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Four new records of Lycaenid (Insecta: Lepidoptera: Lycaenidae) Butterflies from Haryana, India

Narender SharmaDOI: <https://doi.org/10.22271/j.ento.2024.v12.i1b.9282>**Abstract**

In the course of carrying out a survey in the Khol Hi-Raitan Wildlife Sanctuary in Haryana, under the Zoological survey of India mandate, four species of Lycaenid butterflies i.e., *Zizina otis* (Fabricius, 1787), *Prosotas dubiosa* (Semper, 1879), *Celastrina lavendularis* (Moore, 1877), *Freyeria putli* (Kollar, 1844) were collected/recorded from the sanctuary. These species are new additions to the butterflies of Haryana State.

Keywords: Lepidoptera, lycaenidae, zoological survey of India, Haryana**Introduction**

Khol Hi-Raitan Wildlife Sanctuary is located in the Shivalik Hills in Panchkula district of Haryana State, India between 30°40'00" to 29° 32'00" North latitude and between 76°53'00" to 77°01'00" East longitude. It is 0.5 kilometres away from Panchkula city on the Morni Road and is separated by aerial distance of only 3 kilometres from the Bir Shikargah Wildlife Sanctuary. The sanctuary has total area of 2226.58 hectare. It was declared Wildlife Sanctuary in 2004 vide notification no. S. O., 269/C.A. 53/1972/S. 26-A/2004.

Both the sanctuaries, Bir Shikargah Wildlife Sanctuary and Khol Hi-Raitan Wildlife Sanctuary are approx. 76 kilometres away by air from Kalesar National Park, each of which are located in Haryana's Shivalik hills. Each of these three protected areas have almost similar wild animal species and the migration of these animals occurs among these protected areas. Rhesus macaque, Gray langur, Indian gray mongoose, Sambar deer, Wild boar, Striped hyena, Jungle cat, Indian jackal, Chital (Spotted deer), Indian fox, Indian leopard, and Indian jackal are among the wild species.

The sanctuary is surrounded by Morni-Jallah road to the North, National Highway-73 to the West, Mandana to the East and village plains to the South. The terrain of west side of Mandana is hilly slopes having well developed forests and there is no human settlements after Berwala when moving towards Mandana.

The family Lycaenidae comprises small or medium sized butterflies and is the largest family amongst the six butterfly families. In addition to practically every other color, blue is the predominating color among them. Over 6000 species (40% of all known butterfly species) are found worldwide, with 521 species found in India. They are generally known as Gossamer winged butterflies. Most of the species of the family Lycaenidae have thread like tails at their hind wings which may be in the form of small tufts to long fluffy tails. In comparison to other butterfly families, the family Lycaenidae has been considered a tough and complex group due to lot of variations in their shape, different maculation patterns and contrasts of rectos and versos of the species. The caterpillars of the many Lycaenid species have specific secretory organs or glands. In exchange for their protection, the ants receive tasty liquids released from glands of the larvae. This mutualistic behaviour has been referred to as myrmecophily.

Materials and Methods

Study area: The Present survey was undertaken at Khol Hi-Raitan Wildlife Sanctuary, Haryana. This sanctuary is situated in the Shiwalik hills of the Himalaya on the Morni Road. It is only 3 kms away from the Bir Shikargah Wildlife Sanctuary by aerial distance.

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The total area of the sanctuary is 2226.58 hectare. The terrain of Khol Hi-Raitan WLS is hilly slopes. The Sanctuary has sandy loam soil and due to more iron content it is red in appearance.

Methodology

The present survey work has been undertaken under the directives of Zoological Survey of India, in Khol Hi-Raitan WLS, in district Panchkula, Haryana in the forenoon of 16th November, 2022, ten specimens of the family Lycaenidae (Lepidoptera) were collected on the bank of the hill stream near Berwala by using butterfly net. The adults were caught inside the net and killed by giving little pressure on the thorax. After killing, the specimens were kept inside the insect folder. The specimens were pinned, stretched and kept for three days in drying chamber. Finally, all the examples were registered, labelled with name of locality, date of collection, latitude, longitude and altitude, placed at Entomology Museum, Northern Regional Centre, Dehradun as National Zoological Collections (NZC). Each species has been photographed from dorsal and ventral side with the help of Digital Camera (DX-80 model, Nikon make). The identification of the species has been done with the help of literature by Evans (1932) ^[1] and Wynter-Blyth (1957) ^[14]. The GPS readings: N 30^o41'03"; E 76^o50'56" altitude 318 m were taken at Khol Hi-Raitan WLS by using Orgon 550 GPS of Garmin make.

Results

Systematic Account
Superfamily Papilionoidea
Family: Lycaenidae
Subfamily Polymethine

Genus *Zizina* Chapman 1910

1. *Zizina otis* (Fabricius, 1787)

Lesser Grass Blue

1787 *Papilio otis* Fabricius, *Mantissa Insectorum* 2:73, no. 689.

Material examined: Haryana, Khol Hi-Raitan WLS: Berwala, 4 exs, 16.xi.2022, Collector N. Sharma & party.

Distribution: India, Throughout India including Andaman & Nicobar Islands.

Elsewhere: Bangladesh, China, Japan, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Sri Lanka.

