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NEW AND ADDITIONAL RECORDS OF THE SPONGE SHRIMP GENUS *TYPTON* COSTA, 1844 (DECAPODA: PALAEMONIDAE) FROM THE BRAZILIAN COAST

PAULO P.G. PACHELLE^{1,2}

ARTHUR ANKER^{1,3}

MARCOS TAVARES^{1,4}

ABSTRACT

The present study deals with Brazilian material of four sponge-dwelling species of the pontoniine shrimp genus Typton Costa, 1844: T. distinctus Chace, 1972, T. fapespae Almeida, Anker & Mantelatto, 2014, T. prionurus Holthuis, 1951, and T. vulcanus Holthuis, 1951. Typton distinctus and T. fapespae are recorded for the first time from Rio de Janeiro, representing a significant southward range extension for the former species (previously known only from Pernambuco) and a slight northward extension for the latter species (previously known only from São Paulo). Typton prionurus and T. vulcanus are recorded for the first time from Bahia. The former species was previously known from Brazil based on a single questionable record from the coast of Pará, whereas the latter species is recorded from Brazil and the southwestern Atlantic for the first time. Illustrations are provided for T. prionurus and T. vulcanus.

KEY-WORDS: Palaemonidae; Sponge-dwelling shrimp; *Typton*; Brazil; Western Atlantic; New records.

INTRODUCTION

The pontoniine genus *Typton* Costa, 1844 includes small marine shrimps (usually less than 10 mm total length) that appear to be almost exclusively associated with demosponges (Holthuis, 1951). These shrimps dwell deep in sponge canals and at least some species are known to be parasites, occasionally feeding on the tissues of their sponge hosts (Duris *et al.*, 2011).

Members of the genus *Typton* can be recognised by a combination of several morphological features, the most important being the non-toothed and later-

ally compressed rostrum, extremely reduced antennal scale, carapace bearing only antennal spine, mandible without palp, maxillipeds with exopods, second chelipeds highly asymmetrical, third to fifth pereopods robust and with biunguiculate dactyli, and male second pleopod without appendix masculina (Holthuis, 1951; Vieira *et al.*, 2012).

In the Atlantic Ocean, *Typton* is represented by 10 species, most of them found in shallow tropical and subtropical waters of the western Atlantic. Six species of *Typton* have been reported from Brazilian waters: *T. carneus* Holthuis, 1951, *T. distinctus* Chace, 1972, *T. fapespae* Almeida, Anker & Mantelatto,

¹ Museu de Zoologia, Universidade de São Paulo. Caixa Postal 42.494, 04218-970, São Paulo, SP, Brasil.

² E-mail: paulopachelle@gmail.com

³ E-mail: arthuranker7@gmail.com

⁴ E-mail: mdst@usp.br

2014, *T. gnathophylloides* Holthuis, 1951, *T. prionurus* Holthuis, 1951 and *T. tortugae* McClendon, 1911 (Ramos-Porto & Coelho, 1998; Coelho *et al.*, 2006; Vieira *et al.*, 2012; Almeida *et al.*, 2014; Soledade *et al.*, 2015). However, the Brazilian record of *T. prionurus* was based on a single table listing with

uncertain identification (as “*T. prionurus* Holthuis?”) in Bullis & Thompson (1965); this unconfirmed record was later merely repeated in Coelho *et al.* (2006). In addition, all records of *T. gnathophylloides* from southern Brazil were re-attributed to *T. fapespae* by Almeida *et al.* (2014), although more recently *T. gna-*

