

Research Article



New record of *Chiasmia emersaria* (Walker, 1861) (Lepidoptera: Geometridae) from Jamshedpur, Jharkhand (India), with distribution and host plants

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ABSTRACT

The present communication deals with the new record of *Chiasmia emersaria* (Walker, 1861), a geometrid moth, from Jamshedpur, Jharkhand (India), with its systematic account, distribution, host plants and natural control measure.

Keywords: New record, *Chiasmia emersaria*, Jamshedpur.

INTRODUCTION

The moth fauna of Jharkhand has attracted the attention of various workers during the past (Sambath, 2009, 2014; Thakur & Ghosh, 2012a, b; Thakur *et al.* 2012; Thakur, 2013; Singh & Ranjan, 2014, 2016; Singh, 2014, 2015, 2016, 2019; Nigam *et al.*, 2016; Singh & Ahmad, 2017; Singh *et al.*, 2017a, b; Husain *et al.*, 2020, in press; inaturalist) but no published record on *Chiasmia emersaria* (Walker, 1861), the Little Chiasmia, belonging to family Geometridae, from Jamshedpur is available. Recently a good specimen of the same has been sighted and photographed from a residential area in Jamshedpur city which has been recorded here as new to Jamshedpur.

STUDY AREA: JAMSHEDPUR, JHARKHAND

Physiography: Jamshedpur (22°47'33" N and Long. 86°11'03") is located at the confluence of Kharkai and Subarnarekha rivers in East Singhbhum district of Jharkhand, with an av. elevation of 135 m. It is dotted with a number of lakes, Dimna and Sitarampur being the major ones. It has many parks, Jubilee the largest, which attract insect life, especially the moths and butterflies.

Climate: Tropical wet and dry with hot summers (max. 47.7°C in May), cold winters (min. 3.9°C in Jan.), heavy rainfall (av. 316.5 mm in July) and high relative humidity (av. 81% in August).

Flora: Deciduous forest cover, making about 33% of total area.

Butea monosperma, the Palash (Leguminosae), *Gmelina arborea*, the Gamhar (Lamiaceae), *Shorea robusta*, the Sal (Dipterocarpaceae), *Madhuca longifolia*, the Mahua (Sapotaceae), *Phyllostachys edulis*, the Bamboo

(Poaceae) etc. are the main trees; shrubs also form the major part.



Figure 1. *Chiasmia emersaria*, the Little Chiasmia from Jamshedpur (Jharkhand)

CHIASMIA EMERSARIA (WALKER, 1861)

Systematic account and Distribution

Synonymy:

Macaria emersaria Walker, 1861. *List Spec. Lepid. Insects Colln. Br. Mus.*, 23: 925 (type-locality: Hindostan; Silhet); Hampson, 1895. *The Fauna of British India including Ceylon and Burma. Moths*, 3: 207-208.

Semiothisa emersaria Walker, 1861. (vide <https://eol.org/pages/415474>).

Godonela emersaria, Holloway, 1993. *Moths of Borneo*, 11 (Family Geometridae, Subfamily Ennominae): 166 (notes).

Chiasmia emersaria, Shubhalaxmi *et al.*, 2011. *J. Bombsay nat. Hist. Soc.*, 108 (3): 194; Arandhara *et al.*,

2017. *Journal of Entomology and Zoology Study*, 9 (6): 1616; Kumar et al., 2018. *Asian J. Adv. Basic Sci.*, 6 (1): 50; Sanyal et al., 2018. *Insecta : Lepidoptera (Moths)*. In: *Faunal diversity of Indian Himalaya*: 289; Shubhalaxmi, 2018. *Birdwing Field Guide to Indian Moths*: 207, pl. 71, fig. 1; Pathre et al., 2019. *International Journal of Basic and Applied Research*, 9 (3): 634; Moinudheen & Sivasankaran, 2020. *International Journal of Scientific Research in Biological Sciences*, 7 (3): 56.

Common Name: Little Chiasmia.

Classification: Order Lepidoptera, superfamily Geometroidea, family Geometridae, subfamily Ennominae, tribe Macariini, genus *Chiasmia* Hubner, 1823 (type-species: *Phalaena clathrata* Linnaeus).

Material Examined: 1 example; Jamshedpur city, East Singhbhum district, Jharkhand; 26.x.2020 (photograph by 2nd author, HJH).

