Nauplius
THE JOURNAL OF THE BRAZILIAN CRUSTACEAN SOCIETY

e-ISSN 2358-2936
www.scielo.br/nau
www.crustacea.org.br

Second finding of the south western Atlantic ghost shrimp *Ctenocheloides almeidai* Anker & Pachelle, 2013 (Crustacea: Axiidea)

Patricia Souza Santos[1], Guidomar Oliveira Soledade[1] and Alexandre Oliveira Almeida[1]

1 Universidade Federal de Pernambuco, Centro de Ciências Biológicas, Departamento de Zoologia, Programa de Pós-graduação em Biologia Animal. Avenida Prof. Moraes Rêgo, 1235, Cidade Universitária. 50670-901 Recife, Pernambuco, Brazil.

ZOOBANK http://zoobank.org/urn:lsid:zoobank.org:pub:626EEDE8-F6DE-4360-A527-3F51BE5ACF8A

ABSTRACT

The ghost shrimp *Ctenocheloides almeidai* Anker & Pachelle, 2013 was described based on a single specimen collected at Ponta Verde, Maceió, state of Alagoas, northeastern Brazil. Here, we report the species from Porto Seguro, Bahia (~16º23'S), extending its distribution in the Brazilian coast in approximately 7 degrees south from the type locality in Maceió, Alagoas (~9º40'S). Notes on morphological variation of the species are provided based on the present material.

KEY WORDS

Decapoda, Ctenochelidae, new record, dead coral fauna, cryptic fauna.

The ghost shrimps genus *Ctenocheloides* Anker, 2010 currently include only three species, *Ctenocheloides attenboroughi* Anker, 2010 from Madagascar, *C. almeidai* Anker & Pachelle, 2013 from northeastern Brazil and *C. boucheti* Poore, 2015 from Papua New Guinea. A fourth species, *Ctenocheloides nomurai* Komai, 2013 described from Japan, was later removed to its own genus *Kiictenocheloides* Sakai, 2013 based on the shape of the chelipeds and armature of the major chela fingers (Sakai, 2013). The importance of such subtle differences at genus level still needs to be evaluated in future phylogenetic study. Although Sakai (2011) proposed the family Ctenocheloidae Sakai, 2011 to house both genera, the present study follows the same arrangement as in Poore (2015), keeping *Ctenocheloides* in Ctenochelidae.

Ctenocheloides almeidai was described based on a female obtained from a deep crevice cemented with compact clay-like silt in a coral rock at a depth of ~1 m in Ponta Verde, Maceió, state of Alagoas, Brazil (Anker and Pachelle, 2013).

CORRESPONDING AUTHOR
Patricia Souza Santos
patricia.souzas@ufpe.br

SUBMITTED 15 May 2016
ACCEPTED 16 June 2016
PUBLISHED 14 July 2016

DOI 10.1590/2358-2936e2016005

During the activities of the project "Diversidade de Crustáceos Decápodos Marinhos e Estuarinos do Sul da Bahia, Brasil" (2003–2015), specimens of *C. almeidai* were retrieved from dead fragments of the fire-coral *Millepora alcicornis* Linnaeus, 1758 in a locality in southern Bahia, Brazil, thus representing the second finding of the species since its original description.

The present material was collected while scuba diving at the Parque Municipal Marinho do Recife de Fora (16°23'0"S 38°59'0"W), Porto Seguro, Bahia, in April 2012 and May 2013. The specimens were obtained at a depth of 10–12 m in two types of substrata: dead portions of coral head colonized by other organisms (e.g., algae, sponges and zoanthids), and coral rubble collected on the basis of the colonies. The dead coral heads were detached using hammer and chisel. The fragments were wrapped in cloth bags to prevent the associated fauna from escaping. In the laboratory, the specimens were extracted from the coral crevices and crioanesthetized prior the preservation in ethanol 70%. The material was identified using Anker and Pachelle's (2013) description and illustrations, and deposited in the Crustacean Collection of the Museu de Oceanografia of Universidade Federal de Pernambuco, Recife, Brazil (MOUFPE). Drawings were performed with the aid of a camera lucida. Carapace length (CL) was measured along the mid-dorsal line from the anterior to posterior margins of carapace.

Systematics

Infraorder Axiidea de Saint Laurent, 1979

Family Ctenochelidae Manning & Felder, 1991

Genus *Ctenocheloides* Anker, 2010

***Ctenocheloides almeidai* Anker & Pachelle, 2013**

Material examined. 1 ovigerous female (CL 2.8 mm), 13.iv.2012, dead portions of coral head, MOUFPE 15627; 1 ovigerous female (CL 3.4 mm), 05.v.2013, coral rubble, MOUFPE 15628; 2 ovigerous female (one specimen with CL 3.6 mm and one with carapace damaged), 12.iv.2012, coral rubble, MOUFPE 15629.

