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First Record of Parasitic Isopod *Renocila bijui* Aneesh & Bruce, 2020 (Isopoda: Cymothoidae) from the Arabian Sea

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Renocila bijui Aneesh & Bruce, 2020 was described as a new species from Andaman & Nicobar Islands. After its description, no studies confirm its distribution to any other places of India. Here we report *Renocila bijui* Aneesh & Bruce, 2020 for the first time from the Arabian Sea, near Okha coast of Gujarat. This paper also reports the species for the first time from the west coast of India as well as from Arabian Sea with its morphological characters. This fish parasitic isopod has a specific host fish, namely *Acanthurus triostegus* [1], and *A. mata* (Cuvier, 1829) which are common in coral reef areas in Indian coast. As isopods are associated with many species of commercially important fishes and shell fishes and causes significant losses to fisheries by the way of killing,

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stunting or damaging the fishes and thereby limiting aquaculture production and its economic viability, the report of this isopod from Gujarat coast has a significance in respect of marine fisheries.

Keywords: Cymothoidae; Renocila bijui; new record; West Coast of India.

1. INTRODUCTION

The order ISOPODA is classified into 11 suborders among which the suborder Cymothoida contains two superfamilies, (Anthuroidea and Cymothoidea). Among suborder Cymothoida, family Cymothoidae are represented in India as 48 species under 16 genera [2]. *Nerocila* Leach, 1818, the most speciose genus of the family Cymothoidae comprises of 12 valid species [3,4,2]. Most of fish species get infested by the genus *Nerocila*, which attached themselves to buccal, gill or base of fins of the host. Members of the group belong to externally attaching cymothoids including most commonly *Anilocra* Leach, 1818, *Creniola* Bruce, 1987, *Pleopodias* Richardson, 1910, and *Renocila* [5]. So far only three species of *Renocila* had been reported from India [6,7]. While performing the routine examination of sectional unnamed materials in the National Zoological Collections of ZSI, Kolkata, the present authors came across a single female specimen of *Renocila,* collected from Okha coast of Gujarat; which is identified as *Renocila bijui* Aneesh & Bruce, [8] with the help of relevant literature [9]. The species was described as a new species from Andaman & Nicobar Islands by Aneesh et al. [9]. So far there is no any report of this species from the west coast of India; this paper reports *Renocila bijui* Aneesh & Bruce, 2020 for the first time from the west coast of India as well as from the entire Arabian Sea.

2. MATERIALS AND METHODS

The specimen was encountered while observing the unnamed isopod collections in Crustacea section of ZSI, Kolkata, preserved in 70% alcohol. Photograph and the detailed morphometric measurements of the specimen were taken. All measurements were made by digital vernier caliper to the nearest 0.1 mm. The specimen was identified in the laboratory using standard literature [9].

3. RESULTS

Taxonomic accounts of the species are given hereunder based on the collected specimen.

Class: **Malacostraca** Latreille, 1802
Order: **Isopoda** Latreille, 1817
Suborder: **Cymothoida** Wägele, 1989
Superfamily: **Cymothooidea** Leach, 1814
Family: **Cymothoidae** Leach, 1818
Genus: ***Renocila*** Miers, 1880
Renocila bijui Aneesh & Bruce, [8] (Fig. 1A, B)

Materials examined: One female (Total length 25.58 mm, total width 14.21 mm), Reg. No. ZSI C9623/2, collected by ZSI survey team headed by P. Chakrabarty, in the year of 1994 from Dalda Port, Okha, Gujarat, India.

