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Additional Records of Reduviid (Hemiptera: Reduviidae) Assassin bugs from Dumna Nature Park, Jabalpur, Madhya Pradesh, India

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ABSTRACT: Two species of family Reduviidae viz. *Coranus fuscipennis* and *Oncocephalus schioedtei* belonging to two subfamilies viz. Harpactorinae and Stenopodainae respectively, were recorded from Dumna Nature Park, Jabalpur, Madhya Pradesh. These were recorded for the first time from the park. Both the species were collected by light trap as well as by sweep net. Both the species are predators on other insects.

Key words: Hemiptera; Reduviidae; Rostrum; Assassin bug; Predacious; Dumna Nature Park.

INTRODUCTION

The insect species diversity is enormous and about 867091 species have been described throughout the world. A total of 80000 species of Hemiptera belonging to 77 families has been described (Ghosh and Singh, 2000). So far, 6500 species of Hemiptera has been recorded from India. Out of 6500 species of Hemiptera, 2421 species belonging to 579 are endemic to India (Ghosh and Singh, 2000). Throughout the world family Reduviidae is represented by 6878 species or subspecies (Henry, 2009). Out of 6878 species, India is represented by 464 species (Ambrose, 2006).

Hemiptera insects are either phytophagus or predators (Bal and Biswas, 2013). Family Reduviidae of Hemiptera is predacious and the species belonging to this family are commonly called as assassin bugs (Bal and Biswas, 2013). They are characterized by short and curved beak which fits into the groove between the legs (Frank and Slosser, 1996). Labial tip and sensory structures on rostrum helps the insect in finding the proper prey (Bal and Biswas, 2013).

As compared to other insect orders, Hemiptera fauna has been studied extensively studied in the state of Madhya Pradesh by many workers (Chandra and Kushwaha, 2013a; Chandra and Kushwaha, 2013b; Chandra , *et al.,* 2012; Chandra *et al.,* 2010; Ramakrishna *et al.,* 2006). However, present research work has been carried out in Dumna Nature Park, Jabalpur, which is least explored area regarding insect diversity.

METHODOLOGY

A. Study area

The state of Madhya Pradesh is located in the center of India and lies between 210 to 250 N and longitudes 740 to 840 E. One among almost unexplored areas of MP till date is Dumna Nature Park (DNP). The DNP covers an area of 1058 ha and is located (230 10, 800 1) on the way to Dumna Airport Road about 6 km away from the campus of the Rani Durgawati University. It is an

Eco-tourism centre and mainly embraces two major ecosystems viz. a forest ecosystem (Bamboo forest) and a fresh water ecosystem (Khandhari water reservoir). Very little work regarding insect diversity has been reported so far from the Park. Only few species belonging to Reduviidae, Vespide and Scoliidae families of Hemiptera and Hymenoptera have been reported recently (Sheikh *et. al*., 2016; Sheikh *et. al*., 2016b; Sheikh *et al.,* 2016c; Sheikh *et al*., 2016d).

B. Sampling techniques

Though there were many sampling techniques (light trap, pitfall trap and Malaise trap) previously employed for the collection of insect fauna in the DNP (Sheikh et al., 2016a; Sheikh et al., 2016e). However, during this study, we used sweep net and light trap during 2016 for the collection of Reduviidae fauna from the Park.

Sweep Net. Sweep net made up of 11 inch diameter circular iron frame attached to an aluminum handle of 30 inches long and 2.5 inch diameter. A conical net bag of 28 inch length attached to the circular frame, tapers towards the lower end. Reduviidae fauna was collected by sweeping the net against the insect either in air or settled on plants or objects. The trapped insect was carefully transferred to the killing bottle.

Light Trap. A funnel shaped light trap was installed on May 6, 2014 in the middle of the forest, equidistant to all the four sampling sites. The trap consisted of a mercury bulb (400 W) hanging beneath the roof into the funnel. The roof made of tin protects the trap from rain showers. The tin funnel has a diameter of 18 inches at the end-facing bulb and a diameter of 3 inches at the other end, which receives a box. The box is a square, each side measuring 20 inches. Bulb operated though main supply indirectly with the help of choke. The trap was erected on the iron stand. The insects attracted to the light, hover around the bulb and eventually fell into the funnel, eventually were captured.

Fig. 1. Collection methods: Left- Sweep net; Right- Light trap.

