

INDIVIDUAL VARIATION IN *NYCTEMERA ADVERSATA* (INSECTA: LEIPOPTERA: EREBIDAE) IN THE INDIAN HIMALAYA

PETER SMETACEK¹ AND AMBICA AGNIHOTRI²

¹*Butterfly Research Centre, Bhimtal, Uttarakhand, India 263 136*
petersmetacek@gmail.com

²*JRF, Uttarakhand Forest Research Institute, Haldwani, Uttarakhand 263 139, India*

Reviewer: Sankararaman H.

Introduction

Nyctemera adversata (Schaller, 1788) is a wide spread moth that occurs throughout the Indian subcontinent (Hampson, 1894). Holloway (1988) ignored the peninsular Indian records and reported the species from the Himalaya, west and south China, Japan, Peninsular Malaysia, Sumatra and Borneo. It often occurs in large numbers and is by far the commonest member of the genus throughout the subcontinent. It occurs in several broods through the year and the larvae have been bred on *Debregeasia*, *Girardinia*, *Urtica* (Urticaceae) and *Gynura* and *Crassocephalum* (Asteraceae) in Bhimtal (Smetacek & Smetacek, 2011). Holloway (1988) compiled earlier information on the subject to report *Erechtites*, *Erigeron*, *Gynura*, *Picris*, *Senecio* and other Asteraceae as larval host plants.

The Arctiinae are known to be subject to some individual variation, especially in the Arctiini. The range of individual variation within a species has never been documented in this species. Holloway (1988) noted that the row of brown patches on the hind wing were of various sizes but did not note any other individual variation in this species. Similarly, Hampson (1894) did not note any individual variation in the species. Barlow (1982) noted that there is "considerable variation in the extent of the black markings on the wings". He did not clarify whether the variation was geographical, seasonal or individual. Although the fuscous markings on both the wings varied

greatly in the specimens examined in the present study, the distinctive abdominal markings served to easily separate it from the sympatric and similar *N. cenis* (Cramer [1777]).

We have here depicted the range of individual variation in this species.

In the current study the species has been recorded from 400 – 1500 m, although Kishida (1992) reported it at 1600 m elevation in Nepal.

Methodology

Moths were surveyed using an ultraviolet lamp of 250 watts in Roing, Lower Dibang Valley district, Arunachal Pradesh and at the Butterfly Research Centre, Bhimtal (1500 m) and Jeolikote (1200 m), both in Nainital district, Uttarakhand. In addition, specimens in the reference collection of the Butterfly Research Centre (BRC) were examined.

Material examined: 27 exs.: BRC, Bhimtal, Sattal and Jeolikote, Nainital district, Uttarakhand. 1200 – 1500 m.

Leg. Fred Smetacek Sr.; Peter Smetacek and A. Agnihotri: 6.vi.1981 (1 ex.); 7.vi.1981 (1 ex.); 15.ix.1983 (1 ex.); 13.x.1983 (1 ex.); 28.iv.1986 (1 ex.); 20.iv.1992 (1 ex.); 3.v.1992 (1 ex. Female); 28.v.1992 (2 exs.); 30.v.1992 (1 ex.); 31.v.1992 (2 exs.); 3.vi.1992 (2 exs.); 20.ix.1992 (1 ex.); 2.x.1993 (1 ex.); 26.x.1993 (1 ex.); 27.x.1993 (2 exs.); 23.v.1998 (1 ex.); 11.x.1998 (1 ex.); 23.x.1998 (1 ex.); 14.xi.1998 (1 ex.); 28.xi.1999 (1 ex.);

22.x.2020 (1 ex.); Roing (390m) Arunachal Pradesh: 28.iv. – 15.vi.2021 (2 exs.)

Forewing length: 24 - 28 mm.

Discussion

Of the 27 specimens examined, 23 match the specimens figured in Hampson (1894), Holloway (1988), Kishida (1992) and Spitsyn *et al.* (2015). Holloway's (1988) specimen is a little darker than that depicted by Hampson (1894) and Spitsyn *et al.* (2015). Barlow (1982) depicted a much darker specimen, quite as dark as the darkest specimen examined in this study.

In this study, specimens of *N. adversata* have been recorded from April to June and from September to November, suggesting that there are at least two generations in the western Himalaya. It has also been recorded in April, May and November at low elevation in Arunachal Pradesh although specimens were not taken from the eastern Himalayan autumn brood.