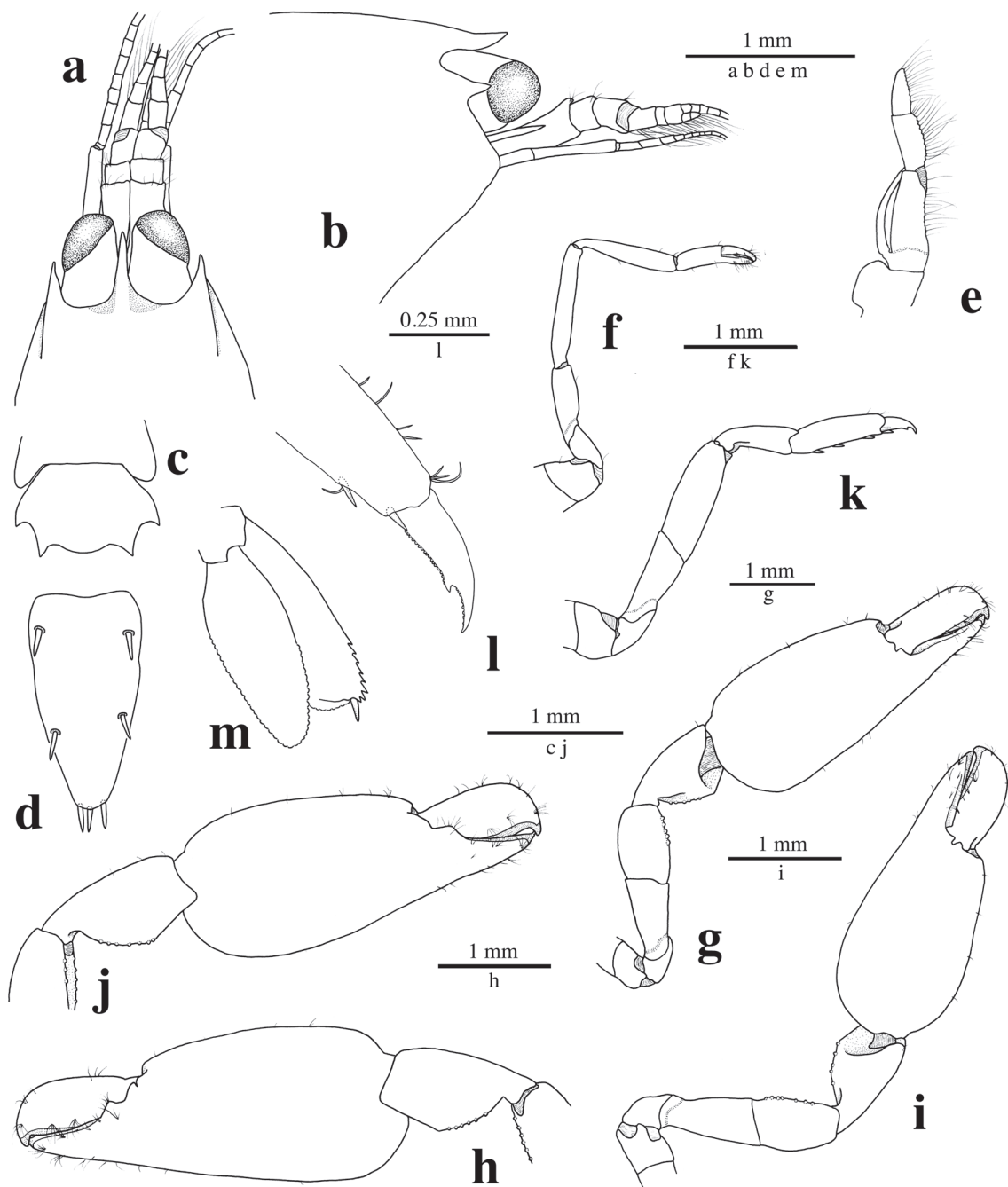


FIGURE 1: *Typton prionurus* Holthuis, 1951: male (cl 2.7 mm), MZUSP 31143, from Baía de Todos os Santos, Bahia, Brazil, a: frontal region, dorsal; b: same, lateral; c: sixth abdominal somite, dorsal; d: telson, dorsal; e: third maxilliped, lateral; f: first cheliped, lateral; g: major second cheliped, lateral; h: same, carpus and chela, mesial; i: minor second cheliped, lateral; j: same, carpus and chela, mesial; k: third pereopod, lateral; l: same, distal propodus and dactylus, lateral; m: uropod, dorsal.

thophylloides was found in the Abrolhos (Bahia), thus representing the first actual record of the species in Brazil (Soledade *et al.*, 2015).

