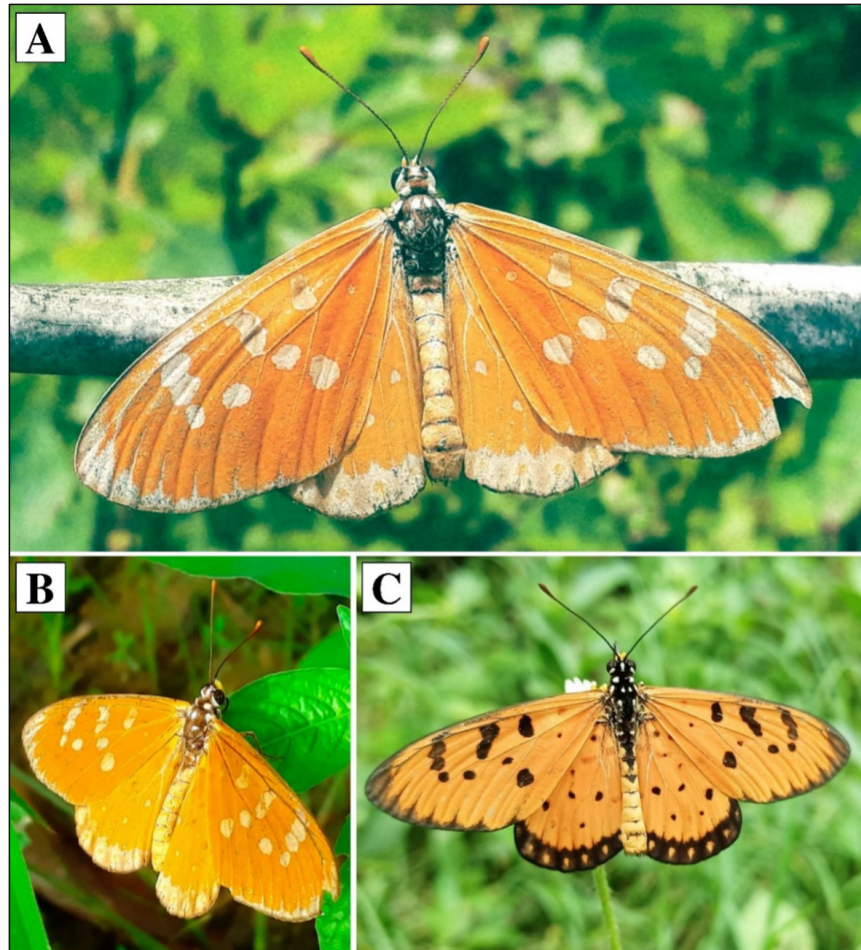


A rare aberration of Tawny Coster butterfly from Myanmar

Butterflies have a wide variety of patterns and colours on their wings, which are important for three basic survival aspects, camouflage for predator avoidance, thermoregulation and mate selection (Wang et al. 2020). Pigments' genesis and diversification have long been a perplexing subject and have been connected to a number of evolutionary aspects. Due to recent advancements in high throughput molecular screening, the interspecies and intraspecies variations of these colouration patterns have been holistically understood, and have been linked to several pigment proteins, regulatory RNAs, and epigenetic factors (Zhang et al. 2017). However, occasional genetic mutations can result in aberrant coloration or patterns. Such occurrences have important implications for understanding butterfly genetics and evolutionary adaptations but documenting them is rare (Chakrovorty et al. 2020).



Adult Tawny Coster butterfly *Acraea terpsicore* (Linnaeus, 1758), (A, B) Specimen with aberrant wing colouration, (C) Normal specimen. © Kyaw Khin.

