New records of Gerromorpha, Leptopodomorpha and Nepomorpha (Heteroptera, Insecta) from Madhya Pradesh, India

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ABSTRACT

Four species of aquatic Heteroptera Gerris nepalensis Distant, 1910, Mesovelia horvathi Lundblad, 1934, Valleriola cicindeloides Distant, 1908, and Anisops kuroiwae Matsumura, 1915 belonging to four families and three infraorders namely Gerromorpha, Leptopodomorpha and Nepomorpha are newly recorded for the state of Madhya Pradesh. The diagnosis and distribution data of all these four species are provided here.

KEY WORDS

New records, Aquatic Heteroptera, Madhya Pradesh.

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INTRODUCTION

Aquatic bugs belonging to the order Hemiptera, suborder Heteroptera, include three infraorders viz., Gerromorpha, Leptopodomorpha and Nepomorpha. The first two infraorders are semiaquatic bugs and the latter one is true aquatic bugs. They play a major role as biological control agents, and ecologically as food for higher trophic levels such as fishes, birds etc. Thirumalai et al. (2007) have given detailed information about aquatic bugs belonging to infraorders Gerromorpha and Nepomorpha from Madhya Pradesh. Leptopodomorpha have not been given due attention in India, except for the record of the occurrence of 4 genera and 10 species (Thirumalai, 1999). In the present study four species of aquatic and semiaquatic Heteroptera, Gerris nepalensis Distant, 1910 and Mesovelia horvathi Lundblad, 1934, Valleriola cicindeloides Distant, 1908, and Anisops kuroiwae Matsumura, 1915 belonging to four families, namely Gerridae, Mesoveliidae, Leptopodidae and Notonectidae are newly recorded from Madhya Pradesh. Previously four species of aquatic Heteroptera, namely Microvelia albomaculata Distant, 1909, Rhagovelia (Neorrhagovelia) sumatrensis Lundblad, 1936, Rhagadotarsus (Rhatagotarsus) kraepelini Breddin, 1905 and Naboandelus signatus Distant, 1910 were recorded by Chandra et al. (in press) from Madhya Pradesh, after the record of 57 species of aquatic Heteroptera from the state by Thirumalai et al. (2007).

RESULTS

Infraorder GERROMORPHA
Family GERRIDAE
Subfamily GERRINAE

Gerris nepalensis Distant, 1910

1903. Gerris nepalensis Distant: Fauna of British India, 5: 143-144.

EXAMINED MATERIAL. Betul, Mura, 24.III. 1990, 1 apt. male (HSS); Jabalpur, Amkhas, Nagpur Road, 2.VI.1971, 1 apt. female (DKG); Budhagar tank, 20.III.1974, 1 mpt. female, 1 apt. female, 1 imm. ex. (DSM); Panna, Pratappur, 15.II.1987, 1 apt. male ex. (RKS); Shivpuri, SSS Club, 24.III.1980, 3 apt. males, 3 mpt. females, 6 apt. females (DKH).

DIAGNOSIS. Body piceous and flat ventrally. Male body length 6.87 mm, width across mesoacetabula 2.27 mm, female, length 8.27 width 2.68 mm; generally apterous (Fig. 1), rarely macropterous; head predominantly black and shiny, base with crescent shaped yellow marking; pronotum piceous, anterior pronotal lobe with median yellow stripe; apex of 7th abdominal sternum excavated medially; eighth abdominal sternum of male with two silvery white patches; connexival spines well developed in females, very small in males; ventral sclerite of male endosoma rod shaped.

DISTRIBUTION. Vietnam, India, China, Japan, Far East of Russia. DISTRIBUTION IN INDIA: Arunachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Sikkim and Uttar Pradesh.

REMARKS. Distant (1903) mentioned that body above and hemelytra are black, but in the specimens recorded here they are dark brown to piceous.

Family MESOVELIIDAE
Subfamily MESOVELIINAE

Valleriola cicindeloides Distant, 1908


EXAMINED MATERIAL. Jabalpur, Vijay Nagar, ZSI Residential Colony, 25.IX.2010, 1 ex. (EEJ-D); Bheraghat, 24.XI.1972, 1 ex. (NKS); Khargone, Gangli Village, 10.II.1971, 1 ex. (VVR).

DIAGNOSIS. Length 5.5 mm; Colour greyish ochraceous; body (Fig. 2) with pale pilosity; head with ocelli and median tubercle; first antennal segment stout, small and the 3rd segment very longer; pronotum with four dark brownish grey fascia, which is not reached upto the apex of
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Figure 1. *Gerris nepalensis* male, apt. form (length 6.87 mm). Figure 2. *Valleriola cicindeloides* (length 5.5 mm). Figure 3. *Mesovelia horvathi* male dorsal view (length 2.6 mm). Figure 4. *idem* Fig. 3, ventral view. Figure 5. *Anisops kuroiwae* male dorsal view (length 5.6 mm). Figure 6. *idem* Fig. 5, head ventral view.
pronotum; base, postero-lateral margin and apex of pronotum ochraceous; scutellum and wings fuscous; clavus with two ochraceous spots, one at the apex and another at the base; middle and apex of the corium with two ochraceous spots; membrane grayish ochraceous.

**DISTRIBUTION.** Yemen, India. **DISTRIBUTION IN INDIA:** Bihar, Madhya Pradesh, and West Bengal.

**REMARKS.** Anterior central longitudinal line and the fascia on the posterior region of pronotum is not prominent in all specimens. Sometimes the fascia united and only leaving the central prominent apical and faint postero sub lateral ochraceous patch.

**Infraorder NEPOMORPHA**

**Family NOTONECTIDAE**

**Subfamily ANISOPINAE**

**Anisops kuroiwae** Matsumura, 1915


**EXAMINED MATERIAL.** Jabalpur, Vijay Nagar, ZSI Residential Colony, 27 IX.2010, 2 males, 2 females (EEJ); Shahdol, Bandhavgarh National Park, 7 IX.1972, 2 exx. (HK).

**DIAGNOSIS.** Length male 5.6-6.4, female 5.4-6.3; width, male 1.5-1.6, female 1.3-1.8. Interocular space anteriorly produced into a cephalic projection. Cephalic projection in dorsal view rounded at apex, in lateral view extending in front of eye less than half the total length of the frons. In frontal view, tylus and frons are excavate with two carinae on each. Males (Figs. 5, 6) are easily recognized by the structure of the cephalic projection and the frons.

**DISTRIBUTION.** Widespread in Australasia from southern China to Australia, Southeastern Palaearctic (Japan) and West Malaysia.

**DISTRIBUTION IN INDIA:** Arunachal Pradesh, Assam, Delhi, Madhya Pradesh, Manipur, Sikkim, Tripura, Uttar Pradesh and West Bengal.

**CONCLUSION**

In the present study 4 species of aquatic Heteroptera, *Gerris nepalensis, Mesovelia horvathi, Valleriola cicindeloides* and *Anisops kuroiwae*, belonging to the infraorders Gerromorpha, Nepomorpha and Leptopodomorpha are newly recorded from Madhya Pradesh. It is interesting to note that *Mesovelia horvathi* hitherto recorded only from South India (Tamil Nadu) has been reported from Central India.

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