While identifying caridean samples deposited in the Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (MZUSP), we found several interesting specimens of *Typton*, collected on the coasts of the Brazilian states of Rio de Janeiro and Bahia. These specimens belong to three species previously reported from Brazil, viz. *Typton distinctus*, *T. fapespae* (representing range extensions), *T. prionurus* (confirming its presence in Brazil, with significant range extension), and one species, *T. vulcanus* Holthuis, 1951, previously known only from the Caribbean Sea, Gulf of Mexico and Florida (Holthuis, 1951; Chace, 1972; Abele & Kim, 1986; Duris *et al.*, 2009), thus representing a new record for Brazil and the southwestern Atlantic. These four species are reported in the present study, accompanied by illustrations of the Brazilian material of *T. prionurus* and *T. vulcanus*. Drawings were made using a stereomicroscope equipped with camera lucida. Carapace length (cl, in mm) was measured along the dorsal midline from the tip of the rostrum to the posterior margin of the carapace.

Taxonomy

Family Palaemonidae Rafinesque, 1815

Subfamily Pontoniinae Kingsley, 1879

Genus *Typton* Costa, 1844

Typton distinctus Chace, 1972

Typton distinctus Chace, 1972: 49, figs. 13, 14; Abele & Kim, 1986: 17, 189, figs. d-g; Camp, 1998: 140; Ramos-Porto & Coelho, 1998: 340; Coelho *et al.*, 2006: 51; Duris *et al.*, 2009: 1056; Souza *et al.*, 2011: 45; Vieira *et al.*, 2012: 31.

Typton carneus Holthuis, 1951 *pro parte*: 162, pl. 51, figs. b-d, f-j, m-o [not *T. carneus* Holthuis, 1951, pl. 51, figs. a, e, k, l].

Typton sp. – Coelho & Ramos, 1972: 146.

Material examined: 1 female (cl 2.0 mm), MZUSP 31506, Brazil, Rio de Janeiro, Arraial do Cabo, Praia do Forno, “Transect 1”, no further data.

Description: For original description and figures see Chace (1972); for additional illustrations see Holthuis (1951), pl. 51 (as *T. carneus pro parte*).

Distribution: Western Atlantic: USA (Florida), Mexico (Bahía de la Ascensión), Cuba (Los Arroyos), Brazil

(Pernambuco, Rio de Janeiro) (Chace, 1972; Coelho *et al.*, 2006; Camp, 1998; present study).

Remarks: The female of *Typton distinctus* from Arraial do Cabo represents a significant southward range extension of this species from Pernambuco (8°S) to Rio de Janeiro (22°S). Among the Brazilian species, *T. distinctus* is morphologically closest to *T. carneus*, but can be distinguished from the latter by the rostrum not deepening near midlength (versus rostrum deepening near midlength), the more strongly twisted major chela dactylus, the less produced ventral margin of the major chela carpus, and the mandible having a reduced incisor process (versus well-developed incisor process) (Chace, 1972).

Typton fapespae Almeida, Anker & Mantelatto, 2014

Typton fapespae Almeida *et al.*, 2014: 111, figs. 1-5.
Typton gnathophylloides – Nalesso *et al.*, 1995: 96; Duarte & Nalesso, 1996: 143; Amaral *et al.*, 2010: 249 [not *T. gnathophylloides* Holthuis, 1951].

Material examined: 1 ovigerous female (cl 4.2 mm), MZUSP 31504, Brazil, Rio de Janeiro, Angra dos Reis, Praia Grande, 05.ix.1979.

Description: For original description and figures see Almeida *et al.* (2014).