A specimen with remarkably reduced fuscous markings on both the wings was recorded in BRC on 23.x.1998 (fig. 1a); subsequently a specimen only a little more heavily marked was recorded from Roing in May, 2021 (fig. 1b) among dozens of individuals similar to those depicted in Hampson (1894) and Holloway (1988) (fig. 1c). During the same period a heavily marked individual (fig. 1d) similar to that depicted in Barlow (1982) was recorded at the same time in Roing. This confirms that, although rare, the extent of

fuscous markings on the wings of *N. adversata* is individually variable and not linked to geography or the seasons. However, no heavily marked individual has ever been recorded from the western Himalaya in over 50 years of observation.

References

Barlow, H. S. 1982. *An introduction to the moths of south east Asia*. Southdene Sdn. Bht., Kuala Lumpur. vi+ 305 pp., 1+ 50 pl.

Hampson, G.F. 1894. *The fauna of British India including Ceylon and Burma*. Moths. Volume 2. Taylor & Francis, London. xxii + 609 pp.

Holloway, J.D. 1988. *The moths of Borneo: family Arctiidae, subfamilies Syntominiinae, Euchromiinae, Arctiinae: Noctuidae misplaced in Arctiidae (Camptoloma, Aganainae)*. Southdene Sdn. Bht., Kuala Lumpur. 101 pp., 168 figures, 6pl.

Kishida, Y. in Haruta, T. (ed.). 1992. Moths of Nepal Part I. *Tinea* 13 (Supplement 2): 72-75.

Smetacek, P. & R. Smetacek. 2011. Additions to the known larval host plants of Indian Lepidoptera. *Journal of Threatened Taxa* 3(12): 2272-2276.

Spitsyn, V.M., I.N. Bolotov, M.Y. Gofarov, I.V. Vikhreva & N.I. Bolotov. 2015. First record of *Nyctemera adversata* (Schaller, 1788) and *N. carissima* (Swinhoe, 1891) (Lepidoptera, Erebididae, Arctiinae) from Myanmar. *Check list* 11(4): 1684.

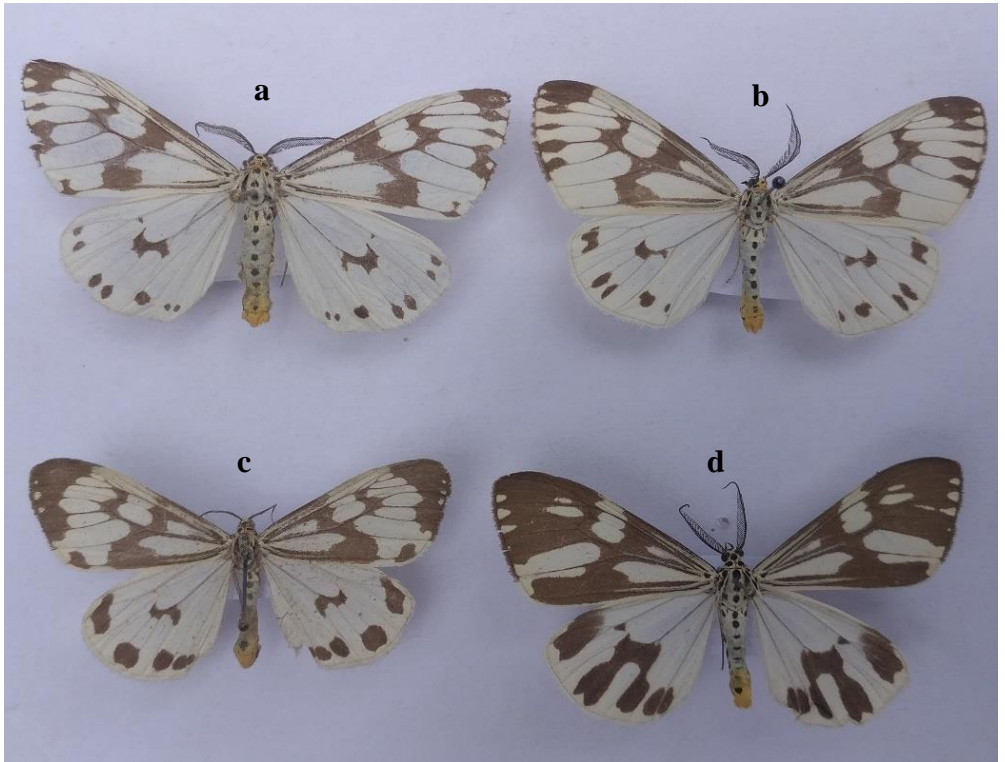


Fig.1: *N. adversata*, a. reduced fuscous markings on both the wings b. specimen only a little more heavily marked, c. similar to those depicted in Hampson (1894) & Holloway (1988) & d. heavily marked individual