Distribution. Western Atlantic – Brazil (Alagoas and Bahia) (Anker and Pachelle, 2013; present study).

Remarks. The distribution range of *C. almeidai* is herein increased in approximately 7 degrees of south latitude from the type locality in Maceió, Alagoas (~9°40'S) to Porto Seguro, Bahia (~16°23'S). The specimens from Bahia closely resembles the holotype. However, the anterolateral projections of carapace (compare Fig. 1A and Anker and Pachelle, 2013: fig. 2B) and the distal blunt lobe on first segment of antennal peduncle (compare Fig. 1B, C and Anker and Pachelle, 2013: fig. 2B) are slightly more anteriorly protruding than in the holotype. Other morphological variations observed include: front (Fig. 1A, E) varying from broadly convex to slightly protruding (*vs*. broadly convex in the holotype); ventral margin of ischium of first pereiopods (Fig. 2A, C) armed with 6–9 teeth (*vs*. 9 teeth in the holotype); ventral margin of merus of first pereiopods (Fig. 2B, D) with 1–3 large teeth (*vs*. 1–2 teeth in the holotype); *crista dentata* on the ischium of the third maxilliped (Fig. 1J–L) with 9–10 teeth (*vs*. 10 teeth in the holotype).

Acknowledgements

The authors would like to thank the Fundação de Amparo à Pesquisa do Estado da Bahia (FAPESB) (PPP0073/2010) and the Universidade Estadual de Santa Cruz (UESC) (00220.1100.590) for providing financial support for the project "Diversity of Marine and Estuarine Decapod Crustaceans in Southern Bahia, Brazil". To "Rede de Pesquisa Coral Vivo", for logistic support during field work at Parque Municipal Marinho do Recife de Fora and the "Secretaria do Meio Ambiente, Prefeitura Municipal de Porto Seguro" for collection permits in the "Parque Municipal Marinho do Recife de Fora". Letícia Magalhães Fernandes, Irlanda Matos, Jemilli Castiglioni Viaggi and Gil Marcelo Reuss-Strenzel for the support provided during samplings. PSS and GOS would like to thank the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for providing funding in the form of M.Sc. scholarships. The collecting of specimens for the present study complied with the current applicable state and federal laws of Brazil (permanent license

