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Range Extension of *Caridina weberi sumatrensis* De Man, 1892 (Decapoda, Caridea, Atyidae) to Sindh Waters (Karachi, Pakistan)

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Abstract: A freshwater atyid *Caridina weberi sumatrensis* is being reported for the first time from Sindh waters. This report from Karachi is evidently at the margin of its range.

Key Words: freshwater shrimp, Atyidae, Sindh, Pakistan

Sindh Suları (Karaçi, Pakistan) İçin Bir İlk Kayıt: *Caridina weberi sumatrensis* De Man, 1892 (Decapoda, Caridea, Atyidae)

Özet: Bir tatlı su atyid'i *Caridina weberi sumatrensis* Sindh sularından ilk kez rapor edilmektedir. Karaçi'den yapılan bu kayıt türün dağılım alanının kenarındadır.

Anahtar Sözcükler: Tatlı su karidesi, Atyidae, Sindh, Pakistan

Introduction

The range of the family Atyidae de Haan, is throughout the tropics and most temperate regions of the world - the adults are almost exclusively confined to freshwater. This is a large family with 35 genera, divided into five subfamilies by Holthuis (1). Qadri (2) in his account on freshwater and estuarine prawns of the province of Sindh did not mention any atyid. There are only two records of atyids from two provinces of Pakistan: the first one on *Caridina* (*C. nolitica*) was by Mehr et al, (3), from the province of Punjab, then a new genus *Kalriana* by Zuberi, (4) from the province of Sindh (not mentioned in Zoological Records of 1998 or later, personal communication, first author with L.B. Holthuis). Specimens of another species of the genus *Caridina*, *C. weberi sumatrensis* de Man (5) are described in the present paper.

The genus *Caridina* Milne Edwards has a very wide range from Western equatorial Africa up to the Hawaii Islands. Several varieties are recognized by Bouvier (6). According to Chace (7) few caridean groups offer taxonomic problems of greater difficulty than do the

approximately 160 species and subspecies that are currently recognized in this genus.

The present subspecies differs from the typical species in having dorsal teeth on the carapace, posterior to orbital margin, pereopod 1 with fingers longer than palm, telson without a median denticle when compared with *C. weberi* given by Hung *et al.* (8).

These prawns are increasingly becoming popular as crustacean bioassay material in experimental biology (Richard & Chandran (9)). Although the shrimps are small and not directly utilized by man as food, some of the species are cultured commercially and sold as live food for aquarium fishes as reported by Hung *et al.* (8). Chace (7) suggests that nearly all of the species occurring in a broad geographic region may be found in a single stream; they were also collected from tanks with muddy water by Kemp (10) and Chopra and Tiwari (11).

Material

All were obtained alive from the tapwater of the staff accomodation in the Karachi University campus. The

water to the university campus is supplied from the Dumbloti wells, 13km away from the campus from where the water is supplied through the Gharo Canal. The salinity is nil, hardness as CaCO₃ 120mg/L, Chloride 284mg/L, Sulphate 77mg/L, pH 7.2mg/L; air temperature 19-20°C; water temperature 17.5°C and DO 5.2mg/L.

Three females November, 1998, MRC CAT NO. CARI 232; one female, 14 December, 1999, MRC CAT NO. CARI 233; February 2000; one mutilated specimen (sex not determined). 1 specimen, April, 2000 (sex not determined). Size range CL 2.8-5.1mm; TL 12-28mm.

Results

Subfamily Caridellinae Holthuis, 1986

Caridina weberi sumatrensis De Man, 1892

(Figure 1,A-J and Figure 2)

Caridina weberi sumatrensis De Man, 1892 : 375, fig. 23g.

Caridina weberi prox. var. *sumatrensis* Kemp, 1918 : 99; Chopra & Tiwari, 1947 : 223.

Caridina weberi sumatrensis Johnson, 1966 : 420; Richard & Chandran, 1994 : 257 (in discussion); Chace, 1997 : 22.

Description

Rostrum not reaching as far as distant end of antennular peduncle, dorsal margin horizontal and turned upward at the tip (Fig. 1A), armed with up to 20 teeth not reaching extreme apex but extending on dorsal margin of carapace, armed ventrally with 4-5 teeth. Suborbital angle indistinguishably fused with antennal spines. Pterygostomial margin with a spinule; that of the right side missing in one female. Eyes well developed. Dorsal surface of telson with 3 pairs of spines; tip of telson (Fig. 1B) convex, armed with 10 spines (Fig. 1B').

Antennular peduncle (Fig. 1C) not slender, stylocerite reaching two third of basal segment of antennular peduncle. Basal segment more than half length of peduncle with distinct anterolateral angle. Scaphocerite (Fig. 1D) narrow, without any distinct transverse suture.

Mandible (Fig. 1E, E') without palp, eleven small and large teeth at extremity of incisor process; numerous setae present between molar and incisor processes.

First pereopod (Fig. 1F) shorter and stouter than second (Fig. 1G), different kinds of setae present apically on first pereopod (Fig. 1F'-F'"). Dactyli of third pereopods (Fig. 1H, H') terminating in double spines, with about 5 accessory spines increasing in length distally. Dactylus of last pereopod as figured (Fig. 1,I'). Pleopod first (Fig. 1J), in one female endopod equals to exopod (Fig. 1J'); pleopod second as in figure 1 K,K'.

Colour

Transparent with red chromatophores arranged uniformly (Fig. 2).

Note on habitat

It seems to be a hardy species travelling all the 13km, tolerating the pressure and the jerks caused by the hard, water pipe line. Johnson (12) also gives the variety to "occur in fast though seldom in torrential waters and in tree country". To our knowledge this water supply is neither filtered nor treated. The natural hardness to salinity, temperature, low dissolved oxygen levels and desiccation of *Caridina* spp. has also been pointed out by Jalihal *et al.* (13).

Distribution

The main species *C. weberi* ranges from Indonesia and Polynesia including India as far east as the Marqueses Islands (Hung *et al.* (8)). The subspecies *sumatrensis* which is being reported presently is evidently now at the margin of its range, i.e., the Sindh waters. The gap in the distribution is filled by Rao's report (14) from Lake Kolleru, India.

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Figure 1. *Caridina weberi sumatrensis* De Man, 1892. All from female (C.L 2.8mm) except J'.

A. Front lateral view; B. Telson; B'. Posterior margin of telson, magnified; C. Antennule; D. Antenna; E. Mandible; E'. Same, cutting edge, enlarged; F. First pereiopod; F'-F'''. Same, setae on anterior margins of fingers; G. Second pereiopod; H. Distal end of third pereiopod; H'. Same, enlarged; I. Distal end of fifth pereiopod; I'. Same, enlarged; J. First normal pleopod; J'. First abnormal pleopod; K. Second pleopod; K'. Same, appendix interna enlarged.



Figure 2. *Caridina weberi sumatrensis* de Man, 1892.

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