



Indian Journal of Geo Marine Sciences  
Vol. 49 (11), November 2020, pp. 1779-1781



### Short Communication

## Symbiotic brachyuran crab *Eumedonus zebra* Alcock, 1895 (Crustacea: Decapoda: Pilumnidae) – A first record from South east coast of India

C Viswanathan<sup>\*a</sup>, S Goutham<sup>a,b</sup>, V Deepak Samuel<sup>a</sup>,  
R Purvaja<sup>a</sup> & R Ramesh<sup>a</sup>

<sup>a</sup>National Centre for Sustainable Coastal Management,  
Ministry of Environment, Forest & Climate Change,  
Anna University Campus, Chennai, Tamil Nadu – 600 025, India

<sup>b</sup>Marine Biology Regional Centre, Zoological Survey of India,  
Santhome High Road, Chennai, Tamil Nadu – 600 028, India

\*[E-mail: [drcviswanathan@gmail.com](mailto:drcviswanathan@gmail.com)]

Received 14 July 2017; revised 18 August 2017

The article report the occurrence of the symbiotic brachyuran crab *Eumedonus zebra* Alcock, 1895 from Chennai, Tamil Nadu, south-eastern coast of India based on the morphometric characteristics of the species. This is the first record of genus *Eumedonus* from the region and is known to be an obligate symbionts of sea urchins.

**[Keywords:** Eumedoninae, *Eumedonus zebra*, First record, Symbiotic crab]

### Introduction

The subfamily Eumedoninae Dana, 1852 under the family Pilumnidae Samouelle, 1819 is a small group of symbiotic brachyuran crabs distributed around the Indo-West Pacific regions. The members of Eumedoninae are obligate symbionts of echinoderms represented by 13 genera and 34 valid species<sup>1-3</sup>. The genus of *Eumedonus* is represented by five valid species including *Eumedonus breviryhynchus* D.G.B. Chia & Ng, 2000, *E. intermedius* D.G.B. Chia & Ng, 2000, *E. niger* H. Milne Edwards, 1834, *E. vicinus* Rathbun, 1918, and *E. zebra* Alcock, 1895. They are distributed in Australia, Japan, New Caledonia, Philippines, Madagascar and from Red Sea to East China Sea.

In the past, a single species of *Eumedonus* (*E. zebra*) was reported from Andaman Islands during the years 1987-88 by Dev Roy and Nandi<sup>4</sup>, Zoological Survey of India. However, the exact locality of species was not mentioned and also was not listed in Islandwise brachyuran crabs checklist. To the best of our knowledge there is no scientific documentation of this species from Indian coastal regions apart from the

existing voucher specimen at ZSI, Port Blair. Therefore, the present study records *Eumedonus zebra* Alcock, 1895 for the first time from Chennai, South-eastern coast of India.

### Materials and Methods

During regular field survey on March 2015, one male crab of *Eumedonus zebra* was collected from Kottivakkam fish landing centre of the Chennai coast. The crab specimen was found in the bycatch of gill net hauled at 20-30 fathoms (Fig. 1) and it was identified using the standard keys proposed by Alcock<sup>5</sup> and Chia & Ng<sup>1</sup>. The specimen is deposited and preserved at the Marine Biological Regional Centre (MBRC), Zoological Survey of India (ZSI), Chennai, Tamil Nadu, India.