Distribution: Western Atlantic: Brazil (São Paulo and Rio de Janeiro) (Almeida *et al.*, 2014; present study).

Remarks: The ovigerous female of *Typton fapespae* from Angra dos Reis represents a slight northward range extension of this species from São Paulo to Rio de Janeiro. The species is unique among the Brazilian species of *Typton* in having three sharp teeth (one median and two lateral) on the posterior margin of the sixth abdominal somite (Almeida *et al.*, 2014).

Typton prionurus Holthuis, 1951 (Fig. 1)

Typton prionurus Holthuis, 1951: 165, pl. 52, figs. a-l; Holthuis, 1952: 19; Bullis & Thompson, 1965: 8; Chace, 1972: 52; Abele & Kim, 1986: 17, 187, figs. a-c; Camp, 1998: 140; Coelho *et al.*, 2006: 51; Duris *et al.*, 2009: 1056; Santana-Moreno *et al.*, 2013: 233, fig. 2L.

Material examined: 1 male (cl 2.7 mm), 1 ovigerous female (cl 2.8 mm), MZUSP 31143, Brazil, Bahia, Baía de Todos os Santos, Porto da Barra, sta. MT6

CA6, 13°00'05"S, 38°32'01"W, associated with *Calyspongia* sp., depth 4-6 m, coll. C. Menegola & L. Martins, 20.xi.2012.

