



FIRST RECORD OF *ILLEIS BIELAWSKII* GHORPADE, 1976 (COLEOPTERA: COCCINELLIDAE) FROM MAHARASHTRA: A REGION OF THE NORTHERN WESTERN GHATS.

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ABSTRACT

Most of the Coccinellid beetles are beneficial insects because they are predators of many agricultural crop pests. The *Illeis bielawskii* is a mycophagous ladybird beetle feeding on powdery mildews of many crops. This species was earlier reported only from state Karnataka, India. This species is now reported for the first time in Kolhapur, Maharashtra, India and hence, it is an addition to the Fauna of Maharashtra. Being a mycophagous insect, *I. bielawskii* can be used to control powdery mildew disease of crops through the IPM program. Present communication provides diagnostics of habitus with color photographs.

KEY WORDS: Coccinellidae, mycophagous, *Illeis bielawskii*, Kolhapur.

INTRODUCTION

The family Coccinellidae generally consists of useful insects, because many species of it prey on agricultural pests. However, some species of this family are herbivorous and mycophagous. It is a widespread family consists of nearly 6000 species worldwide^[1] and in the Indian subcontinent, it is represented by 400 species (excluding Epilachninae subfamily) belong to 79 genera.^[2] Jadhav and Sharma^[3] enlisted 20 species in the Fauna of Maharashtra state and Bhatnagar^[4] reported 16 species in the Northern Western Ghats region of Maharashtra.

The genus *Illeis* is peculiar to the Oriental region and 10 species along with 2 subspecies have so far been described.^[5] Kapur^[6] recorded *I. cincta* and *I. bistigmosa* from Goa from which *I. bistigmosa* is the first time listed from the Indian mainland. A mycophagous lady beetle *I. bielawskii* was reported from Karnataka and described as a new species by Ghorpade.^[5] During the survey of various localities of district Kolhapur, the authors came across the species *I. bielawskii* that have not been recently recorded from Maharashtra State and hence, it becomes the first report for Maharashtra. Ghorpade^[5] has described this species in detail. However, brief additional diagnostic characters and illustrations of the habitus of the species are provided here.

MATERIALS AND METHODS

While studying the Coccinellidae of the district Kolhapur, we have come across a species collected on

Mulberry plant, V1 variety that is not recorded from Maharashtra. This species has been identified as *Illeis bielawskii* by using the literature of Ghorpade^[5] and Poorani and Lalitha.^[7] The specimens were photographed and preserved. Images of the habitus were taken using a Lawrence and Mayo LM52-3621 stereomicroscope fitted with a Nikon, Coolpix digital camera.

RESULTS

Material Examined: ZSUK.LB. 337, 1 female, 3.xi.2018; ZSUK.LB. 338, 1 female, 5.xii.2018; ZSUK.LB. 339 & ZSUK.LB. 340, 2 males, 31.xii.2018. All examples collect from the Shivaji University campus, Kolhapur (16°40'32.6"N 74°15'21.7"E) by P. B. Patil.

Diagnostics: Male: length-3.38 mm, width-2.50 mm; female: length-3.65 mm, width-3.02 mm.



Image 1. *Illeis bielawskii*. a- dorsal view, b- ventral view, c- note the ventral view of head showing maxillae, d- note the tarsal claw, e- bifid mandible, f- clubbed antenna, g- note the leg with pseudotrimerous tarsae.

Elytra are whitish yellow at marginal side. Middle part is semitransparent, so that the wings lying beneath the elytra, appears gray. The elytral margin is transparent from anterolateral position to the apex. Pronotum creamish yellow, without any pronotal basal spots with anterolateral corners blunt. Pronotal margins are transparent through which eye spots are seen. Head yellow with prominent eyes. Maxillary palp of the maxilla is with large terminal segment. Mandibles apically bifid with a tooth at the base of prostheca, which is finely ciliate. The ventral side is fade yellowish. Elytral epipluron is whitish with a transparent elytral margin. Tarsal claw with basal tooth. Prosternum with a well-developed prosternal intercoxal process and a pair of carinae.

DISCUSSION

The species *I. bielawskii* was synonymized as *I. bistigmosa* by Iablokoff- Khnzorian^[8] and by Poorani^[2] in the checklist of Coccinellidae of Indian subregion. However, recently Poorani and Lalitha^[7] cleared that the species *I. bielawskii* is a valid species. This species *I. bielawskii* is reported only from Bangalore and Dharwar district, Karnataka, India by Ghorpade.^[5] In the Fauna of Maharashtra, Jadhav and Sharma^[3] reported *I. cincta* but no *I. bielawskii*. Hence, the occurrence of this species in Kolhapur, which is a part of the Northern Western Ghats becomes a new record for the Maharashtra, India. According to Ghorpade,^[5] *I. bielawskii* is found to breed abundantly in nature on powdery mildew (*Oidium* sp.) and also observed feeding on undetermined powdery mildews attacking *Ricinus communis* L., *Morus alba* L., *Rosa* sp., *Capsicum anuum* L. and *Xanthium strumarium* L. The report of *I. bielawskii* on *M. alba* during present study supports the observations of Ghorpade.^[5] Studies regarding effectiveness of *Illeis* species, *I. cincta* and *I. bistigmosa* in biological control of powdery mildew showed that these coccinellids are more efficient than that of fungicides and neem oil spray.^[9] The mycophagous coccinellids, *Psyllobora vigintiduopunctata*^[10] and *P. bisoctonotata*^[11] are important biocontrol agents and can feed on fungi which may contribute in the development of biological methods

to reduce damage caused by powdery mildew. The species *I. bielawskii* can also be beneficial as a biological control agent in an Integrated Pest Management program.

CONCLUSION

The report of *I. bielawskii* from the new locality, i.e. Shivaji university campus, Kolhapur is an addition to the Coccinellid Fauna of Maharashtra, India.

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