Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

Journal of Entomology and Zoology Studies

**E-ISSN: 2320-7078**
**P-ISSN: 2349-6800**
JEZS 2017; 5(4): 53-56

Received: 09-05-2017
Accepted: 10-06-2017

**Dipak Das**
Biodiversity Laboratory,
Department of Zoology
Ramkrishna Mahavidyalaya
Kailashahar, Tripura, India

**Correspondence**
**Dipak Das**
Biodiversity Laboratory,
Department of Zoology
Ramkrishna Mahavidyalaya
Kailashahar, Tripura, India

# New distribution record of peacock royal butterfly *Tajuria cippus cippus* (Fabricius, 1798) (Lepidoptera: Lycaenidae) From Tripura, North-East India

## Dipak Das

**Abstract**
During the documentation of butterfly diversity in the west district of Tripura, North East India the Peacock Royal butterfly *Tajuria cippus cippus* (Fabricius, 1798) was identified for the first time from Tripura province of Indo-Burma biodiversity hotspot. Therefore, one new species of butterfly (Lepidoptera) was added to the Tripura faunal records.

**Keywords:** Lepidoptera**,** *Tajuria cippus cippus*, new record, Tripura, North East India

## Introduction
Among insects, butterflies are unquestionably the most popular and best-known group as they are one of the most amazing and magnificent elements of biodiversity [1]. Their faunistic assessment, occurrence and characteristics provide crucial information about environmental quality of a particular region of ecosystems as they are sensitive to minute level of ecological changes. They having brightly colourful insects and belonging to order Lepidoptera, the second largest order after Coleoptera of class Insecta and distribution of them depends upon habitat structure and availability of their food plants [2]. Butterflies are of most ecological significance and they have been considered as indicators of the health of an ecosystem. Changes in abundance and distribution of butterflies have been linked to a range of factors, including habitat loss and fragmentation, land use and climate changes [3].
Although insects are the largest group of animal kingdom and butterfly is the key creature of this group, but lacking of sufficient study in term of their distribution pattern, life cycle, ecology they advocate broad spectrum of study in future. India subcontinent classified mainly under Oriental Region and partly under Palaearctic Region and having richest and most diverse butterfly faunas of the world. India hosts 1,501 species of butterflies [4]. Northeast India, the parts of Eastern Himalayas, is one of the most important hotspot of biological diversity including butterflies. More than 85% of butterfly species that occur in the Indian 'sub-continent' and Myanmar region. The great diversity of plants, habitats and topography are the major influences on the butterflies distribution, diversity and abundance in Eastern Himalayan region [5]. Several records are available in concern of certain aspects of butterflies of North East- India, but the major records are available for the Arunachal Pradesh and Assam only and few studies are available for Tripura province of northeast India, situated in the western fringe of the Indo-Myanmar biodiversity hotspot.
Effort was made by host of investigators for exploring butterfly faunal composition from northeastern parts of India [6, 7, 8, 9, 10, 11, 12, 13] and large scale studies was done in Tripura state of Northeast India [14, 15, 16, 17, 18, 19].

## Materials and Methods
### Study area
The present reportis the first photographic record of the Peacock Royal butterfly *Tajuria cippus cippus* (Fabricius, 1798) from Tripura, a state of northeastern region of India on the morning of 11 January, 2016 at around 12:23 hrs during the regular field surveys as a part of animal diversity assessment study near Tripura University Campus (A Central University), Suryamaninagar, Agartala (extends between $23^0 45' 18.66''$ N and $91^0 15' 56.72''$ E) and elevation level of 24m.

