

MALE *ARHOPALA BOISDUVAL*, 1832 (LEPIDOPTERA: LYCAENIDAE) HIBERNATE IN THE KUMAON HIMALAYA, INDIA

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Arhopala paraganesa de Niceville (1882) was sporadically reported from Kumaon (Hannington, 1910) in May and June at Nalena (4500 ft/1370 m); Nepal (Van der Poel & Smetacek, 2022) from where it was reported in the months of January and from March to November and “in hill forests between 900-1600 metres” from March to September, throughout its known distribution from Uttarakhand to N.E. India and Myanmar (Kehimkar, 2016). Unlike some members of the genus, eg. *Arhopala ganesa* (Moore, [1858]), *Arhopala rama* (Kollar, [1844]) and *Arhopala dodonea* Moore, [1858] which swarm in suitable localities (Wynter-Blyth, 1957), *A. paraganesa* is always found singly. The larval host plant is unknown and adults appear to spend most of their time in the forest canopy, descending occasionally to water or to bask.

On 2nd January 2023, a single male was recorded at the Butterfly Research Centre, Bhimtal, Uttarakhand (1500 m) when it descended to bask on a sunny lawn around 11 am. This constitutes the first record of the species from the Bhimtal valley although Hannington (1910) recorded it in

the neighbouring valley in the village of Nalena, near Jeolikote, which is west of the Bhimtal valley.

In Nepal, *A. ganesa* has been reported from February to August and November; *A. dodonea* in February and from April to August while *A. rama* has been reported throughout the year (Van der Poel & Smetacek, 2022).

Observations during subsequent days at the Butterfly Research Centre only discovered *Arhopala ganesa*, *A. rama* and *A. dodonea* visiting the lawn on sunny days. Females of *A. ganesa* are known to hibernate (Yokoyama, 1955). In the Western Himalaya *A. rama*, *A. dodonea*, *A. ganesa* are all active on sunny days throughout the year. These 3 species have been recorded on sunny days during December, January and February in the Bhimtal and Sattal valleys by P.S. since 1974. However, the current record was the first time that *A. paraganesa* was recorded during the winter in Uttarakhand, which is the western extremity of its known distribution.

Yokoyama (1955) noted that females of *A. ganesa* overwinter in Japan. Van der Poel & Smetacek (2022) record that all four *Arhopala* Boisduval, 1832 species treated here are known to overwinter as adults but do not clarify whether both sexes or only females overwinter. The present record of *A. paraganesa* is of a male, suggesting that both sexes overwinter. Similarly, both sexes of *A. rama*, *A. dodonea* and *A. ganesa* have been recorded through the winter months in Bhimtal and Sattal valleys.

Other *Arhopala* species in the area include *A. amantes* (Hewitson, 1862), *A. centaurus* (Fabricius, 1775), *A. atrax* (Hewitson, 1862), *A. bazalus* (Hewitson, 1862) and *A. aberrans* (de Niceville, [1882]). All of these are low elevation species in the area and no observations have been undertaken in their known habitat during the winter months to discover whether these species also overwinter as adults.

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