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Diversity, host association, and cocoon variability of reared Indian Microgastrinae (Hymenoptera: Braconidae)

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Abstract

Nearly 3,500 specimens of microgastrine wasps (Hymenoptera: Braconidae) were reared during caterpillar surveys undertaken in 2010-2013 across India, covering 16 States and one Union Territory (Andaman & Nicobar islands), and deposited in the National Bureau of Agriculturally Important Insects, Bangalore, India. The caterpillar inventory recovered over two hundred morpho-species within 22 families of Lepidoptera and yielded 90+ morpho-species of microgastrine wasps distributed among 13 genera: *Apanteles* Förster, *Buluka* de Saeger, *Cotesia* Cameron, *Diolcogaster* Ashmead, *Distatrix* Mason, *Dolichogenidea* Viereck, *Fornicia* Brulle, *Glyptapanteles* Ashmead, *Microgaster* Latreille, *Microplitis* Förster, *Neoclarkinella* Rema & Narendran, *Parapanteles* Ashmead, and *Protapanteles* Ashmead. Records of hyperparasitoids are also included: *Mokrzeckia menzeli* Subba Rao (Pteromalidae), *Pachyneuron groenlandicum* (Holmgren) (Pteromalidae), *Pediobius foveolatus* (Crawford) (Eulophidae), *Trichomalopsis thekkadiensis* Sureshan & Narendran (Pteromalidae), *Eurytoma* sp., and *Pediobius* sp. (Eurytomidae). The present study adds eight new host records and provides illustrations of 40 species of wasps (including types). A comprehensive list of microgastrine genera, host caterpillar species, host plants, cocoon colour, structure and spinning pattern, and hyperparasitoids is provided. Numerous photographs of parasitized caterpillars, cocoons (number/arrangement), associated host plants, and adult wasps are also provided. The Indian species *Deuterixys ruidus* (Wilkinson, 1928) is transferred to the genus *Cotesia* based on the shape and sculpture of the first and second mediotergites: *Cotesia ruidus* (Wilkinson) **comb. nov.** *Microgaster carinicollis* Cameron is transferred to *Microplitis*, based on examination of first and second mediotergites, length of metatibia spurs, and size of metaxocoxa: *Microplitis carinicollis* (Cameron) **stat. rev.**

Key words: Hymenoptera, Braconidae, India

Introduction

Microgastrinae (Hymenoptera: Braconidae) is one of the most important groups of Lepidoptera parasitoids. It is also one of the most diverse –Rodriguez et al. (2012) estimated the species richness of the group ranging from 17,000 to 46,000+ species.

Microgastrinae wasps are endoparasitoids of caterpillars, and species are usually gregarious or solitary (although, occasionally, one wasp species can be solitary or gregarious depending on the size and species of the host caterpillar). Generally, each microgastrine wasp species has a fixed cocoon spinning pattern, structure and colour, which is quite distinctive and helps in ascertaining its identity.

Mumbai—*Elymnias hypermnestra*; Mr. Swapnil Lokhande, IIT, Mumbai—*Phaedyma columella* & *Borbo cinnara*; Mr. Paresh V. Churi, Mumbai—*Spindasis vulcanus*, *Abisara echeria*; Mr. Ravi Bhambure, BNHS, Mumbai—*Amblypodia anita*, *Matapa aria* and *Pelopidas conjuncta*; Mr. Parag Giri—*Pieris canidia*; Mr. Abhishek Narvekar—*Troides minos*; Mr. Ashok Sengupta—*Euthalia lubentina* and Dr. J. Poorani, Principal Scientist, NBAII—*Cotesia flavipes* cocoons.

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