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continued on the back inside cover

Cover: Digital illustration of Smooth-coated Otter *Lutrogale perspicillata* by Dupati Poojitha. Reference from the picture taken by Rana & Sugandhi.



First photographic record of *Chitoria sordida sordida* (Moore, 1866) (Insecta: Lepidoptera: Nymphalidae: Apaturinae) from Arunachal Pradesh, India

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As showcased in Image 1, wedged between Patkai Ranges and Dapha Bum ridge of Mishmi Hills, Namdapha National Park and Tiger Reserve is located at 27.383–27.650° N and 96.250–96.966° E in Arunachal Pradesh's Changlang District. It has a subtropical climate that varies with elevation ranging 200–4,571 m (Arunachal Online 2024).

The genus *Chitoria* Moore, 1896 consists of 10 species: *sordida* (Moore, 1866), *ulupi* (Doherty, 1889), *pallas* (Leech, 1890), *fasciola* (Leech, 1890), *subcaerulea* (Leech, 1891), *modesta* (Oberthür, 1906), *chrysolora* (Fruhstorffer, 1908), *naga* (Tytler, 1914), *cooperi* (Tytler, 1926), and *lei* (Lang, 2009). Of these 10 species, three of them—*ulupi* (Doherty, 1889), *sordida* (Moore, 1866) and *naga* (Tytler, 1914)—are reported from India (Irunbam et al. 2016). Further, among these, the range of *Chitoria sordida* is known to extend from northeastern India (Sikkim, Darjeeling, Assam, and Manipur) to as far as northern Myanmar (Moore 1865; Tytler 1914; Antram 1924; Kehimkar 2008). The species is represented by two subspecies, namely *Chitoria*

sordida sordida (Moore, 1866) and *Chitoria sordida vietnamica* (Nguyen, 1979). While subspecies *Chitoria sordida vietnamica* is reported from northern Vietnam to eastern Laos and Thailand, at altitudes above 1,000 m, the subspecies *Chitoria sordida sordida* is reported from limited northeastern Indian states, Bhutan, and northern Myanmar at a much lower altitude of 500 m (Nguyen 1979; Masui 2004; Wangdi et al. 2012).

The Himalayan Sordid Emperor *Chitoria sordida sordida* (Moore, 1866) is a brush-footed butterfly belonging to the genus *Chitoria*, subfamily Apaturinae, family Nymphalidae and the Apaturini tribe (Bingham 1907). It is reported to be found in the tropical forests of the north-eastern states of India and Bhutan (Bingham 1907; Irunbam et al. 2016). This species is legally protected under Schedule II, of the Indian Wildlife (Protection) Amendment Act, 2022. For the geographical realm of India, verifiable scientific publications confirm the presence from Sikkim, Darjeeling (West Bengal), Assam, and Manipur (Tytler 1914; Masui 2004; Irunbam et al. 2016). These observations were documented at

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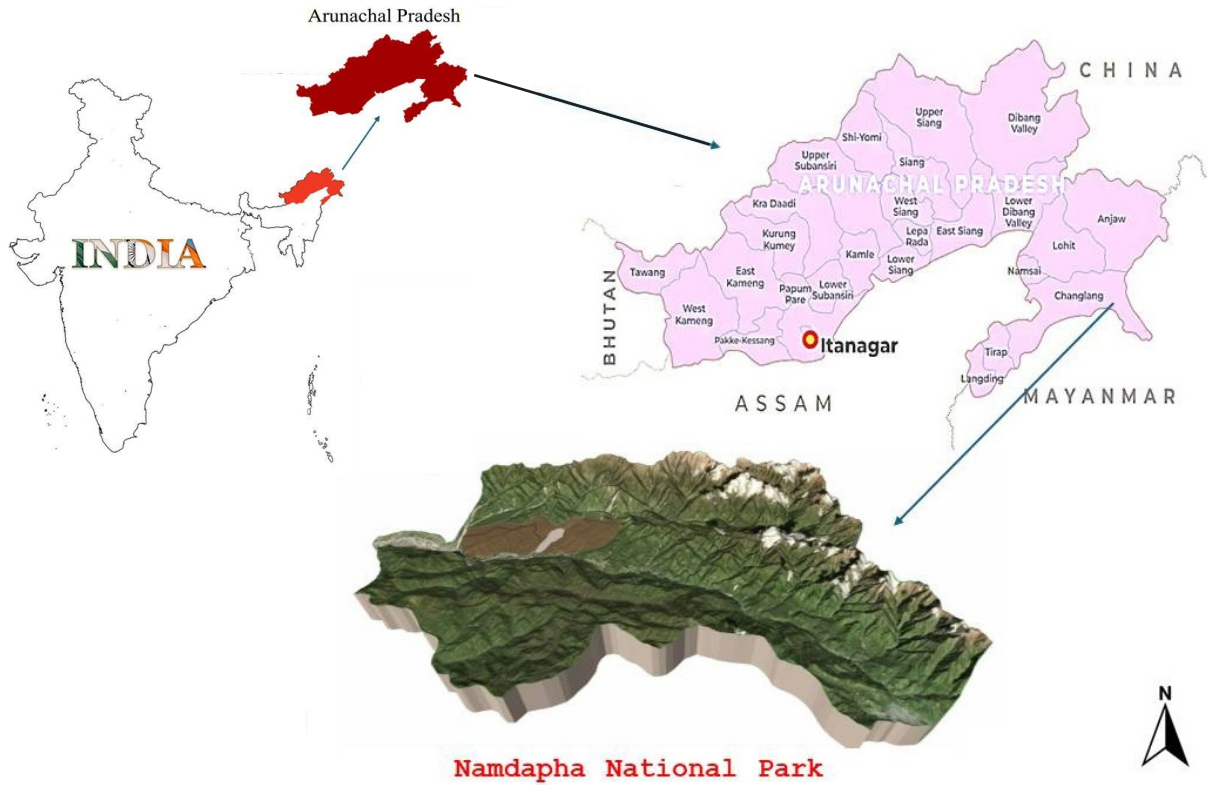