4. DIAGNOSTIC CHARACTERS

Specimen distinctly longer than broad (length/width=1·93); cephalon trapezoid, free end truncate, 2·30 times broader than long, lateral margin convergent towards the front; coxae 2-4 narrow, longer than the attached pereonite; posteroventral angle rounded; coxae 5-7 shorter than respective pereonites, hardly visible on dorsal view; antennules shorter than antennae, articles 1-3 subequal in length, each article as long as wide; antennae with 9 articles, articles 1-2 wider than others, terminal article shorter, with three setae; pereonite1 broad, longer than pereonite 2 & 3, lateral margin convex, posterior margin medially convex, concave towards the lateral end, posterolateral angle triangular; width of pereonite 2 shorter than other; pereonite 4 longest; pereonite 5 widest; lateral angle of pereonite 6 & 7 produced and blunt; posterolateral angle of pereonite7 laterally cover all the pleonites; pereonite 7 partially covers pleonite1; telson broader than long, free end rounded medially concave; median ridge prominent; Uropod lanceolate and well behind the free end of telson.

Colour: Dorsal and ventral parts of the body are tan brown.

Distribution: Andaman Island (Bay of Bengal), and Gujarat (Arabian Sea).

Fig. 1. Dorsal (A) and Ventral (B) side of *Renocila bijui* Aneesh & Bruce, [8] (ZSI Reg. No. C9623/2)

5. DISCUSSION

Renocila Miers, [5], belong to the group of externally attaching cymothoids that includes most commonly *Nerocila* Leach, 1818, *Anilocra* Leach, 1818, *Creniola* Bruce, 1987, and *Pleopodias* Richardson, 1910. Among them, *Nerocila* is dominant with twelve species, have been reported from India [10,3,11,4]. Among the globally described 20 species of *Rencila* only three species has been recorded from the Indian exclusive economic zone, namely the doubtful record of *Renocila ovata* Miers, 1880 by Barnard [12]. *Renocila bijui* Aneesh & Bruce [8,9] and *Renocila trillesi* Aneesh and Kumar [4]. *Renocila bijui* Aneesh & Bruce, was described based on 6 specimens and was found as parasitic form on the Acanthurid fishes of Coral reef habitat in Andaman. The specimen collected by P. Chakrabarty from Dalda Port, Okha, Gujarat is nearly 2,771 Kilometers from the type locality. The present specimen almost similar with the 'holoype' of *Renocila bijui* Aneesh & Bruce, [8], except some sort of size variation, the present specimen, length is 25.58 mm, width 14.21 mm (vs, holotype of *Renocila bijui* has a length of 22 mm and width 11 mm); the present specimen is tan brown in colour (vs. the holotype of *Renocila bijui* is complete dark black in colour); but the other important morphological characters of the present specimens are closely resembles with the Type of *Renocila bijui*. This species is closely resembles with the congeners *R. richardsonae* Williams & Bunkley-Williams, [13], but differs in several morphological characters: Antennules longer than antennae in *R. richardsonae*, where as in *R. bijui* the antennules distinctly shorter than antennae; inferior margin of ischium of periopod 1–3 with a lobe in *R. richardsonae*, in case of *R. bijui* ischium of periopod 1–3 without any lobe. *Renocila ovata* Miers, 1880 are also very distinct from *R. bijui*, as the previous species has nodules on the dactylus of pereopods 1–4, where as in *R. bijui* there are no nodules in dactylus of pereopods [2,14].

Interestingly this specimen also collected from the Coral reef habitats. This discovery has great significance in geographical point of view, as the species was described from the Bay of Bengal, and now encountered in the Arabian Sea. Though in this case, we don't know the host species, but this isopod species was discovered from the host fish *Acanthurus triostegus* Linnaeus, [1], and later Aneesh et al. [7] also recorded *Acanthurus mata* (Cuvier, 1829) as a new host fish for recently described *Renocila bijui* Aneesh and Bruce [8]. those surgeon fishes are common in coral reef areas along the Indian coast [15]. An investigation must be carried out in near future, on the host species of this parasitic isopod and its prevalence.

6. CONCLUSION

India has a great fishery recourses, a thorough study of parasitic fauna in marine ecosystem of this country is needed to understand the health status of coastal fishes. In this viewpoint the present report not only establish a record of the

isopod *R. bijui* from the coast of Gujarat, but also reopen a scope of further study of host specificity and prevalence, as well as the histological studies of host parasite interaction also may encourage for the greater aspect to conserve our fishery resources.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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