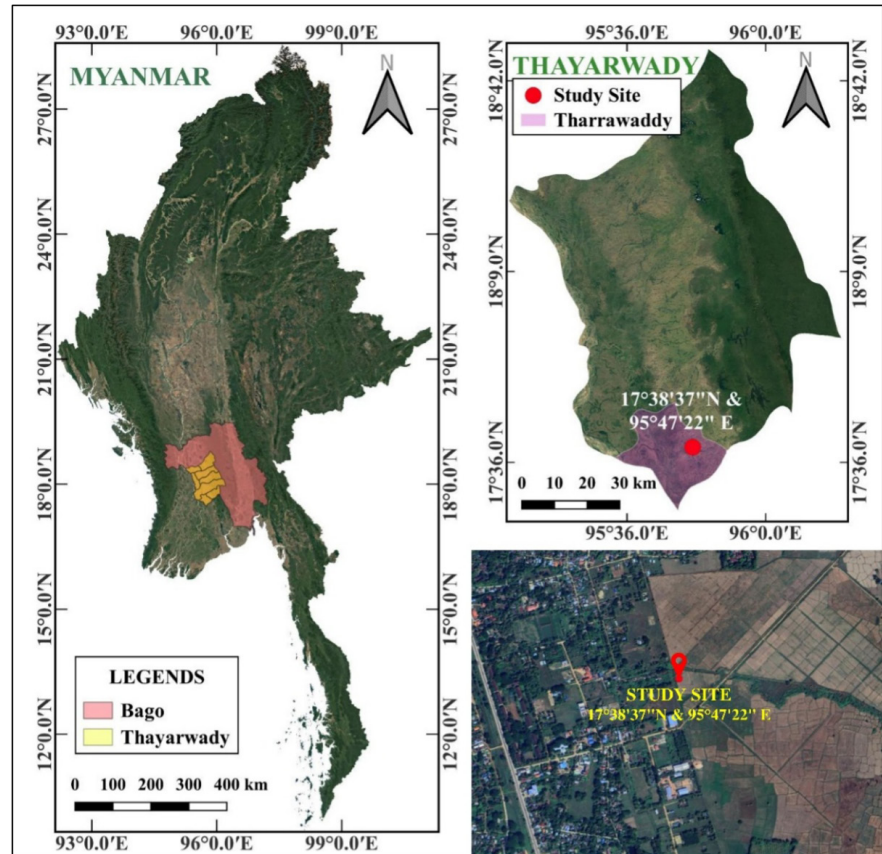
The Tawny Coster butterfly *Acraea terpsicore* (Linnaeus, 1758) (Lepidoptera: Nymphalidae: Heliconiinae: Acraeini) is a widely distributed species which ranges from southeast Asia to Oceania

(Kinyon 2004; Chowdhury et al. 2021). This study documents a rare aberration of the species which lacks the black pigmentation of the wing spots and discusses in detail the morphological features of



the documented species; however, the genetic basis of the aberration is out of the scope of this article.

Field observations were conducted in Thayarwaddy, western Bago region of lower Myanmar (17.64361111 & 95.78944444), where an aberrant *Acraea terpsicore* was documented on 23 July 2022. It was observed flying near grass and perching on a plant (~0.5 m) and an electric wire (~1.5 m). The specimen was photographed using Samsung SM-G610F and compared with standard



Map of the study area.

descriptions available in the literature (Bingham 1907; Kehimkar 2008). Other environmental conditions, behavioral aspects, and social relations with other butterflies were noted.

The documentation of similar aberrations was searched from digital databases and online portals like, The butterflies of India website, iNaturalist, Global Biodiversity Information Facility, Facebook, and Flickr. The map of the study area was created using QGIS v3.28.2 software (<https://qgis.org>), EPSG Registry database version v10.076 (31.08.2022). The shapefile of administrative boundary of Myanmar was downloaded and appropriate

plugins were used to render the district and study site images (Chakrovorty et al. 2023).

Systematic Position

Order: Lepidoptera Linnaeus, 1758

Superfamily: Papilionoidea Latreille, 1802

Family: Nymphalidae Rafinesque, 1815

Subfamily: Heliconiinae Swainson, 1822

Tribe: Acraeini Boisduval, 1833

Genus: *Acraea* Fabricius, 1807

Species: *Acraea terpsicore* (Linnaeus, 1758)

Acraea terpsicore (Linnaeus, 1758) (syn. *A.*

violae) can be identified from the combination of following characters, basal and discal marking on hindwings (HW) present with marginal

spots, HW discal dots separated and placed more basal than the spots below it, discal dot on cubital vein 2 not in line with discal dots in anal and cubital vein 1, forewings (FW) completely scaled and abdomen yellow with black bands (Bingham 1907; Van Son 1963). *Acraea terpsicore* has a tawny upper side. FW have a black marginal area with triangle like projections that increases in size from tornus towards apex, apex completely black. A black oblique spot is present in post-basal area of FW cell above the point from where cubital vein bifurcates. Another oblique spot lies over discocellular area, below this lies another spot in postmedial region of area 3 and area 4. Three irregular dots near subapical area are sometimes connected giving the appearance of an oblique streak. In area 1b, one small dot-like spot is present on post-basal area and another bigger spot is present near postmedian area.

HW have a black marginal border with series of whitish-orange submarginal spots. Three black spots are present on cell near basal area, post-basal area and on discocellular area (origin of the first cubital vein) respectively. Irregular spots are present on post median and submarginal areas, if connected by a line, gives a "W" shaped mark. HW with broad terminal band with tawny ovoid spots in the wing vein interspaces. The underside of FW is ochreous yellow. HW varies from ochreous yellow to reddish-tinged yellow-ochre, with more defined black markings and larger white spots along basal margin. Antennae, head, and thorax are

black with ochreous and white markings, while the abdomen is black at the front and ochreous at the rear, featuring fine black transverse lines. Fringe of cilia on the outer margin of FW and HW are short and black (Bingham 1907). Females are similar to the males but have a duller ground color. The black spots on both wings are larger, the upper postdiscal spots forms an irregular oblique band. The black terminal bands are wider; the protuberances are more developed. The underwing is paler and duller with more distinct markings on the HW (Bingham 1907).