RESULTS

During the study, two species of Reduviidae were recorded from DNP. Both the species are new records to the park. The two new records of Reduviidae are *Coranus fuscipennis* and *Oncocephalus schioedtei.*

A. Systematic list

The systematic list of the two new records of Reduviid bugs from DNP is given below

Superfamily: **Cimicoidea**
Family: **Reduviidae**
Subfamily: **Harpactorinae**
Genus: Coranus Curtis, 1833
1. *Coranus fuscipennis* Reuter, 1881
Subfamily: **Stenopodainae**
Genus: Oncocephalus Klug, 1830
2. *Oncocephalus schioedtei* Reuter, 1883

B. Systematic account

The systematic account of two Reduviid species is as under.

Genus: ***Coranus*** Curtis, 1833

1. *Coranus fuscipennis* Reuter, 1881

1881. *Coranus fuscipennis* Reuter, *Acta Soc. Sci. Fenn.*, 12: 275.

Diagnostic characters. Head narrower than body, postocular area of head with a central pale longitudinal line; body black, sparsely covered with hair; antennae black, first segment, clay colour; scutellum with an erect conical spine; posterior lobe of pronotum densely granulate; corium pale yellowish brown, reddish brown on apical area; clavus, membrane black; femora nodulose, totally black, sometimes annulated with reddish brown band; tibiae, tarsi black, annulated with brownish yellow band near base and apex; abdomen beneath black. Length: 9.5 mm.

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 5.x.2016, Coll. Altaf Hussain Sheikh.

Distribution. India: Andhra Pradesh, Chhattisgarh, Maharashtra, Madhya Pradesh, Meghalaya, Tamil Nadu, Tripura, Uttarakhand and West Bengal; Elsewhere: China and Indonesia.

Genus: ***Oncocephalus*** Klug, 1830

(a) *Coranus fuscipennis* Reuter, 1881.

2. *Oncocephalus schioedtei* Reuter, 1883

1883. *Oncocephalus schioedtei* Reuter, *Act. Soc. Sc. Fenn.,* 12: 702.

Diagnostic characters. Head more or less pointed, with a prominent black spot on disk behind eyes; antero-ocular region about twice the length of post-ocular region of head; basal joint of antennae with brownish grey biannulation; first joint of antennae about as long as head; pronotum with two central longitudinal lines fused on anterior lobe, lateral region with two obscure waved lines; anterior and lateral angles of pronotum distinctly acutely prominent; corium with a posterior sub-claval elongate spot, sub-quadrate spot near inner angle and a large discal elongate spot on membrane cinnamon-brown. Length: 18 mm.

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 10.iii.2016, Coll. Altaf Hussain Sheikh.

Distribution. India: Chhattisgarh and West Bengal; Elsewhere: Sri Lanka.

(b) *Oncocephalus schioedtei* Reuter, 1883

Fig. 2. Photographs of two Reduviid bugs recorded from DNP.

DISCUSSION

A total of 464 Reduviidae species have been recorded from India (Ambrose, 2006). Therefore, Reduviidae is among the diverse families of the Hemiptera in India. Five species of Reduviid bugs viz. *Ectrychotes dispar, Rhynocoris marginatus, R. fuscipes, Ectomocoris cordiger* and *Acanthaspis trimaculata* have been reported earlier from DNP (Sheikh *et al.,* 2016b). All the above five species have been recorded during the present study as well but only two species viz. *C. fuscipennis* and *O. schioedtei* are new records from DNP.

Reduviids bugs are usually found under boulders, on shrubs or under the bark microhabitats. Tropical rain forests have high species abundance of Reduviid bugs (particularly subfamily Reduviinae) than semi-arid zones and scrub forests. Stenopodainae bugs are mostly endemic to tropical rain forests and good number of species is found in agro-ecosystems. Harpactorinae usually prefer rain forests followed by semi-arid areas (Ambrose, 2006). However, DNP is a mixed forest with a complex of microhabitats and high diversity of flora, extensive study will provide a complete list of the Reduviidae fauna.

CONCLUSION

Family reduviidae were represented by two species viz. *C. fuscipennis* and *O. schioedtei* and all the two species are new records from Dumna Nature Park. Though, these species have been reported from other parts of Madhya Pradesh before. Family Reduviidae is predacious in nature and its species are usually predators on other species of insects. For example *Rhynocoris marginatus* is a predator reduviid bug which consumes larvae of *Aproaerema modicella* and *Helicoverpa armigera* in particular. Reduviidae species belonging to genera like *Sinea* and *Zelus* feed on other insects both on nymphs and adults. Because of the massive size of the assassin bugs, they can consume large prey and could be potential biological control agents.

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