### Results and Discussion

#### Systematics

Order: Decapoda Latreille, 1802

Family: Pilumnidae Samouelle, 1819

Genus: *Eumedonus* H. Milne Edwards, 1834

*Eumedonus zebra* Alcock, 1895

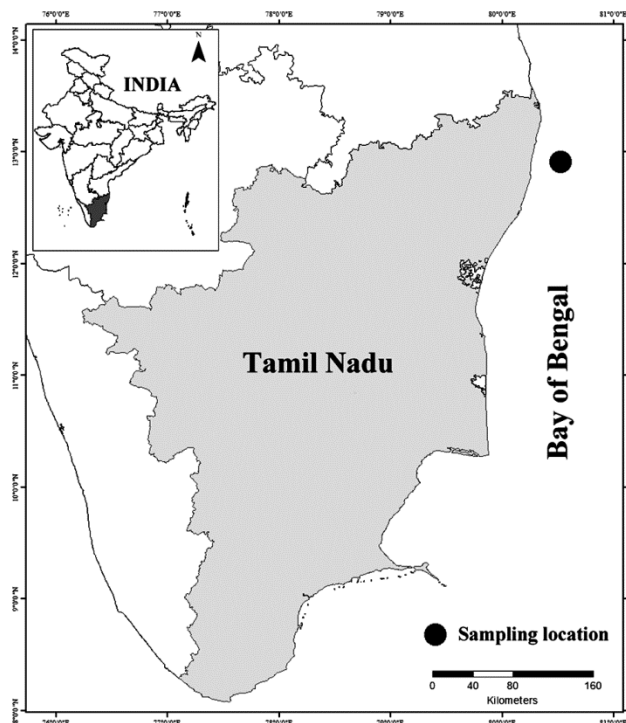


Fig. 1 — Map showing the sampling location

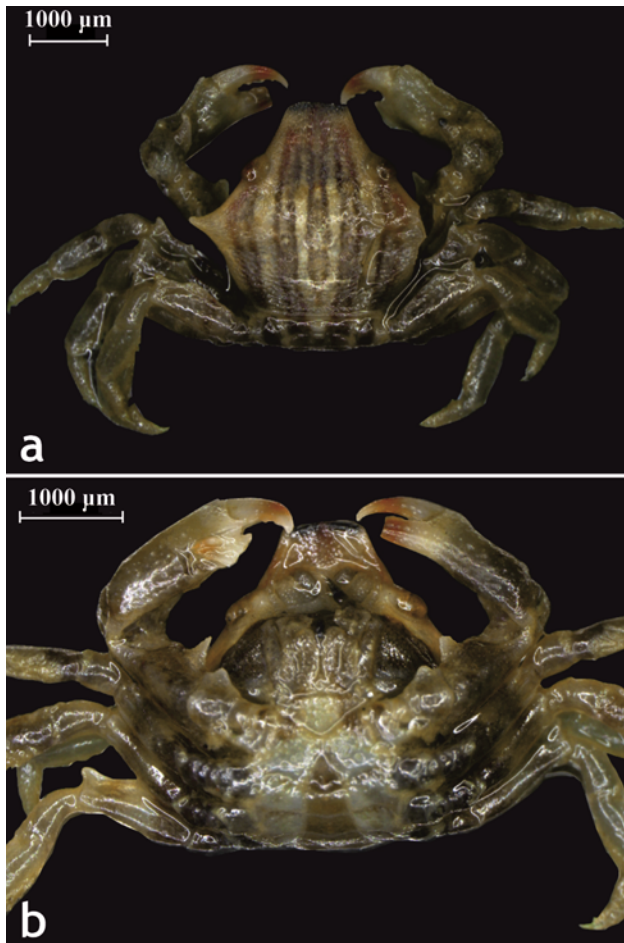


Fig. 2 — *Eumedonus zebra* Alcock, 1895: a) dorsal view, and b) ventral view

*Synonym: Eumedonus vicinus* Sakai, 1934: p. 300, Fig. 14; Sakai, 1936: 18, p. 112, Fig. 53; Serene *et al.*, 1958: Fig. 1E.

Type locality: Sri Lanka

*Material examined:* 1 ♂, from gill net hauled at a depth of 20-30 m, landed at Chennai Kottivakkam fish landing centre, Bay of Bengal, Tamil Nadu, India, on 07.09.2015; MBRC/Reg No: D1-514, Figures 2a & b.

