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NOTE

THE SIGHTING OF HOWARTH'S HAIRSTREAK (LEPIDOPTERA: LYCAENIDAE: THECLINAE: *CHRYSOZEPHYRUS DISPARATUS INTERPOSITUS* HOWARTH, 1957) FROM TENGA VALLEY, ARUNACHAL PRADESH, INDIA, EXTENDING ITS KNOWN RANGE

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**THE SIGHTING OF HOWARTH'S HAIRSTREAK
(LEPIDOPTERA: LYCAENIDAE: THECLINAE:
CHRYSOZEPHYRUS DISPARATUS INTERPOSITUS
HOWARTH, 1957) FROM TENGA VALLEY,
ARUNACHAL PRADESH, INDIA, EXTENDING ITS
KNOWN RANGE**

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The butterflies of western Arunachal Pradesh have not been well studied. The earliest records of butterflies from this region are based on a collection of butterflies by Capt. F.M. Bailey as part of his expedition from eastern to western Arunachal Pradesh in 1913. Evans (1914) reported on Bailey's butterfly collection. Betts (1950) reported 169 species of butterflies from western Arunachal Pradesh but did not cover Lycaenidae or Hesperidae. Gupta & Shukla (1998) reported on Lycaenidae from Arunachal Pradesh based on the collection by the Zoological Survey of India between 1964 and 1974. More recently, Athreya (2006) reported on butterflies of this landscape as part of a larger biodiversity assessment. In the last five years, the second author has conducted an assessment of Lepidopteran diversity in the Kameng Protected Area Complex, which includes Eaglenest Wildlife Sanctuary, Sessa Orchid Wildlife Sanctuary, and Pakke Tiger

Reserve, recording 421 species of butterflies (Sondhi & Kunte 2016). Surveys in this highly bio-diverse landscape have resulted in the addition of several butterfly species that are new to India, including *Gonepteryx amintha tibetana* (Sondhi & Roy 2013), *Bhutanitis ludlowi* (Dutta et al. 2015), several butterfly rediscoveries and range extensions including *Calinaga aborica* (Sondhi et al. 2016) and *Arhopala rama* (Singh 2015).

In this paper, we report the sighting of *Chrysozephyrus disparatus interpositus* Howarth, 1957 from Tenga Valley in Tenga Reserved Forest bordering Eaglenest Wildlife Sanctuary.

The first author observed butterflies opportunistically in Tenga Valley, which is part of the Tenga Reserved Forest at the northern edge of the Eaglenest Wildlife Sanctuary and Sessa Orchid Wildlife Sanctuary in western Arunachal Pradesh between 2012 and 2014. The first author recorded and photographed a male Howarth's Hairstreak *Chrysozephyrus disparatus interpositus* Howarth, 1957 on 21 and 22 May 2014 at Tseringpam Village, Tenga Valley, Arunachal Pradesh (27°11'32.1282"N & 92°28'24.1962"E) at an elevation of 1,626m.

The species, *Chrysozephyrus* (= *Neozephyrus*) *disparatus* Howarth, 1957 also commonly known as Howarth's Hairstreak, belongs to the subfamily Theclinae and tribe Theclini. *C. disparatus* has six known subspecies globally—*disparatus*, *hainanus*, *inthanonius*, *pseudotaiwanus*, *interpositus* and *pseudoletha* (Savelle 2016) http://ftp.funet.fi/index/Tree_of_life/insecta/



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Image 1. *Chrysozephyrus disparatus interpositus* male photographed on 22 May 2014 at Tenga Valley, West Kameng District, Arunachal Pradesh, India.

lepidoptera/ditrysia/papilionoidea/lycaenidae/theclinae/chrysozephyrus/), of which the last two are known to occur in India. While the subspecies *interpositus* is known from Sikkim (Howarth 1957; Cantlie 1963) and from the Kathmandu Valley in Nepal (Smith 1994) the subspecies *pseudoletha* is known from the Khasi Hills, Meghalaya (Howarth 1957; Gasse 2013). This specimen from the Khasi Hills was erroneously identified as *C. letha* (as *Ruralis letha*) by Swinhoe (1911) but was listed as a separate subspecies *C. disparatus pseudoletha* by Howarth (1957) based on the similarity of its genitalia with *C. disparatus*. While some authors list *pseudoletha* as a separate species, we have followed Beccaloni et al. (2003) and treat this as a subspecies.

Chrysozephyrus disparatus interpositus was identified using Howarth (1957), Cantlie (1963) and Inayoshi (2016). As we did not have permissions to collect specimens and hence could not examine genitalia, these individuals were identified as *C. disparatus* using photographs. Based on Howarth (1957), *C. disparatus* male has a metallic green upperside with a black-brown border of variable width on UPF/H. On UNF/H, it is a drab grey with disco-cellular bars being indistinct on both wings. The fringe on both wings is outwardly white and inwardly black-brown. UNF: the post discal line is narrow, slightly wavy and white, inwardly dark-lined. The sub-marginal band is reduced to two dark

spots in the tornal area. The marginal line is white, becoming indistinct above space 2. UNH: post-discal line like UNF, but a little wider. The sub-marginal band is irrorated with bluish-white scales in the form of two lines of crescents, the inner one being more prominent. Black-pupilled, apricot-orange ocellus exist in space 2, not touching the similar coloured tornal patch. Of the two Indian subspecies, *pseudoletha* has a very narrow black border of 0.5mm on upperside of the forewing, while this individual had a broader >1mm black marginal border, UPF and hence was identified as the subspecies *interpositus* (Image 1).

The butterfly was seen three times around a particular area along the forest streams in May 2014. The first sighting was on 21 May 2014 at 10am; the second sighting was on 22 May 2014 (Image 1). The same species (and possibly the same individual) was observed for the third time within 30 minutes. The butterfly prefers shaded areas and takes small, swift flights staying 2–3 m above the ground. While perched on leaves, it moves the hindwing to create an illusion of moving antennae using the tail.

The specific locality where the species was sighted was Tseringpam Village in Tenga Valley is situated at 1,626m and covered with thick green sub-tropical forest. The area is rich with variety of seasonal shrubs alongside the stream that flows through the valley, with a gradual

fall in altitude. The wet patches along the forest form good mud-puddling grounds. The area is free from human disturbances and agriculture.

In the Indian subcontinent, this subspecies *Chrysozephyrus disparatus interpositus* is known only from one female and one male specimen collected from Nepal (Smith 1994), and the one male specimen collected by Antram from Sikkim in 1956 housed in the Natural History Museum, London (Howarth 1957; Cantlie 1963). Hence this sighting of *Chrysozephyrus disparatus interpositus* is only the second record of this subspecies from India since its original description by Howarth (1957). This record also extends the known range of this species eastward by 350km from Sikkim to western Arunachal Pradesh.

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