

New larval host plant of the Copper Flash from Unakoti, Tripura, India

Butterflies and plants are closely associated as the larval stage and adult butterflies derive their food from green plant parts and nectar, respectively; while adult butterflies act as important pollinators. Therefore, documentation of larval host plants and nectary plants are as important as observation and recording butterfly diversity and distribution for the conservation of both plants and butterflies (Karmakar et al. 2018). The present study reports a new host plant for the tropical butterfly species Copper Flash *Rapala pheretima* (Hewitson, 1863) from Unakoti District of Tripura, northeastern India.

Copper Flash is a small sized butterfly belonging to the tribe Deudorigini, subfamily Theclinae and family Lycaenidae (Varshney 2015). *Rapala pheretima* is widely distributed among the Asiatic countries including India, Bangladesh, Nepal, Bhutan, and Myanmar (Kehimkar 2016). In India its population is mainly concentrated at Uttarakhand to northeastern Indian states (Varshney 2015). The species has also been reported from the states like West Bengal, Odisha, Andhra Pradesh, Madhya Pradesh, and Chhattisgarh (Mazumder et al. 2020).

Information regarding the larval host plant of the Indian subspecies of Copper Flash butterfly [*Rapala pheretima petosiris*] (Hewitson, 1863)] is very scanty. The only reported study (Karmakar et al. 2018) conducted in Javanti, Alipurduar District, West Bengal, India recorded that larvae of Copper Flash butterfly fed on floral buds and young leaves of Ziziphus sp. (Family: Rhamnaceae). As per information available in the website 'Butterflies of Singapore' (https://butterflycircle.blogspot.com) larvae of Copper Flash is polyphagous and fed on few locally available plant species in Singapore like Mangifera indica (Anacardiaceae), Hibiscus tiliaceus (Malvaceae), Syzygium zeylanicum (Myrtaceae), Mallotus paniculatus (Euphorbiaceae), and Saraca thaipingensis (Fabaceae).

Tripura is one of the seven northeastern Indian states which fall under the Indo-Burma Biodiversity Hotspot. Several studies have been conducted to document the diversity and distribution of butterfly species in Tripura (Mazumder et al. 2013; Lodh & Agarwala 2015; Agarwala & Mazumder 2020). But no comprehensive study has been carried out to document the early stages and larval host plants of the butterfly species found in Tripura.

During a field survey for documentation of butterfly diversity and larval host plant in Kailashahar area (24.3131°N, 91.9950°E) of





Google map showing location from where the caterpillar was collected.

Unakoti District, Tripura on 25 January 2019, a caterpillar of about 22mm length was found feeding on the leaves and young fruit of a cultivated short-lived perennial vine *Lablab purpureus* (Family: Fabaceae). The caterpillar had wide triangular to semi-circular yellow and pink dorsal patches and lime green to yellowishgreen broad triangular lateral patches. It seemed to be the final instar larva of some butterfly species. A weaver ant *Oecophylla smaragdina* was found in close association with the caterpillar. To confirm its identity and for further study, the caterpillar was carefully collected and brought to the laboratory for rearing. The caterpillar was kept in a plastic container in normal room temperature and given fresh leaves and young fruits of Lablab purpureus as food. The caterpillar ate voraciously for two days, and then it stopped feeding and entered into the pre-pupal stage as it settled under a hard surface. Gradually the pre-pupal stage transformed into a pupa with a drastic change in morphology and colouration. The surface of the pupa was a mixture of reddish and deep brown in colour and has numerous small dark speckles. The length of the pupa measured about 15cm. After 15 days, the pupa turned black initially in the wing pad and thoracic region and then in the abdominal part. The adult emerged the next morning. The upper side of the wings was copper red in colour with broad black apex and margins narrowly dark. Pale brown markings were present in underside of both the wings with broad cell-end bar and a brown post-discal band whitened on the outer side. The adult butterfly was identified as Copper Flash Rapala pheretima (Hewitson,





Larva of Copper Flash Butterfly on leaf of *Lablab purpureus*. © Nihar Chandra Deb.