Diagnostic Features: Greyish moth with brownish speckles above; antennae filamentous; hind tibia dilated in male.

Colouration: Head, thorax and abdomen brownish; abdomen with dark spots above; fore-wings with notched apical angle, with sub-basal dark speck, indistinct oblique ante-medial, medial and post-medial lines angled below costa and arising from reddish-brown patches or short bands on costa, a dark speck at cell end, post-medial line with a brownish costal patch beyond it and disintegrated dark patch at vein 4, outer area slightly darker, margin reddish-brown below apex, outer margin prominently angled at vein 4; hind-wings triangular, with indistinct an ante-medial line, a dark spot at cell end, a waved dark post-medial line with brown and grey suffusion beyond it, a marginal dark line; both wings with veins on outer area pale; ventral side with broad brownish post-medial band with crenulate outer edge.

Wing-span: Male 32 mm, female 40 mm (Hampson, 1895: 207-208; Shubhalaxmi, 2018; inaturalist; wikipedia); male 31 mm (Gurule, 2013/indiabiodiversity); 26-32 mm (taeol.tw).

Caterpillar: Orange at tips, purplish-brown at centre with white horizontal lines (Shubhalaxmi, 2018).

Altitudinal Range: 2,000-2,100 m at Ansuya, Kedarnath Wildlife Sanctuary, Chamoli-Rudraprayag districts, Uttarakhand (Dey, 2018); av. 1,000 m at Nilgiri Biosphere Reserve, Nilgiri dist. (Moinudheen & Sivasankaran, 2020).

Distribution:

Jharkhand, East Singhbhum district: Jamshedpur city (present new record); Sonari town (inaturalist).

Rest of India: Andhra Pradesh (Tirupati dist.). Assam (Jorhat, Cachar, Golaghat, Harisinga Darrang, Karimganj, Sonitpur and Tinsukia dists.), Chhattisgarh (Bastar, Gariaband, Jashpur, Raipur dist.), Gujarat (Bhavnagar, Vadodara and Valsad dists.), Himachal Pradesh (Bilaspur, Shimla and Solan dists.), Karnataka (Bengaluru Urban, Bengaluru Rural, Chikkamagaluru

[Devanur and Kudermukh National Park], Davanagere, Kodagu [Coorg], Sirsi and Uttara Kannada dists.), Kerala (Idukki, Kannur, Kottayam, Palakkad, Thrissur and Wayanad dists.), Maharashtra (Ahmednagar, Gadchiroli, Mumbai City [Maharashtra Nature Park], Mumbai Suburban, Navi Mumbai, Palghar, Pune [Bhimshankar Wildlife Sanctuary], Raigad, Ratnagiri and Thane dists.), Nagaland (Kohima), Odisha (Koraput dist.), Puducherry (Kalapet town), Tamil Nadu (Chennai, Mayiladuthurai, Nagapattinam, Nilgiri, Salem and Vellore, Virudhunagar dists.), Telangana (Hyderabad dist.), Uttarakhand (Dehra Dun dist.) and West Bengal (Bankura, Birbhum, Darjeeling, Kolkata, Nadia, South 24 Parganas and Paschim Bardhaman dists.) (inaturalist; mothsofindia; others).
Elsewhere: Bangladesh (Dhaka), Bhutan, China, Hong Kong, Japan (with Ryukyu Islands), Myanmar, Nepal, Singapore, Sri Lanka, Taiwan and Thailand.
Habitat: Low-altitude forest belts, Chir-pine forests, adult remains camouflaged among leaf litter.

HOST PLANTS

(Refs. Banziger & Fletcher, 1988; Chey et al., 1993; Holloway, 1993; Robinson et al., 2010; Bell (vide mothsofborneo).

Cassia renigera, the Burmese Pink Cassia; *Delonix regia*, the Flame Tree, *Gulmohar*, (*Caesalpinaceae*).

Elaeagnus latifolia, the South Indian Wild Olive (*Elaeagnaceae*).

Albizia procera, the White Siris; *Falcataria molucciana* (= *Paraserianthes falcataria*), *Pithecellobium dulce*, the Manila Tamarind (*Fabaceae*).

CONTROL MEASURES IN NATURE

Some spiders and parasitoid wasps help in its control in natural way.

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