



Inventory of butterfly fauna (Lepidoptera: Rhopalocera) of Tripura, India, in the Indo-Myanmar biogeographical zone, with records of threatened taxa

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Abstract: The Tripura province of northeast India, situated in the western fringe of the Indo-Myanmar biodiversity hotspot was extensively explored for butterfly fauna. We surveyed 28 wild and managed locations in the hot and humid environment of Tripura province (2009–2012) across different landscape gradients to observe and record butterfly diversity. We report here 212 butterfly species, 65 of which are considered threatened including 41 species protected by Indian Wildlife Protection Act 1972. Thirty-eight species are categorized as threatened by IUCN including one species also by CITES. We recorded the abundance of each butterfly species to highlight the population status of individual butterfly species in order to reveal the status of their conservation in Tripura, in India, and also at global scale. Geographic distribution of 142 species is extended to Tripura. Results of this study form a baseline data on the diversity and conservation of butterflies in this biodiversity hotspot.

Key words: butterfly, conservation, northeast India, threatened species, Tripura

INTRODUCTION

Insects constitute more than half of the world's known biodiversity (May 1992), perform multidirectional activities, viz., pollination, energy transformation, seed dispersal, and contribute to the productivity and stability of ecosystem (Naeem et al. 1994; Tilman et al. 1996). This is particularly true for tropical regions where insects show high abundance and species diversity (Samways 2005; Spector 2006). Among insects, butterflies are a taxonomically well studied group throughout the world (Ghazoul 2002) and are indicator taxa in terms of habitat quality and anthropogenic disturbance (Kocher and Williams 2000). More than 18,000 butterfly species have been documented worldwide (Heppner 1998; Larsen

et al. 2011; Martinez et al. 2003) including 1501 species reported from India (Kehimkar 2008). Northeastern parts of India, consisting of eight provinces and having an area of 1,61,419 km², shares about 65% of butterfly diversity of India (Haribal 1992; Gupta and Majumder 2006; Gupta and Maulik 2007; Gogoi 2012; Kunte et al. 2012). However, in geographical scale and in terms of species richness, the Tripura province (area: 10,491 km²) had 72 species known (Agarwala et al. 2010; Majumder J. et al. 2012b; Roy Choudhury et al. 2011). This is far less in comparison to Sikkim, a smaller province having an area of 7,092 km² but with 695 species of butterflies known (Haribal 1992).

Tripura province of northeastern India is situated in the western fringe of Indo-Myanmar global hotspot (Mittermeier et al. 2005; Tordoff et al. 2012). It is rich in forests (ca. 57.73% of the total land area) and is dominated by semi-evergreen to moist deciduous plants and secondary bamboo brakes (Majumdar K. et al. 2012a). The richness of biodiversity of the province is evident from occurrence of 1,583 plant species belonging to 862 genera in 193 families (Deb 1981–1983; Majumdar K. et al. 2012b), 90 species of mammals (Gupta 1998), 17 species of amphibians, 35 species of reptiles (Majumder J. et al. 2012a) and 300 species of birds (Choudhury 2010; Bhattacharjee et al. 2013). Tripura province is unique due its location at the confluence of Indo-Myanmar, Indo-Malayan and parts of Indo-China geographical regions with close proximity to Bangladesh. The presence of mighty Brahmaputra River, originating in China and flows through Assam in the north and east of Tripura, acts as a barrier for gene flow from south-east Asian provinces, including Tripura (Datta-Roy et al. 2012).

To bridge the gap of information on the butterfly fauna, a sustained exploration was undertaken from June 2009 to December 2012 across different habitat gradients of the province.