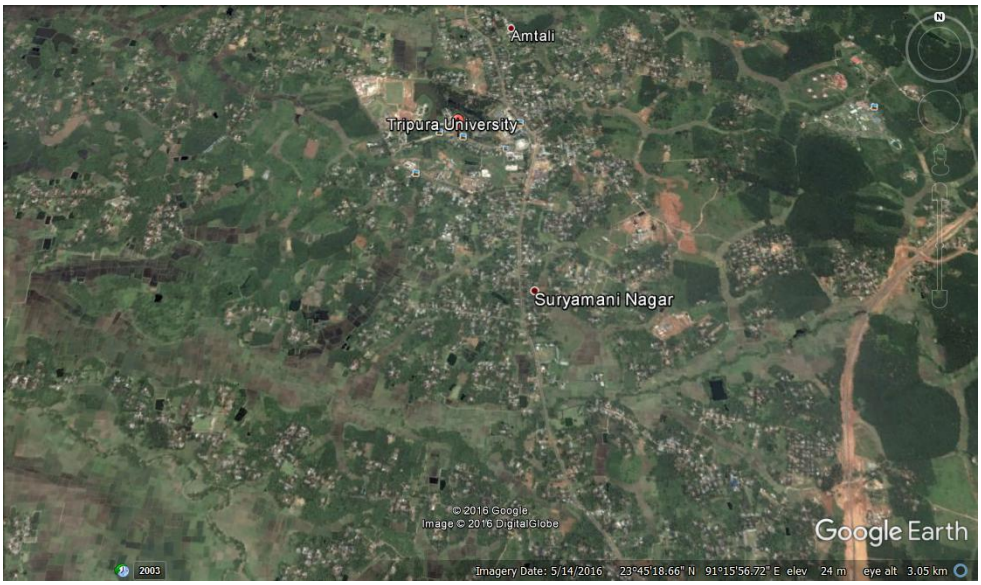


**Fig 1:** Location of the study area

## Methods

Photograph was taken of one individuals with the help of high resolution digital camera(NIKKON COOPIX P610) and specimen was identified as female individual of Peacock Royal butterfly *Tajuria cippus cippus* (Fabricius, 1798) followed by identification key [11, 12].

## New locality habitat description

The study area is located in the human inhabited area of Suryamaninagar, near Tripura University Campus (latitude:N23$^0$45′32.60″, longitude: E91015′54.86″) in the West Tripura district of Tripura and is a part of the western fringe of the Indo-Burma biodiversity hotspot. The vegetation complex of the area is characterized by dry-deciduous secondary forest, patches of bamboo and scattered plants. The province has a tropical climate, with four distinct seasons: winter (late November to February), summer (March to May), monsoon (June to September) and autumn (October to November). The temperature ranging from 10$^0$C-35$^0$C and experiences an average annual rainfall from 2000-2500mm.

## Field observations

The butterfly was firstly sighted on the leaf of *Microcos pediculate,*an herbal wild plant and after few moments it was visited to nearby *Chromolaena odorata* (L.) flowers and started collecting nectar from them. The flight is very weak.

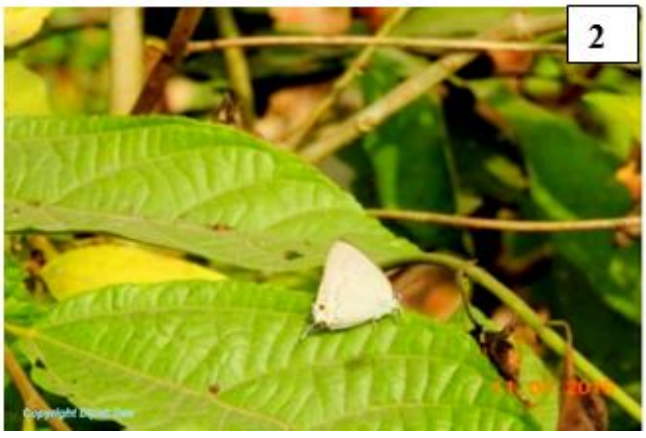


**Fig 2:** Closed wing view of resting condition on leafs of *Microcos pediculate*


**Fig 3:** The open wing view of resting condition on leafs of *Microcos pediculate*


**Fig 4:** The closed wing view of during nectar collecting from *Chromolaena odorata* (L.) flowers.


**Fig 5:** Open wing view of during nectar collecting from *Chromolaena odorata* (L.) flowers

**Physical description of adult butterfly**

On the upper side, the specimen was light pale blue and has a post-discal and a marginal series of black spots on its hind wings, whilst the underside was greyish white. Both wings has a post-discal series of black, disjoint striae and diffuse marginal and sub marginal fasciae. The hind wing has two large, black tornal spots in spaces 1a and 2 and a short tooth at end of vein 3.