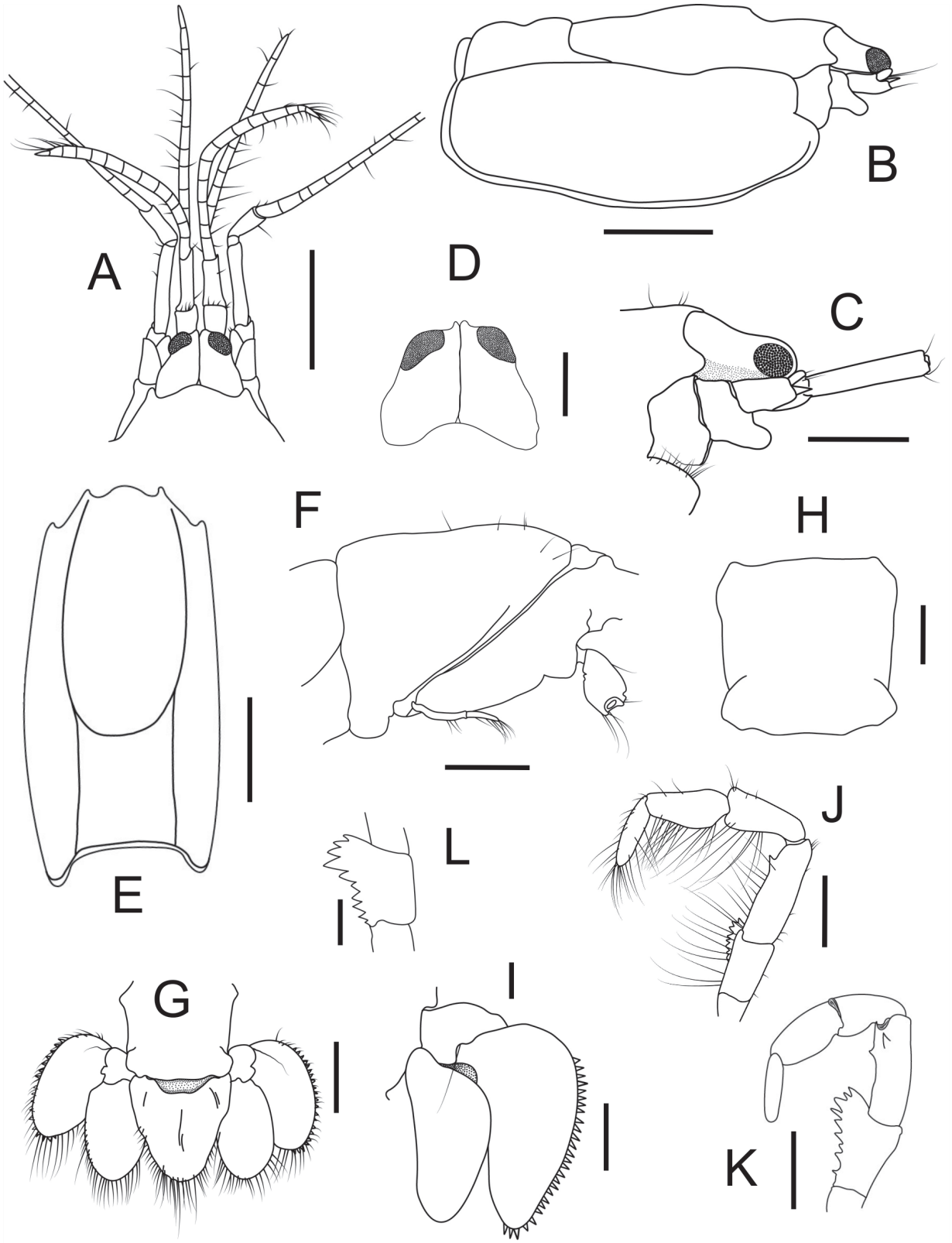

Figure 1. *Ctenocheloides almeidai* Anker & Pachelle, 2013, female from Parque Municipal Marinho do Recife de Fora, Porto Seguro, Bahia, Brazil (MOUFPE 15628): A, frontal region and cephalic appendages, dorsal view; B, carapace and some cephalic appendages, lateral view; C, frontal region and proximal part of antennal peduncle, lateral view; D, detail of eyestalks; E, carapace, dorsal view; F, first pleomere, lateral view; G, telson and uropod, dorsal view; H, sixth abdominal somite, dorsal view; I, right uropods, dorsal view; J, left third maxilliped, lateral view; K, same, mesioventral view; L, detail of *crista dentata* of right third maxilliped, mesioventral view. Scale bars: A, B, E–G, 1 mm; C, H–K, 0.5 mm; D, L, 0.25 mm.