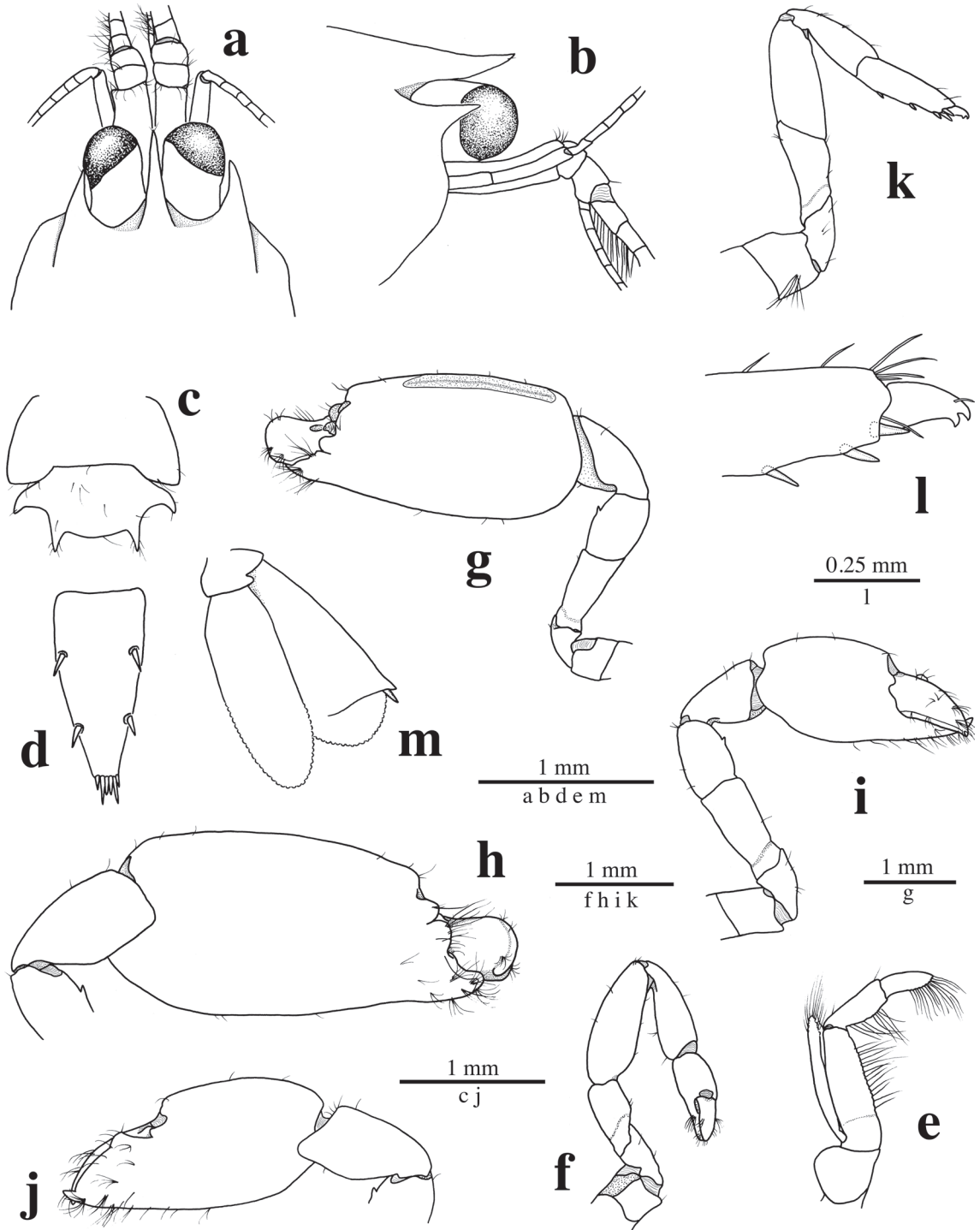


FIGURE 2: *Typton vulcanus* Holthuis, 1951: male (cl 2.6 mm), MZUSP 31144, from Baía de Todos os Santos, Bahia, Brazil, a: frontal region, dorsal; b: same, lateral; c: sixth abdominal somite, dorsal; d: telson, dorsal; e: third maxilliped, lateral; f: first cheliped, lateral; g: major second cheliped, lateral; h: same, distal merus, carpus and chela, mesial; i: minor second cheliped, lateral; j: same, distal merus, carpus and chela, mesial; k: third pereopod, lateral; l: same, distal propodus and dactylus, lateral; m: uropod, dorsal.

Description: For original description and figures see Holthuis (1951); the male specimen from Bahia is illustrated in Fig. 1.

Distribution: Western Atlantic: USA (Florida), Mexico (Gulf of Mexico), Brazil (Pará?, Bahia) (Holthuis, 1951; Bullis & Thompson, 1965; Camp, 1998; Duris *et al.*, 2009; Santana-Moreno *et al.*, 2013; present study).

Remarks: The present material confirms the occurrence of *Typton prionurus* in the southwestern Atlantic (Brazil). The single previous record of *T. prionurus* from off Pará by Bullis & Thompson (1965) remains doubtful as it was listed as “*Typton prionurus* Holthuis?”, with no further remarks, illustrations or indication of where the corresponding material was deposited. Bullis & Thompson’s (1965) record was apparently overlooked by Vieira *et al.* (2012), although it was listed in an earlier checklist of Coelho *et al.* (2006). We found no noticeable difference between the present material of *T. prionurus* (Fig. 1) and Holthuis’ (1951) description and figures. The species may be readily distinguished from its West Atlantic congeners by the serrate distolateral margin of the uropodal exopod (Fig. 1 m).

***Typton vulcanus* Holthuis, 1951
(Fig. 2)**

Typton vulcanus Holthuis, 1951: 157, pl. 49, figs. a-n; Holthuis, 1952: 19; Chace, 1972: 52; Abele & Kim, 1986: 17, 189, figs. a-c; Camp, 1998: 140; Duris *et al.*, 2009: 1056.

Material examined: 1 male (cl 2.6 mm), MZUSP 31144, Brazil, Bahia, Baía de Todos os Santos, Porto da Barra, sta. MT2 DA3, 13°00’05”S, 38°32’01”W, associated with *Callyspongia* sp., depth 4-6 m, coll. C. Menegola & L. Martins, 20.xi.2012; 1 ovigerous female (cl 3.2 mm), MZUSP 29180, same collection data.