Genus *Prosotas* Druce, 1891

2. *Prosotas dubiosa* (Semper, 1879)

Tailless Lineblue

1879. *Lampides dubiosa* Semper, *J. Mus. Godeffroy* 5(14):159, no. 66.

Material examined: Haryana, Khol Hi-Raitan WLS: Berwala, 2 exs, 16.xi.2022, Collector N. Sharma & party.

Distribution: India: Throughout India including Andaman & Nicobar Islands.

Elsewhere: Australia, China, Indonesia, Israel, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand.

Genus *Celastrina* Tutt, 1906

3. *Celastrina lavendularis* (Moore, 1877)

Plain Hedge Blue

1877. *Polyommatus lavendularis* Moore, *Ann. Mag. nat. Hist.* (4)20(118):341.

Material examined: Haryana, Khol Hi-Raitan WLS: Berwala, 1 ex., 16.xi.2022, Collector N. Sharma & party.

Distribution: India, Uttarakhand to N.E. India, Jharkhand, Karnataka, Kerala and Tamil Nadu.

Elsewhere: Indonesia, Malaysia, Myanmar, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam.

Genus *Freyeria* Courvoisier, 1920

4. *Freyeria putli* (Kollar, 1844)

Small Grass Jewel

1848. *Lycaena putli* Kollar, *In Hugel's Kaschmir* 4(2): 422.

Material examined: Haryana, Khol Hi-Raitan WLS: Berwala, 3 exs, 16.xi.2022, Collector N. Sharma & party.

Distribution: India, Punjab to N.E. India, South India. **Elsewhere:** Japan, Nepal, Myanmar, Pakistan, Sri Lanka, Thailand.

Discussion

Recently, The survey has been undertaken in the Khol Hi-Raitan Wildlife Sanctuary in the month of November, 2022 under the directives of Zoological survey of India, and four species of Lycaenid butterflies *i.e.*, *Zizina Otis* (Fabricius, 1787) ^[2], *Prosotas dubiosa* (Semper, 1879) ^[8], *Celastrina lavendularis* (Moore, 1877) ^[6], *Freyeria putli* (Kollar, 1844) ^[3] were collected/recorded from the locality Berwala of the sanctuary. These species are new additions to the butterflies of Haryana state.

Sethy & Ray (2010) ^[9] in a preliminary list of 35 species of butterflies of Kalesar National Park, Haryana, fail to record these four species. Kumar (2013) ^[4] provided an account of 84 species under 53 genera and 5 families of butterflies from Kalesar National Park, Haryana except these four species. Sharma & Kumar (2017) ^[10] could not record these species from Sultanpur National Park, Haryana. Ranade (2017) ^[7] added four species of Butterflies to the checklist of Kalesar National Park, Haryana excluding the presently reported species. Kumar (2020) ^[5] could not record these species while reporting 109 species under 74 genera of butterflies from the state Haryana.

The species *Zizina Otis* (Fabricius, 1787) ^[2] and *Freyeria putli* (Kollar, 1844) ^[3] have been earlier reported from the neighbouring states *i.e.*, Punjab (Sharma & Kumar, 2019) ^[11], Himachal Pradesh (Sidhu & Sharma, 2021) ^[12] and Uttarakhand (Sondhi and Kunte, 2018) ^[9] but could not be recorded from any other localities in Haryana except Khol Hi-Raitan WLS.

The species, *Prosotas dubiosa* (Semper, 1879) ^[8] and *Celastrina lavendularis* (Moore, 1877) ^[6], could not be recorded from the neighbouring states, Punjab and Himachal Pradesh by Sharma & Kumar (*loccit.*) and Sidhu and Sharma (*loccit.*). Sondhi and Kunte (2018) ^[13] reported these species from the State Uttarakhand. The faunistic surveys, under the mandates of Zoological survey of India have been undertaken throughout the state Haryana (2006-2009). However, these

species could be collected only from Berwala, Khol Hi-Raitan WLS. So, all these four species *i.e.*, *Zizina otis* (Fabricius, 1787) [2], *Prosotas dubiosa* (Semper, 1879) [8], *Celastrina lavendularis* (Moore, 1877) [6], *Freyeria putli* (Kollar, 1844) [3] have restricted distribution in Haryana. The species, *Celastrina lavendularis* (Moore, 1877) [6] has been mentioned as uncommon by Sondhi and Kunte (*loc.cit.*), which goes in accordance with the present studies. However, the other three species were found Less Common.



Fig 1: *Zizina otis* (Fabricius), Ventral Side



Fig 2: *Zizina otis* (Fabricius), Dorsal Side



Fig 3: *Prosotas dubiosa* (Semper), Ventral Side



Fig 4: *Prosotas dubiosa* (Semper), Dorsal Side



Fig 5: *Freyeria putli* (Kollar), Dorsal Side



Fig 6: *Freyeria putli* (Kollar), Ventral Side



Fig 7: *Celastrina lavendularis* (Moore), Ventral Side



Fig 8: *Celastrina lavendularis* (Moore), Dorsal Side

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Conclusion

The four Lycaenid species *i.e.*, *Zizina otis* (Fabricius), *Protoparce dubiosa* (Semper), *Celastrina lavendularis* (Moore), *Freyeria putli* (Kollar) have been recorded only from Khol Hi-Raitan Wildlife Sanctuary, in Haryana state. Hence, these species need attention and are already protected as they are in the protected area.

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