Image 1. Location of Namdapha National Park and Tiger Reserve in Arunachal Pradesh, India.



Image 2. Location of Lungkai Nalla within Namdapha National Park and Tiger Reserve. Source: Google Earth.

elevations less than 500 m (Kehimkar 2008; Irungbam et al. 2016). Sightings at these locations are apparent as Sikkim, West Bengal, and Assam share borders with

southern Bhutan (Irungbam et al. 2016). As per the web portal of Indian Foundation for Butterflies, the most recent observations are from West Sikkim during April

2018 and October 2021; and Rangli forest in West Bengal during July 2022 (Kunte et al. 2024).

Upon analysing the recent exploratory studies for Arunachal Pradesh, it can be affirmed that there are around 175 Nymphalidae species in this northeastern state of India. These noteworthy mentions are also supported with credible photographic evidence (Gogoi 2012; Sethy et al. 2014; Sondhi & Kunte 2016; Sharma & Goswami 2021; Roshan et al. 2023; Limbu & Achint 2024). None of these checklists mention *Chitoria sordida sordida*; hence, it can be confirmed that in conjunction with reliable historical notes, the taxon is reported for the first time from Arunachal Pradesh or Namdapha National Park and Tiger Reserve to-date (Tytler 1914; Masui 2004; Singh & Chib 2014). Also, Namdapha National Park and Tiger Reserve shares its border with China and Myanmar, and not Bhutan. Hence, this sighting is a remarkable discovery. The recording and critical identification of *Chitoria sordida sordida* (Moore, 1866) is thereby an important addendum to the existing bio-inventory of both Namdapha National Park and Tiger Reserve, and Arunachal Pradesh (Roshan et al. 2023; Upadhaya & Sheikh 2025). The taxonomic status is mentioned herewith.

Systematic Position

Class: Insecta Linnaeus, 1758

Order: Lepidoptera Linnaeus, 1758

Family: Nymphalidae Rafinesque, 1815

Subfamily: Apaturinae Boisduval, 1840

Genus: *Chitoria* Moore, 1896

Species: *Chitoria sordida* Moore, 1866

The sighting of the single individual of *Chitoria sordida sordida* (Moore, 1866) was made on 16 October 2024 at Lunkai Nalla (27.493° N, 96.386° E) situated within the Namdapha National Park and Tiger Reserve, Arunachal Pradesh. As showcased in Image 2, Lunkai Nalla is basically a small stream powered by the Deban Nalla and Noa-Dihing River which runs turbulently through the forest.

The identification of *Chitoria sordida sordida* was done by consulting the pictorial field guides, catalogues, and identification keys in accordance with available literature and standard taxonomic keys (Evans 1927, 1932). The critical external morphological features analysed included the wing colouration, wingspan, and antennae structure. The female butterfly with wingspan of approximate 74 cm had broader oblique discal band on the forewing and a distinct rounded hindwing. While the antennae appeared brown, it was paler below the club. The head, thorax, and abdomen appeared brown



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Image 3. *Chitoria sordida sordida* at Lunkai Nalla: A—slightly extended 'open wing shot' | B—fully 'closed wing shot' | C—fully 'open wing shot'.

and were paler beneath (Bingham 1907; Moore & Swinhoe 1890). No specimen was collected.

The single female individual was witnessed flying swiftly across the banks of the stream, before moving onto rocky surfaces for basking alongside other species such as, *Rohana parisatis* Westwood, 1851, *Heliophorus epicles* Godart, 1824, *Mimathyma ambica* Kollar, 1844, and *Cigaritis lohita* Horsfield, 1829. The single individual butterfly upon disturbance from other butterflies was found to intermittently hover around *Celtis sinensis* before returning to bask on the rocks (Image 3) with sufficient sunlight. The individual was also observed to momentarily shift on occasion, to wet rocks. It was also noticed that the species preferred the vicinity of the stream-sides and was avoiding even the gentle water patches and thick forest outgrowth on the sides of the stream.

