

ISSN 0972- 1800

# BIONOTES

VOLUME 26 (3)

QUARTERLY

SEPTEMBER, 2024



Date of Publication: 28<sup>th</sup> September, 2024

# BIONOTES

**A Quarterly Newsletter for Research Notes and News  
On Any Aspect Related to Life Forms**

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**From Volume 21**

**Published by the Entomological Society of India (ESI), New Delhi (Nodal Officer:  
V.V. Ramamurthy, ESI, New Delhi)**

**And  
Butterfly Research Centre, Bhimtal  
Executive Editor: Peter Smetacek  
Assistant Editor: Bandana Subedi  
Butterfly Research Trust, Bhimtal**

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## HIGHEST ELEVATION RECORD OF THE GOLDEN SAPPHIRE BUTTERFLY *HELIOPHORUS BRAHMA* (LEPIDOPTERA: LYCAENIDAE) FROM SIKKIM, INDIA

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### ABSTRACT

The paper reports highest elevational record of Golden Sapphire *Heliophorus brahma* from Sikkim, India. The Golden Sapphire butterfly has been observed for the first time at an elevation of 3,734 meters (12,250 feet) above sea level in the Himalayan region of Yumthang Valley, Sikkim. This discovery updates our understanding of the altitudinal distribution of this butterfly species.

### INTRODUCTION

Butterflies are known for their high sensitivity to weather and climate conditions (Dennis, 1993). Butterflies are significantly impacted by continuous

landscape changes due to their close association with vegetation. Much of their life cycle depends on specific plants (Thapa *et al.*, 2023). Mountain ranges are highly sensitive to environmental changes and global warming (Huber *et al.*, 2005). It is likely that climatic and land use changes will persist in the future (Pellissier *et al.*, 2013).

Golden Sapphire *Heliophorus brahma* (Moore, [1858]) (Lepidoptera: Lycaenidae) occurs from Uttarakhand eastwards along the Himalaya and hills of N.E. India (Varshney & Smetacek, 2015) to Myanmar and Vietnam. Although females of *Heliophorus* Geyer, 1832 are very difficult to distinguish without

specimens, *H. brahma* is easily distinguished from other members of the genus by the female having a short grey line near the hindwing tail on the upperside.

Wynter-Blyth (1957) and Kehimkar (2016) recorded the Golden Sapphire between 1220-2440 m (4,000 to 8,000 feet) in the Himalaya. According to Gasse (2018) *H. b. brahma* is fairly common in the Himalaya between 900 to 2200 m elevation. Poel & Smetacek (2022) reported this species from 1,150-2,010 m (3,750-6,600 ft) elevation in Nepal. Thus, our observation reports a significant extension to the known elevation range of the species.

## RESULT

On May 11, 2024, a single female *H. brahma* was observed at an elevation of 3,734 meters (12,250 ft) above msl in Yumthang Valley, Sikkim, at coordinates 27°47'58"N, 88°42'14"E (Fig. 1). The elevation of the location where the butterfly was sighted was measured using a mobile phone application (Altimeter-5.1.06 version). The species was recorded during an opportunistic survey (Fig. 2-3).

Over a half-hour observation, the species exhibited short flight periods for about 5-20 seconds, covering distances of approximately 10-20 meters. It spent most of the time basking with folded wings on the low growing vegetation, for about two minutes at a time (Fig. 2).

## DISCUSSION

The record of this new elevation record indicates a shift in the butterfly's distribution range and provides insight into its behavior. Previous research has suggested that such high-altitude shifts in butterfly species may be linked to global climate change (Shrestha *et al.* 2018). It is not clear whether the specimen observed was a straggler or a member of a breeding population in the area.

## ACKNOWLEDGMENT

The authors are very thankful to Dorjee Tshering Lepcha for his resourceful information, and all the executive members of Thamblyok - Butterfly Society of North Sikkim, Mingdup Lepcha, Nosang M. Limboo, Lhendup Lepcha, Janukit Lepcha, Sonam Wangchuk Lepcha Jr., and Puja Rai.

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## LEGENDS OF FIGURE

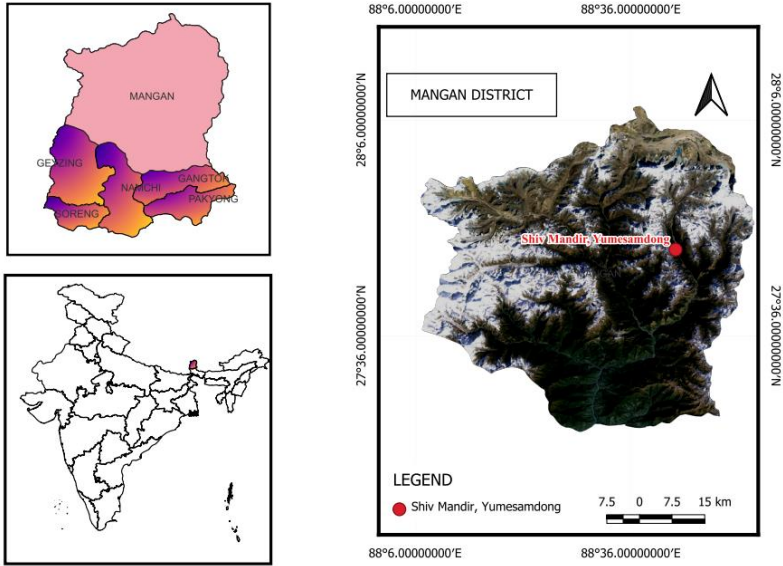


Figure 1: Map shows the recorded locality of the species (Source: Google Earth)



Figure 2: Upper side of Golden Sapphire (*Heliophorus brahma*)



Figure 3: Underside of Golden Sapphire (*Heliophorus brahma*)



Figure 4: Habitat of Golden Sapphire (*H. brahma*) where the individual was recorded