Description: For original description and figures see Holthuis (1951); the male specimen from Bahia is illustrated in Fig. 2.

Distribution: Western Atlantic: USA (Florida), Mexico (Gulf of Mexico), Colombia (Cape la Vela), Brazil (Bahia) (Holthuis, 1951; Camp, 1998; Duris *et al.*, 2009; present study).

Remarks: The present material represents the first record of occurrence of *Typton vulcanus* in the south-

western Atlantic. The Brazilian material agrees well with Holthuis’ (1951) description and figures of *T. vulcanus*, although differing in presenting a conspicuous longitudinal depression on the dorsal surface of the major chela (Fig. 2g), a character not mentioned nor illustrated by Holthuis (1951). The importance of this character for species differentiation is yet to be determined by a direct comparison between the Brazilian and Caribbean-Florida materials.

RESUMO

O presente estudo trata de quatro espécies de camarões pontoniíneos do gênero Typton Costa, 1844, associados a esponjas, provenientes do Brasil: T. distinctus Chace, 1972, T. fapespae Almeida, Anker & Mantelatto, 2014, T. prionurus Holthuis, 1951, e T. vulcanus Holthuis, 1951. Typton distinctus é registrada pela primeira vez para o Rio de Janeiro, o que amplia significativamente a sua distribuição meridional (no Brasil esta espécie era conhecida apenas de Pernambuco). Typton fapespae, recentemente descrita de São Paulo, é adicionalmente registrada para o Rio de Janeiro. Typton prionurus e T. vulcanus são registradas para a Bahia. Typton prionurus era conhecida anteriormente no Brasil com base em um registro duvidoso para a costa do Pará, enquanto que T. vulcanus é registrada pela primeira vez para o Atlântico Sul Ocidental (Brasil). Typton prionurus e T. vulcanus são ilustradas.

PALAVRAS-CHAVE: Palaemonidae; Camarões associados a esponjas; *Typton*; Brasil; Atlântico Ocidental; Novos registros.