*Distribution:* From Red Sea to East China Sea<sup>1</sup>

#### Discription

The details of morphometric characters are given in Table 1. The carapace is pentagonal and broad, rostrum long and orbits rounded. Carapace covered with granules; transverse five broad parallel brown coloured bands on carapace; three bands in the middle and two laterally placed; bands extended up to a certain distance on the abdominal flap. Sharp antero-lateral spine on each side; base of the spine broader

Table 1 — Morphometric characters of *Eumedonus zebra* (1 male)

Morphometric characters	Size (in mm)
Carapace width	3.3
Carapace length	3.9
Posterior width of carapace	1.3
Orbit width	0.8
Abdominal width	0.5
Abdominal length	1
Propodus length	1.2
Carpus length	0.4
Merus length	0.4
Basis-Ischium length	0.15
Coxa length	0.1

and tip directed laterally. Massive chelipeds compared to ambulatory legs; granulated with setae; merus and carpus with strong tooth on inner side; large tooth on basis-ischium, lamelliform; Sharp-curved dactyl with brown coloured band. Ambulatory legs compressed, cristate on anterior margin of merus and carpus; two parallel crests on posterior margin of merus.

#### Remarks

Alcock<sup>5</sup> first reported two ovigerous female of *E. zebra* from Ceylon (Sri Lanka) coast. Later, Gordon<sup>6</sup> identified a syntype of *E. zebra* at Natural History Museum, London, UK and the specimen was gifted from Indian Museum collected from Andaman Sea<sup>1</sup>. Recently, Dev Roy and Nandi<sup>4</sup> identified *E. zebra* in the collections of Zoological Survey of India made in Andaman Islands during 1987-88, however, they did not mention the exact locality neither list this species in their Island wise brachyuran crabs checklist. Except Roy and Nandi's<sup>4</sup> record, there is no additional record of the availability of *E. zebra* from the coast of India. Our specimen agrees in all respects with descriptions of Alcock<sup>3</sup> and Chia and Ng<sup>1</sup>.

The present study confirms the extended distribution of *E. zebra* from its original locality (Sri Lanka) and also reports the presence of *E. zebra* Alcock, 1895 along Chennai, Tamil Nadu, Southeast coast of India.

#### Acknowledgements

Authors are thankful to Dr. G. Hariharan, Scientist, NCSM, for preparing the sampling location map.

#### Conflict of Interest

The authors declare no competing or conflict of interest.

#### Author Contributions

CV: Identification, Writing-original draft, Writing-review & editing; SG: Collection, preservation,

photography & deposition; VDS: Writing-review & editing; RP: Resources, Supervision, Project administration; RR: Resources, Supervision, Project administration.

### References

- 1 Chia D G B & Ng P K L, A revision of *Eumedonus* H. Milne Edwards, 1834 and *Gonatonotus* White, 1847 (Crustacea: Decapoda: Brachyura: Eumedonidae), two genera of crabs symbiotic with sea urchins, *J Nat Hist*, 34 (2000) 15–56.
- 2 Ng P K L & Clark P F, The eumedonid file: a case study of systematic compatibility using larval and adult characters (Crustacea: Decapoda: Brachyura), *Invertebr Reprod Dev*, 38 (2000) 225-252.
- 3 Ng P K L, *Cebudonus poppeorum*, a new genus and new species of eumedonine crab (Crustacea: Decapoda: Brachyura: Pilumnidae) from the Philippines, *Zootaxa*, 3815 (2014) 094-102.
- 4 Dev Roy M & Nandi N C, Brachyuran crabs (Crustacea), In: *Fauna of Andaman and Nicobar Islands, State Fauna Series*, 19 (Part-I), edited by The Director, Zoological Survey of India, 2012, pp. 185-236.
- 5 Alcock A, The Brachyura Oxyrhyncha, Materials for a Carcinological fauna of India, No. 1, *J Asiat Soc Bengal*, 64 (2) (2) (1895) 286-288.
- 6 Gordon I, Crustacea Brachyura. ReÂ sultats Scienti® ques du Voyage aux Indes Occidentales NeÂ erlandaises de le Prince et la Princesse LeÂ opold de Belgique, *Mém Mus r His Nat Belg*, 3 (1934) 1-78.