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NEW LOCALITY RECORD OF *CARIDINA JALIHALI* MARIAPPAN & RICHARD (OUTSIDE THE TYPE LOCALITY) WITH NOTES ON DIAGNOSTIC CHARACTERS AND SEXUAL DIMORPHISM

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INTRODUCTION

Studies on the shrimp resources of the genus *Caridina* H. Milne Edwards, 1837 of Kerala is limited (Natarajan, 1942; Pillai, 1964; Tiwari and Pillai, 1968; Thomas *et al.*, 1973; Jayachandran, 2005; 2006; Jayachandran *et al.*, 2006). Recently, Mariappan and Richard (2006) have described a new species, *Caridina jalihali*, from the River Arani at Periyapalayam and a lake at Thenneri and also from ponds situated at Maduranmangalam, Marimangalam, Redipalayam, Roshan Nagar and Singaperumalkoli of Thiruvalluvar district of Tamil Nadu. This species is small sized (grows up to 29 mm). During a recent survey, the authors have collected the species from Anchal (Kollam District, Kerala State). The present paper hence forms the first report of the species outside the type locality from Kerala state. The paper reveals important taxonomic data on the comparison of characters with original description and also discusses on sexual dimorphism and the possibilities of the species for utilization as a candidate species for aquarium.

MATERIALS AND METHODS

A total of 49 specimens (males : 25, 14.0–18.0 mm; females : 15 berried and 9 non-berried, 19.5–22.5 mm) were collected from paddy fields and adjoining channels at Anchal, Kollam District, 60 km from the town along Kollam-Punalur National High Way 208. The specimens were identified based on the literature (Jalihal *et al.*, 1984; Mariappan and Richard, 2006).

OBSERVATION AND DISCUSSION

The characters of the specimens of the present collection fully agree with that of Mariappan and Richard (2006). Table 1 shows a comparison of characters of the two collections. The rostral

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formula, spinules on the different segments of 3rd and 5th pereiopods come within the reported range already made for the species. Table 2 provides details of sexual dimorphism for the species and it reveals that it exhibits sexual dimorphism in characters like, total length, length of rostrum, relation between rostrum length and post-ocular carapace length, spinules on the ischium and merus of 5th pereiopods and appendix interna and appendix masculina of 1st and 2nd pleopods. With this report the distribution range of the species has been extended further south.

The species co-habits with *C. gurneyi* Jalihal *et al.*, 1984 at Dharwar, Karnataka State (Jalihal *et al.*, 1984) and *C. weberi* var. *sumatrensis* at Madras (Mariappan and Richard, 2006). In Kerala waters, it co-habits with *C. natarajani* Tiwari and Pillai, 1968. *C. jalihali* is more benthic in habitat and *C. natarajani* occupies preferably on the upper regions of the water bodies.

The species exhibits excellent colour pattern and is in general agreement with the colour described for the species by Mariappan and Richard (2006). The authors have maintained the species in aquarium along with fishes like guppy, gold fish, angel fish and gouramy and found quite suitable for community aquarium. Therefore, this is a new addition of shrimps in aquarium. Recently a few prawns and shrimps were introduced into the aquaria *Macrobrachium latimanus, M. gurudeve, M. ornatus, M. idella, C. natarajani* by Jayachandran *et al.* (2005) and Jayachandran (2006). The advantageous characters of the present species are—

1. Beautiful steel black colouration with off-white lines on the dorsal and lateral sides
2. Scavengers, feeds on detritus and faecal matter of fishes in a community tank.
3. Benthic forms hence avoid competition with fishes for food and space
4. Do not attack other organisms in the tank
5. Compatible with other aquarium fishes

Colour photographs of the species is given for easy identification of the species and for helping those breeders who would like to propagate the species for aquarium trade (Plate I, Figs. 1, 2).

Maximum size : 18.0 mm (male), 29.0 mm (female)

In the light of the above discussion, a revised diagnosis of the species is given as : small sized shrimps, with short rostrum extending between middle of 2nd segment to the middle of 3rd segment of antennular peduncle, tip of rostrum directed forwards, dorsal margin with 15–29 teeth (usually 17–22) of which 3–6 teeth (usually 4–5) post-orbital, ventral margin with 3–9 teeth placed more towards the distal part; ischium, merus, carpus and dactylus of third pereiopod with 1, 4–5, 1 and 6–7 spinules respectively on the inner side; ischium, merus, carpus and dactylus of fifth pereiopod with 0–1, 2–4, 1 and 30–60 spinules respectively on the inner side; telson broad with or without median terminal spine, dorsal surface with 5–6 pairs of spines and distal margin with 3–5 pairs of spinules; first pleopod of male with appendix interna and uropod with 17–20 spinules on the diaeresis. The animal is steel black in colour with distinct off-white bands on the dorsal and lateral sides of the abdomen.

Table 1 A comparison of characters of *C. jalihali* Mariappan & Richard from Madras and Kerala for analyzing the regional variations if any.

Characters	*C. jalihali* Mariappan & Richard	
	Madras, Tamil Nadu	**Anchal, Kerala**
Length of rostrum	Rostrum moderately long, extending up to middle of 3rd segment of antennular peduncle	Rostrum extends in between the middle of 2nd to 3rd segments of antennular peduncle
Rostral formula	15–29/3–9 (3–6 post-orbital) (usually 17–22/5–7 (4–5)	18–24/5–8 (5–6 post-orbital) (usually 19–21/5–7 (6)
Proportion of rostrum to post-ocular carapace	0.40 to 0.58 times	0.47 to 0.55 times
Spinules on 3rd pereiopods		
– ischium	1	1
– merus	3–4	4–5
– carpus	1	1
– dactylus	8–10 (mostly 8–9)	6–7
Spinules on 5th pereiopods		
– ischium	0	0–1
– merus	2–3	2–4
– carpus	1	1
– dactylus	32–60	42–44
Telson		
– dorsal spines	5–6 pairs (mostly 5)	5–6 pairs (mostly 5)
– distal setae	3–5 pairs	3–4 pairs
– diaeresis	17–20	18–20
Eggs		
– colour	Brown in colour	Brown in colour
– size	0.60–0.67 x 0.88–1.07 mm	0.53–0.59 x 0.83–0.94 mm
Fecundity	50-100	54-112
Colouration	Steel black with distinct white bands mid-dorsally and cross bands in the abdomen and also with evenly distributed red chromatophores	Steel black with distinct off-white bands mid-dorsally and cross bands in the abdomen. No distinct red chromatophores.
Size (mm)		
– male	12.0–15.0	14.0–18.0
– non-berried	14.0–21.0	16.0–19.0
– berried	20.0–29.0	19.5–22.5

Table 2 : Sexual dimorphism in *C. jalihali* Mariappan & Richard

Characters	Male	Female
Length of rostrum	Rostrum comparatively short	Rostrum comparatively longer
Rostral formula	17–23/5–7 (6 post-orbital)	18–24/5–8 (5–6 post-orbital)
Proportion of rostrum to post-ocular carapace	0.53–0.57	0.45–0.55
Spinules on 3rd pereiopod		
– ischium	1	1
– merus	4–5	4–5
– carpus	1	1
– dactylus	6	6–7
Spinules on 5th pereiopod		
– ischium	0–1	0
– merus	3–4	2–3
– carpus	1	1
Pleopods		
– 1st pleopod	Endopod with appendix interna	Endopod lacks appendix interna
– 2nd pleopod	Endopod with appendix masculina and interna	Endopod with appendix interna only
Size	14.0–18.0 mm	16.0–22.5 mm

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