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PARASITES OF *LEUCINODES ORBONALIS* GUENEE FROM MANIPUR

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ABSTRACT

***Leucinodes orbonalis* Guenée (Lepidoptera: Crambidae) is a serious pest of brinjal. During the field observations, a solitary larval parasitoid of *L. orbonalis* viz., *Trathala flavoorbitalis* (Cameron) (Hymenoptera: Ichneumonidae) was osberved. The present study reports larval parasitism of *L. orbonalis* with 6% field parasitism by *T. flavoorbitalis* in Manipur.**

Key words: *Leucinodes orbonalis*, *Trathala flavoorbitalis*, brinjal, larval parasitism, first observation, Manipur

Leucinodes orbonalis Guenée (Lepidoptera: Crambidae) is one of the most notorious pests of brinjal in South and South East Asia; well recorded from India, Bangladesh, Malaysia, Philippines and Sri Lanka (Srinivasan, 2008). For the ecofriendly management use of biological control agents are promising. The genus *Trathala* Cameron has 101 species recorded worldwide (Choi et al., 2014). *Trathala flavoorbitalis*, with type locality from India (Deesa) was originally described as *Tarytia flavo-orbitalis* (Cameron, 1907). This is a well-known parasitoid of *L. orbonalis* and has been documented from Bihar, Tamil Nadu and Karnataka, respectively (Malik et al., 1988; Yasodha and Natarajan, 2006; Murali et al., 2017; Ranjith et al., 2020). This parasitoid species is well distributed globally and is known from the Afrotropical, Australasian, Eastern Palaearctic, Nearctic, Oceanic, and Oriental regions; quite widespread through Indo-Pacific and Eastern Oriental region (Rousse and Villemant, 2012). This parasitic wasp was introduced without establishment into USA and Canada for biological control.

MATERIALS AND METHODS

During 2020-21, surveys were undertaken in the Haorokchambi Leirak, Imphal district of Manipur (24º47'26.3"N,93º55'22.2"E) for checking the infestation and natural parasitism of *L. orbonalis*. During the field observations, a solitary larval parasitoid of *L. orbonalis* viz., *Trathala flavoorbitalis* (Cameron) (Hymenoptera: Ichneumonidae) was noticed. The emerged adult wasps were preserved in 70% alcohol for taxonomic identification. The parasitoids were collected in the laboratory by rearing field collected larvae of *L. orbonalis* in Manipur during December, 2020, with brinjal fruits as diet (28.0°C, 78%RH). The voucher specimens were sent to the National Insect Museum of ICAR-National Bureau of Agricultural Insect Resources (NBAIR) for identification. The morphological studies were carried out in Leica stereozoom SZM S9i microscope.

RESULTS AND DISCUSSION

Trathala flavoorbitalis is known to have numerous hosts belonging to Lepidoptera (Gelechoidea, Noctuoidea, Pyraloidea, Tineoidea and Tortricoidea) (Rousse and Villemant, 2012) and has been reported as a noticeable parasitoid of *Maruca vitrata* (F.) from India (Gupta et al., 2013). The parasitism of *T.flavoorbitalis* in the Indian eggplant fields varies from 3.57-9.06% in Bihar (Malik et al. 1988) up to 40% in Karnataka (Ranjith et al., 2020). *Trathala flavoorbitalis* has a variable colour pattern, mostly orange (appears brown in the dried specimens). It can be identified by yellow scutellum; propodeum yellowish brown in posterior half to brown in anterior half; metasoma with first and second tergites black to dark brown in colour remainder orange-yellow; brownish yellow antennal flagellomeres; ocellar region and rear of vertex black, and apex of hind tibia with dark brown band and wings hyaline. The present study reports revealed that the antenna is longer than the head with 4.916 mm long with the wings 4.396 mm long. *Trathala*

spp. are larval parasitoids of many economically important agricultural pests. The present study reports larval parasitism of *L. orbonalis* with 6% natural field parasitism by *T. flavoorbitalis* in Manipur.

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