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REFERENCES

- ABELE, L.G. & KIM, W. 1986. *An illustrated guide to the marine decapod crustaceans of Florida*. Tallahassee, State of Florida Department of Environmental Regulation. 760p. (Technical Series. Vol. 8).
- ALMEIDA, A.O.; ANKER, A. & MANTELATTO, F.L. 2014. A new snapping species of the shrimp genus *Typton* Costa, 1844 (Decapoda: Palaemonidae) from the coast of São Paulo, southeastern Brazil. *Zootaxa*, 3835: 110-120.
- AMARAL, A.C.Z.; MIGOTTO, A.E.; TURRA, A. & SCHAEFFER-NOVELLI, Y. 2010. Araçá: biodiversidade, impactos e ameaças. *Biota Neotropica*, 10: 219-264.
- BULLIS JR., H.R. & THOMPSON, J.R. 1965. Collections by the exploratory fishing vessels Oregon, Silver Bay, Combat, and Pelican made during 1956-1960 in the southwestern North Atlantic. *United States Fish and Wildlife Service, Special Scientific Report-Fisheries, Washington*, 510: 1-130.
- CAMP, D.K. 1998. Checklist of shallow-water marine malacostracan Crustacea of Florida. In: Camp, D.K.; Lyons W.G. & Perkins, T.H. (Eds.). *Checklists of selected shallow-water marine invertebrates of Florida*. St. Petersburg, FL, Florida Department of Environmental Protection. p. 123-189. (Florida Marine Research Institute Technical Report TR-3)
- CHACE JR., F.A. 1972. The shrimps of the Smithsonian-Bredin Caribbean Expedition with summary of the West Indian shallow-water species (Crustacea: Decapoda: Natantia). *Smithsonian Contributions to Zoology*, 98: 1-179.
- COELHO, P.A. & RAMOS, M.A. 1972. A constituição e a distribuição da fauna de decápodos do litoral leste da América do Sul entre as latitudes de 5°N e 39°S. *Trabalhos Oceanográficos da Universidade Federal de Pernambuco*, 13: 133-236.
- COELHO, P.A.; ALMEIDA, A.O.; SOUZA-FILHO, J.F.; BEZERRA, L.E.A. & GIRALDES, B.W. 2006. Diversity and distribution of the marine and estuarine shrimps (Dendrobranchiata, Stenopodidea and Caridea) from North and Northeast Brazil. *Zootaxa*, 1221: 41-62.
- COSTA, O.G. 1844. Su due nuovi generi di Crostacei decapodi macrouri. *Annali delle Accademia degli Aspiranti Naturalisti*, 2: 285-292.
- DUARTE, L.F.L. & NALESSO, R.C. 1996. The sponge *Zygomycale parishii* (Bowerbank) and its endobiotic fauna. *Estuarine, Coastal and Shelf Science*, 42: 139-151.
- DURIS, Z.; HORKÁ, I.; JURACKA, P.J.; PETRUSEK, A. & SANDFORD, F. 2011. These squatters are not innocent: the evidence of parasitism in sponge-inhabiting shrimps. *PLoS ONE*, 6: e21987.
- DURIS, D.L.; ÁLVAREZ, F.; GOY, J.W. & LEMAITRE, R. 2009. Decapoda (Crustacea) of the Gulf of Mexico, with comments on the Amphionidacea. In: Felder, D.L. & Camp, D.K. (Eds.). *Gulf of Mexico. Origin, waters, and biota. Biodiversity*. TX, Texas A&M University Press. v. 1. p. 1019-1104.
- HOLTHUIS, L.B. 1951. A general revision of the Palaemonidae (Crustacea Decapoda Natantia) of the Americas. I. The subfamilies Euryrhynchinae and Pontoniinae. *Allan Hancock Foundation Publications, Occasional Papers*, 11: 1-332.
- HOLTHUIS, L.B. 1952. The Decapoda of the Siboga Expedition. Part XI. The Palaemonidae collected by the Siboga and Snellius Expeditions with remarks on other species II. Subfamily Pontoniinae. *Siboga Expédition*, 39: 1-253.
- NALESSO, R.C.; DUARTE, L.F.L.; PIEROZZI JR., I. & ENUMO, E.F. 1995. Tube epifauna of the polychaete *Phyllochaetopterus socialis* Claparède. *Estuarine, Coastal and Shelf Science*, 41: 91-100.
- RAMOS-PORTO, M. & COELHO, P.A. 1998. Malacostraca. Eucarida. Caridea (Alpheoidea excluded). In: Young, P.S. (Ed.). *Catalogue of Crustacea of Brazil*. Rio de Janeiro, Museu Nacional do Rio de Janeiro. p. 325-330. (Série Livros, 6)
- SANTANA-MORENO, D.; DE GRAVE, S. & SIMÕES, N. 2013. New records of caridean shrimps (Decapoda: Caridea) from shallow water along the northern Yucatan peninsular coasts of Mexico. *Nauplius*, 21: 225-238.
- SOLEDADE, G.O.; FONSECA, M.S. & ALMEIDA, A.O. 2015. Shallow-water stenopodidean and caridean shrimps from Abrolhos Archipelago, Brazil: new records and updated checklist. *Zootaxa*, 3905: 52-68.
- SOUZA, J.A.F.; SCHWAMBORN, R.; BARRETO, A.V.; FARIAS, I.D.; FERNANDES, L.M.G. & COELHO, P.A. 2011. Marine and estuarine shrimps (Dendrobranchiata, Stenopodidea, and Caridea) of Pernambuco State (Brazil) and northeastern Brazilian oceanic islands. *Atlântica*, 33: 33-63.
- VIEIRA, R.R.R.; FERREIRA, R.S. & D'INCAO, F. 2012. Pontoniinae (Crustacea: Decapoda: Caridea) from Brazil with taxonomic key. *Zootaxa*, 3149: 1-38.

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