Conclusion

The paper provides brief notes on the addition of *Chitoria sordida sordida* (Moore, 1866) (Nymphalidae: Apaturinae) to lepidopteran fauna checklist for Arunachal Pradesh, India. The discovery of *Chitoria sordida sordida* (Moore, 1866) in Namdapha National Park and Tiger Reserve, Arunachal Pradesh, India; throws up further exploratory opportunities for more probable sightings of the same species, as well those of others which are yet to be documented. This addendum to existing inventory is critical for deciphering the ecosystem dynamics, and for re-evaluating conservation strategies. This finding also hints at possibility of range extensions in the wake of climate change-mediated alterations in the environmental factors.

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Articles

Predicting the potential habitat of *Tragopan blythii* (Jerdon, 1870) (Aves: Galliformes: Phasianidae) in Mehao Wildlife Sanctuary of Arunachal Pradesh, India

– Eba Tapo & Gibji Nimasow, Pp. 28455–28467

Composition and ecological guild structure of birds at Chaudhary Devi Lal University campus, Haryana, India

– Harkrishan Kamboj, Vijay Singh, Vivek Goyal & Vinay Malik, Pp. 28468–28478

New record of two natricine snakes, *Hebius gilhodesi* (Wall, 1925) and *Herpetoreas davidi* Nguyen et al., 2024 (Reptilia: Squamata: Colubridae), from India

– Sourav Dutta, Bitupan Boruah & Abhijit Das, Pp. 28479–28494

Diversity and distribution pattern of geometrid moths (Insecta: Lepidoptera: Geometridae) along the altitudinal gradient, Kumaun Himalaya, India

– Narendra Singh Lotani & Chandra Singh Negi, Pp. 28495–28509

New distribution records and taxonomic studies of ascomycetous fungi *Xylaria* and *Daldinia* (Ascomycota: Xylariales: Xylariaceae) in Karnataka, India

– S. Bharath Kumar, A. Muthu Kumar & Praveen Kumar Nagadesi, Pp. 28510–28523

Identification of wildlife crime hotspots in Punjab, India via kernel density estimation analysis

– Navdeep Sood & Rohan Kumar, Pp. 28524–28533

Communications

Assessing nutritional status of Chital *Axis axis* (Erxleben, 1777) (Mammalia: Artiodactyla: Cervidae) through bone marrow condition of predated individuals in Kanha Tiger Reserve, India

– Shravana Goswami, Ujjwal Kumar & Yadvendra V. Jhala, Pp. 28534–28539

Smooth-Coated Otter *Lutrogale perspicillata* (Mammalia: Carnivora: Mustelidae) observation near a community reservoir in Bannerghatta National Park

– Amrita Nair & Avinash Krishnan, Pp. 28540–28545

Range extension records of Tibetan Snowcock, Tibetan Sandgrouse, and Western Tragopan in Uttarakhand, India

– Anuj Joshi, Ranjana Pal, Vineet K. Dubey & Sambandam Sathyakumar, Pp. 28546–28551

Morphological and statistical perspectives on genital sexual dimorphism in Eupterotidae Swinhoe, 1892 (Insecta: Lepidoptera)

– Sujata Saini & Shabnum Shafi, Pp. 28552–28563

Distribution of rheophytes in Kopili River Basin, Assam and Meghalaya, India

– Jayanta Das & Deepak K. Baruah, Pp. 28564–28572

Short Communications

First photographic record of Smooth-coated Otter *Lutrogale perspicillata* from the canals in Upper Ganga Ramsar Site, Uttar Pradesh, India

– Aftab Alam Usmani, Pichaimuthu Gangaiamaran, Ruchi Badola & Syed Ainul Hussain, Pp. 28573–28577

First camera-trap evidence of a ferret badger *Melogale sp.* (Mammalia: Carnivora: Mustelidae) from the community forests of Manipur, India

– Chingrisoror Rumthao, Monesh Singh Tomar & Sushanto Gouda, Pp. 28578–28581

Species composition of butterflies associated with nectar feeding on *Libidibia coriaria* (Jacq.) Schltld (Magnoliopsida: Fabales: Fabaceae)

– V. Ajay Krishna, M.P. Gopika, S. Adithyan & K.S. Aneesh, Pp. 28582–28589

New distribution records of five species of freshwater palaemonid prawns (Crustacea: Decapoda) in Nagaland, India

– K. Valarmathi, Pp. 28590–28593

Range extension of the lichenized ascomycete, *Cladonia fruticulosa* Kremp., 1882 (Lecanoromycetes: Lecanorales: Cladoniaceae), from Similipal Biosphere Reserve of Odisha

– Shubham Pradhan, Satyabrata Dash, Bijayananda Sahoo & Biswajit Rath, Pp. 28594–28599

Notes

First photographic record of *Chitoria sordida sordida* (Moore, 1866) (Insecta: Lepidoptera: Nymphalidae: Apaturinae) from Arunachal Pradesh, India

– Roshan Upadhaya, Rajesh Gopinath, R. Mahesh & Gaurav Joshi, Pp. 28600–28603

Westward range extension of the Greater Bluewing *Rhyothemis plutonia* Selys, 1883 (Insecta: Odonata: Libellulidae) into Uttarakhand, India

– Omkar Sanjay Damle, Pp. 28604–28606

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