**Previous distribution range**

It is an uncommon, non-threatened species native to India, Pakistan, Nepal, Bhutan, Bangladesh, Mayanmar, Sri Lanka [11, 20, 21, 22]. In India it occurred in Karnataka, Tamil Nadu, Himachal Pradesh [23, 24, 25, 26].

**Discussion**

The Indian subcontinent hosts about1504 species of butterflies [28] which constitute 65% of total Indian fauna. The exact status of butterflies of Northeast India particularly of Tripura is still not clearly known due to lack of extensive study. The details study of Lodh and Agarwala (2015) recorded 212 butterfly species for Tripura province [15]. The diversity and abundance of butterfly species highly correlated with the availability of food plants and varied assemblage of floral species in the surroundings [12]. *Chromolaena odorata* with these floral structural and functional characteristics attract butterflies. The patchy distribution of the plant with numerous flowering heads facilitates frequent movement of butterflies between different individuals. In the previous study it was reported that *C. odorata* is an important source of nectar for adult butterflies in Seshachalam Hills of Southern Eastern Ghats of Andhra Pradesh, India [27] and in the present study it was also observed that use this plant as a source of nectar.The interesting findings of the present study are that females come to flowers (*C. odorata*) for nectar source utilization which is deviation from earlier reports where only male remain busy for nectar collection [11]. The distribution of the species in the Southeast Asia is limited in few countries only. In India, the state of Karnataka, Tamil Nadu, Himachal Pradesh represent most abundant range of distribution and extend up to some parts of north eastern states.

The heterogeneous complexity of the habitat of the study area supports rich faunal diversity. Potential threats anthropogenic activities including intense encroachment stress from urban expansion, alteration of agricultural lands to monoculture rubber plantation etc. presently acting as potential threats. Detailed ecological studies along with its distribution range in other parts of Tripura would further help in conservation purpose of this important species.

**Acknowledgement:**

Author is grateful to college authority of Dasaratha Deb Memorial College, Khowai (previous working place) and Ramkrishna Mahavidyalaya, Kailashahar for providing necessary research facility and also thanks to one of his graduate student Mr. Dhiman Datta and Mr. Chiranjit Paul, Research Scholar, Deptt. of Forestry and Biodiversity, Tripura University during identifying the butterfly and plant voucher specimens. Thanks are also due to Dr. Sudipta Mandal, Deptt. of Zoology, Dasaratha Deb Memorial College, Khowai for his continuous inspiration to carry out this study.