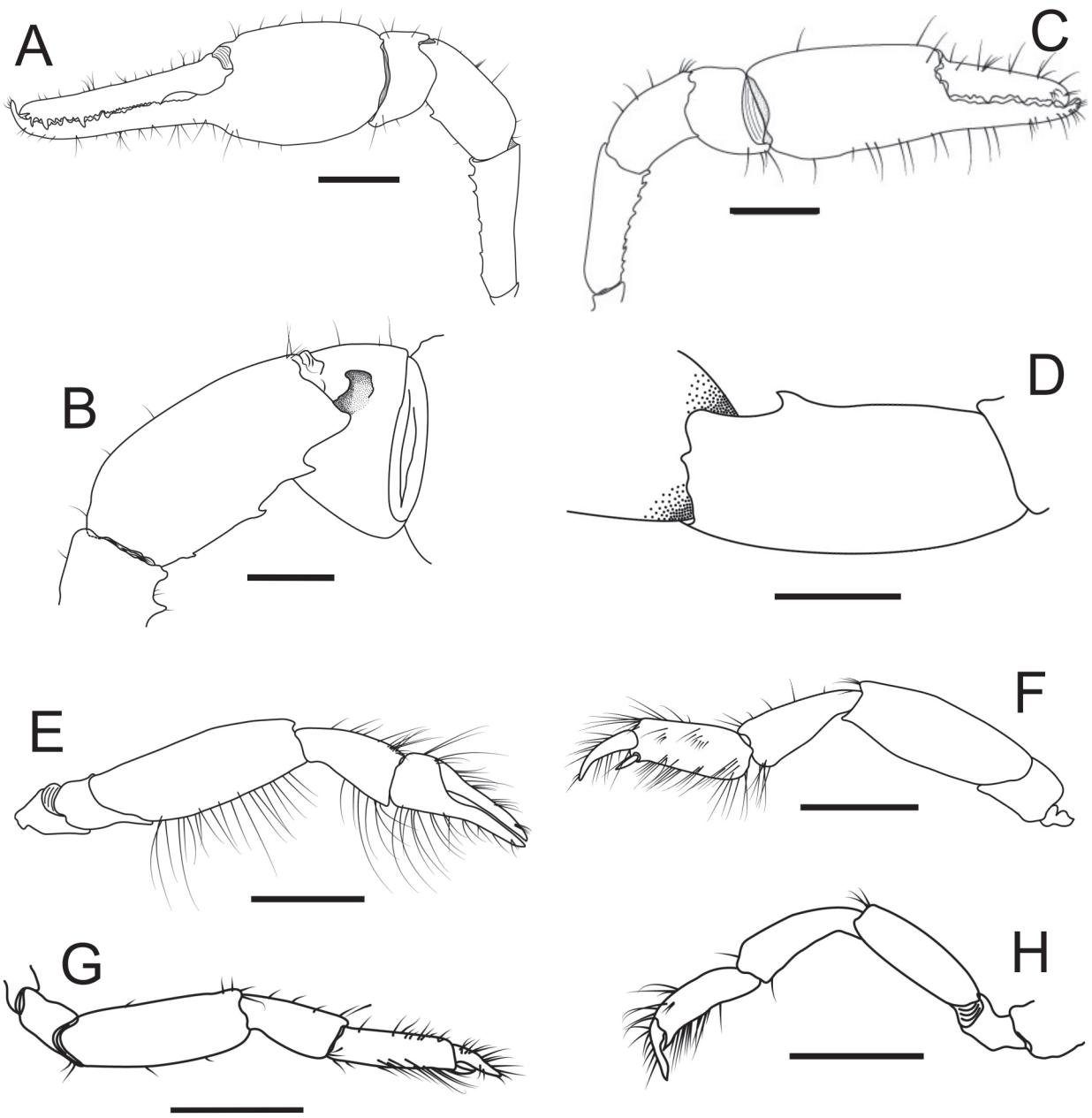

Figure 2. *Ctenocheloides almeidai* Anker & Pachelle, 2013, female from Parque Municipal Marinho do Recife de Fora, Porto Seguro, Bahia, Brazil (MOUFPE 15628): A, left major cheliped, lateral view; B, same, merus and carpus, mesial view; C, right minor cheliped, lateral view; D, same, merus, dorsolateral view; E, second pereiopod, lateral view; F, third pereiopod, lateral view; G, fourth pereiopod, lateral view; H, fifth pereiopod, lateral view. Scale bars: A, C, D–H, 1 mm; B, D, 0.5 mm.

for collection of Zoological Material No. 24408-1 MMA/IBAMA/SISBIO to AOA). Paulo Pachelle and an anonymous reviewer provided criticisms that improved the manuscript.

References

Anker, A. 2010. *Ctenocheloides attenboroughi* n. gen., n. sp. (Crustacea: Decapoda: Axiidea: Ctenochelidae), a new ghost shrimp with pectinate claw fingers from Madagascar. *Journal of Natural History*, 44(29–30): 1789–1805.

Anker, A. and Pachelle, P.P.G. 2013. *Ctenocheloides almeidai* sp. nov., a new ghost shrimp from Brazil (Decapoda, Ctenochelidae). *Zootaxa*, 3613(5): 482–492.

Komai, T. 2013. A new species of the ghost shrimp family Ctenochelidae (Crustacea: Decapoda: Axiidea) from Japan. *Species Diversity*, 18: 45–55.

Linnaeus, C. 1758. *Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis.* Editio decima, reformata. Holmiae, Laurentius Salvius, ii, 824p.

Manning, R.B and Felder, D.L. 1991. Revision of the American Callianassidae (Crustacea: Decapoda: Thalassinidea). *Proceedings of the Biological Society of Washington*, 104(4): 764–792.

Poore, G.C.B. 2015. *Ctenocheloides boucheti* n. sp., a new ghost shrimp from Papua New Guinea (Decapoda, Axiidea, Ctenochelidae). *Zootaxa*, 3955(1): 142–146.

Saint Laurent, M. de. 1979. Vers une nouvelle classification des Crustacés Décapodes Reptantia. *Bulletin de l'Office National des Pêches République Tunisienne, Ministère de l'Agriculture*, 3(1): 15–31.

Sakai, K. 2011. Axioidea of the world and a reconsideration of the Callianassoidea (Decapoda, Thalassinidea, Callianassida). *Crustaceana Monographs*, 13: 1–616.

Sakai, K. 2013. A new genus, *Kiictenocheloides* gen. nov., in the family Ctenocheloidae Sakai, 2011 (Superfamily Callianassoidea Dana, 1852) (Decapoda, Pleocyemata). *Crustaceana*, 86(13–14): 1689–1694.