The abnormal specimen seen in Thayarwaddy exhibited significant deviations from the wild-type wing pattern of *Acraea terpsicore* and lacked the distinct black colouration of the spots on FW and HW. The difference in placement of dots otherwise falls under the purview of individual variations as observed commonly in this species. All the spots present on FW and HW including the black colouration of apex, costal margin and marginal area were greyish white in colour. Interestingly, the cilia on the outer margin of FW and HW, the dorsal part of antennae and the dorsal part of thorax retained their black colouration. The white spots on both the forewings and hindwings were bilaterally asymmetrical.

The individual retained the bright tawny colouration of wings which eliminates the chances of scales being brushed off. Few black scales were evident on marginal area of FW

and HW indicated mosaicism. The spot seems to be in an inverted colour scheme, where all the black spots are inverted to white spots. Despite these phenotypic abnormalities, the animal behaved normally in flight, basking and interacting with the environment. This finding indicates that the aberration did not negatively affect the butterfly's ability to move or to interact ecologically.

Acknowledgements

The authors acknowledge iForNature-Nature Club, Kolkata, India, for providing with the necessary infrastructure to draft the manuscript. The authors are thankful to Kyaw Khin for the image of a normal *Acraea terpsicore* specimen.

References

Bingham, C.T. (1907). *The Fauna of British India including Ceylon and Burma. Butterflies, Vol. II.* Taylor and Francis, London, 480 pp.

Chakrovorty, A., B. Bhattacharjee & A. Samadder (2023). Distribution of hoverfly *Eupeodes corollae* from eastern India: new record from the states of Assam and Odisha. *Bugs R All #272*, In: *Zoo's Print* 38(9): 29–32.

Chakrovorty, A., A. Garai, B. Bhattacharjee & A. Samadder (2020). Genetic aberration in a Continental Common Pierrot from West Bengal, India. *Bugs R All #186*, In: *Zoo's Print* 35(5): 111–112.

Chowdhury, S., M.F. Braby, R.A. Fuller & M.P. Zalucki (2021). Coasting along to a wider range: niche conservatism in the recent range expansion of the Tawny Coster, *Acraea terpsicore* (Lepidoptera: Nymphalidae). *Diversity and Distributions* 27(3): 402–415.

Kehimkar, I. (2008). *The Book of Indian Butterflies.* Bombay Natural History Society, Mumbai, Oxford University Press, UK, 497 pp.

Kinyon, S. (2004). *An Illustrated Checklist for the Butterflies of Myanmar.* Smithsonian Institution, 197 pp.

van Son, G. (1963). Key to southern African species of *Acraea*. *Transvaal Museum Memoirs* 14(1): 8–122.

Wang, W.L., D.O. Suman, H.H. Zhang, Z.B. Xu, F.Z. Ma & S.J. Hu (2020). Butterfly conservation in China: from science to action. *Insects* 11(10): 661.

Zhang, L., A. Martin, M.W. Perry, K.R.L. van der Burg, Y. Matsuoka, A. Monteiro & R.D. Reed (2017). Genetic basis of melanin pigmentation in butterfly wings. *Genetics* 205(4): 1537–1550.

Min Khant Naing¹, Hnin Pyae Pyae Maung², Banani Bhattacharjee³ & Arnob Chakrovorty⁴

^{1&2} Biodiversity Research Center, Hpa An, Kayin State, Myanmar.

¹ Department of Zoology, Karen Medical College, Kayin State, Myanmar.

^{3&4} Cytogenetics and Molecular Biology Laboratory, Department of Zoology, University of Kalyani, Kalyani, Nadia, West Bengal 741235, India.

^{3&4} iForNature-Nature Club, Kolkata, West Bengal 700028, India.

Emails: ^{3&4}ifornature2k19@gmail.com,

⁴arnobchakrovorty@gmail.com (corresponding author).

Citation: Naing, M.K., H.P.P. Maung, B. Bhattacharjee & A. Chakrovorty (2026). A rare aberration of Tawny Coster butterfly from Myanmar. *Bugs R All #297*, In: *Zoo's Print* 41(2): 08–11.

Bugs R All is a newsletter of the Invertebrate Conservation and Information Network of South Asia (ICINSA)



zooreach
Zoo Outreach Organisation