**References**

1. Ghazoul J. Impact of logging on the richness and diversity of forest butterflies in a tropical dry forest in Thailand. Journal of Biodiversity Conservation. 2002; 11:521-541.
2. Abideen AA, James OG, Samuel M. Butterfly Species Diversity and Abundance in University of Ibadan Botanical Garden, Nigeria. Journal of Ecology. 2015; 5:352-360.
3. Thomas JA, Simcox DJ, Wardlaw JC, Elms WG, Hochberg ME, Clark RT. Effects of latitude, altitude and climate on the habitat and conservation of the endangered butterfly *Maculinea arion* and its *Myrmica* ant host. Journal of insect conservation. 1998; 2:39-46.
4. Gaonkar H. Butterflies of the Western Ghats, India, including Sri Lanka: Biodiversity assessment of a threatened mountain system, Centre for Ecological Sciences, Indian Institute of Science, Bangalore and the Natural History Museum, London. 1996, 18.
5. Mani MS. Butterflies of Himalaya. Oxford and IBH, New Delhi. 1986.
6. Doherty W. Notes on Assam butterflies. Journal of Asiatic society of Bengal. 1889; 58:118-134.
7. Betts FN. On the Collection of Butterflies from the Balipara Frontier Tract and the Subansiri Area (Northern Assam). Journal of Bombay natural historical society. 1950; 49:487-501.
8. Cantlie K. More butterflies of the Khasi and Jaintia hills, Assam. Journal of Bombay natural historical society. 1952; 51:42-60.
9. Saikia KM, Saikia PK. Ecology of Butterflies in tropical scattered forest of Manas biosphere reserve, Assam, India. Journal of Global Biosciences. 2014; 3(3):660-680.
10. Saikia KM. Impact of tropical forest degradation on Nymphalid butterflies: a case study in Chandubi tropical forest, Assam, India. International Journal of Biodiversity and Conservation. 2011; 3(12):650-669.
11. Kehimkar I. The Book of Indian Butterflies. Oxford University Press, Mumbai, India. 2008.
12. Kunte K Butterflies of Peninsular India. Universities Press, Hyderabad, India. 2000.
13. Gupta IJ, Shukla JPN. Records of the Zoological Survey of India. Occasional Paper No. 109. Studies on the Butterflies of Arunachal Pradesh and adjoining areas, India (Lepidoptera: Acraidae, Satyridae, and Lycaenidae). Edited by the Director Zoological Survey of India. 1988.
14. Mondal DK, Ghosh SK, Majumder M. Fauna of Tripura. In: State Fauna Series 7. Zoological Survey of India. 2002, 283-334.
15. Lodh R, Agarwala BK. Inventory of butterfly fauna (Lepidoptera: Rhopalocera) of Tripura, India, in the Indo-Myanmar biogeographical zone, with records of threatened taxa. Checklist. 2015; 11(2):1591.
16. Lodh R, Agarwala BK. Rapid assessment of diversity and conservation of butterflies in Rowa Wildlife Sanctuary: An Indo-Burmese hotspot, N.E, India. Tropical Ecology. 2016; 57(2):231-242.
17. Agarwala BK, Choudhury SR, Choudhury PR. Species richness and diversity of butterflies in urban and rural locations of north-east India. Entomon. 2010; 35:1-5.
18. Majumder J, Lodh R, Agarwala BK. Variation in butterfly diversity and unique species richness along different habitats in Trishna Wildlife Sanctuary, Tripura, northeast India. Check List. 2012; 8:432-436.
19. Majumder J, Lodh R, Agarwala BK. Butterfly species richness and diversity in the Trishna Wildlife Sanctuary in South Asia. Journal of Insect Science. 2013; 13:1-13.

20. Singh AP. Lowland forest butterflies of the Sankosh River catchment, Bhutan. Journal of Threatened Taxa. 4(12):3085-3102.
21. Rahman S, Baki MA, Mondal AC, Neogi AK, Islam F, Sutradhar RC. Checklist of butterflies of Kushtia District, Bangladesh. Journal of Entomology and Zoology Studies. 2015; 3(2):365-373.
22. Asela MDC, Peiris RAK, Priyankara SKIU, Jayasekara RW, Karunarathna DMSS. Some notes on the butterflies (Lepidoptera: Papilionoidea) of Tantirimale Archaeological Site, Anuradhapura District, Sri Lanka. Journal of Threatened Taxa. 2009; 1(7):392-394.
23. Naik D, Mustak MS. A checklist of butterflies of Dakshina Kannada District, Karnataka, India. Journal of Threatened Taxa. 2016; 8(12):9491-9504.
24. Santosh S, Basavarajappa S. Butterfly diversity at agri-horticultural ecosystems under tropical conditions of Karnataka, India. The Ecoscan. 2015; 9(1-2):49-57.
25. Prabakaran S, Chezhin Y, Evangelin G, John William S. Diversity of butterflies (Lepidoptera: Rhopalocera) in Tiruvallur district, Tamilnadu, India. Biolife. 2014; 2(3):769-778.
26. Bogtapa S. Diversity of Butterflies from District Solan, Himachal Pradesh, India. Journal on New Biological Reports. 2015; 4(2):139-148.
27. Lakshmi PV, Raju AJS. *Chromolaena odorata* (L.) King & H.E. Robins (Asteraceae), an important nectar source for adult butterflies. Journal of Threatened Taxa. 2011; 3(2):1542-1547.
28. Tiple AD. Butterflies of Vidarbha region Maharashtra, India; a review with and implication for conservation. Journal of Threatened Taxa. 2011; 3(1):1469-1477.