebnisse der Plankton-Expedition 2* (Gb): 1–120, pls. 1–10.
- Ramos-Porto, M. 1980. Estudo ecológico da região de Itamaracá, Pernambuco, Brasil. VII Crustaceos Decapodos Natantes. *Trabalhos Oceanográficos da Universidade Federal de Pernambuco* 15: 277–310 ([http://www.revista.ufpe.br/tropicaloceanography/volumes/volume\\_15\\_1980.html](http://www.revista.ufpe.br/tropicaloceanography/volumes/volume_15_1980.html)).
- Ramos-Porto, M., P.A. Coelho. 1991/93. Sinopse dos crustáceos decápodos brasileiros (Família Hippolytidae). *Trabalhos Oceanográficos da Universidade Federal de Pernambuco* 22: 181–189 ([http://www.revista.ufpe.br/tropicaloceanography/volumes/volume\\_22\\_1991\\_1993.html](http://www.revista.ufpe.br/tropicaloceanography/volumes/volume_22_1991_1993.html)).

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