Lablab purpureus, the newly reported larval food plant of Copper Flash Butterfly. © Nihar Chandra Deb.



Association of Copper Flash caterpillar and weaver ant. © Nihar Chandra Deb.



Pre-pupal stage. © Nihar Chandra Deb.



Pupal stage. © Nihar Chandra Deb.



Mature pupa just before emergence. © Nihar Chandra Deb.



Adult Copper Flash, open wing view. © Nihar Chandra Deb.

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Adult Copper Flash, close wing view. © Nihar Chandra Deb.



1863) using suitable keys (Evans 1932; Wynter-Blyth 1957; Kunte 2000; Kehimkar 2016). It was released into the wild after taking photographs for documentation. The present study clearly established *Lablab purpureus* as a larval host plant for *Rapala pheretima*. This finding adds a new plant species to the list of larval host plants for *Rapala pheretima* from India or abroad.

The Copper Flash butterfly is widely distributed in different parts of Tripura and can be seen throughout the year though maximum abundance is noted from October to March. *Lablab purpureus* is a short-lived perennial vine which is widely cultivated in Tripura during the winter months. The abundance of Copper Flash butterfly during the winter months strongly indicates that *Lablab purpureus* may be the principal larval food plant of this butterfly in this region. Therefore, findings of the present study may provide useful information in the conservation of butterfly diversity and setting up of butterfly gardens in this region.

References

Agarwala, B.K. & J. Majumder (2020). Butterfly Diversity Assessment in Protected Areas in Tripura, north eastern India. *Proceedings of the Zoological Society* 73: 68–81. https://doi.org/10.1007/s12595-019-00300-x

Evans, J.H. (1932). *Identification of Indian Butterflies*. Bombay Natural History Society, Mumbai, 454pp.

Karmakar, T., R. Nitin, V. Sarkar, S. Baidya, S. Mazumder, V.K. Chandrasekharan, R. Das, G.S.G. Kumar, S. Lokhande, J. Veino, L. Veino, R. Veino, Z. Mirza, R.V. Sanap, B. Sarkar & K. Kunte (2018). Early stages and larval host plants of some northeastern Indian butterflies. *Journal of Threatened Taxa* 10(6): 11780– 11799. https://doi.org/10.11609/jot.3169.10.6.11780– 11799. Kehimkar, I (2016). *Butterflies of India*. Bombay Natural History Society, Mumbai. xii+528pp.

Kunte, K. (2000). *Butterflies of Peninsular India.* Universities Press (Hyderabad) and Indian Academy of Sciences (Bangalore), 254pp.

Lodh, R. & B.K. Agarwala (2015). Inventory of butterfly fauna (Lepidoptera: Rhopalocera) of Tripura, India, in the Indo-Myanmar biogeographical zone, with records of threatened taxa. *Check List* 11(2): 1–37. https://doi. org/10.15560/11.2.1591.

Majumder, J., R. Lodh & B.K. Agarwala (2013). Butterfly species richness and diversity in the Trishna Wildlife Sanctuary in South Asia. *Journal of Insect Science* 13: 79.

Mazumder, S., T. Karmakar & D. Raju (2020). *Rapala* pheretima (Hewitson, 1863) Copper Flash. Kunte, K., S. Sondhi, & P. Roy (Chief Editors). *Butterflies of India*, v. 2.87. Indian Foundation for Butterflies. http://www.ifoundbutterflies.org/sp/713/Rapala-pheretima https://butterflycircle.blogspot.com/2013/11/life-historyof-copper-flash.html?m=1 (captured on 05.vii.2020)

Varshney, R.K. & P. Smetacek (eds.). (2015). A Synoptic Catalogue of the Butterflies of India. Butterfly Research Centre, Bhimtal and Indinov Publishing, New Delhi, ii+261pp, 8pl. https://doi.org/10.13140/RG.2.1.3966.2164.

Wynter-Blyth, M.A. (1957). *Butterflies of the Indian Region*. Bombay Natural History Society, 523pp.

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