

NEW ADDITIONS TO THE CHECKLIST OF BUTTERFLIES OF CORBETT TIGER RESERVE, UTTARAKHAND, INDIA

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Corbett Tiger Reserve (CTR) provides an undisturbed habitat for a great variety of flora and fauna to flourish (Pant, 1986; Khanna *et al.*, 2008). The Reserve holds a significant diversity of butterflies (Chaudhary *et al.*, 2020). The species diversity and abundance of butterflies has been used as an indicator of health of the ecosystem, and to monitor the effectiveness or efforts to conserve nature (Oostermeijer *et al.*, 1998; Hilty *et al.*, 2000; Ghazanfar *et al.*, 2016; Thomas, 2005). It is therefore desirable to know the diversity of butterflies in a conservation area.

Previous reports have documented a total of 143 species of butterflies inside and in the immediate vicinity of CTR (Kumar, 2008; Arya *et al.*, 2020; Chaudhary *et al.*, 2020). Here, we report sighting of 10 species of butterflies which have not been previously documented in the checklist of butterflies of CTR.

The sites and habitats in which the butterfly species were sighted in the present study have been provided in Table 1. All the sites are either located inside the administrative boundary of CTR or in villages/Forest Rest Houses located along the boundary of CTR. The butterflies sighted were photographed using digital cameras or cell phone cameras. Identification of butterflies was done according to Kehimkar (2016), Smetacek (2017), and Sondhi (2018).

The 10 butterfly species that have been reported in the present study are given in Table 1, and Figure 1. The butterfly Aberrant Bushblue (*Arhopala abseus*) has been previously reported only on one occasion from the state of Uttarakhand (Smetacek, 2011). The present sighting of *Arhopala abseus* in CTR indicates further extension of its range, westward to the known distribution of this butterfly (Smetacek, 2011). There are only three reports of sighting of *Catapaecilma major*

from the state of Uttarakhand (Sondhi *et al.*, 2018; Kumar *et al.*, 2019). The last sighting of this species was reported by Kumar *et al.* (2019) from Loharkhet (altitude 1700 m approx.) in Bageshwar district. In the present communication, two individuals of *Catapaecilma major* were sighted along a stream at an altitude of approximately 560 m. Our sighting of *Catapaecilma major* is thus the fourth report of this species from Uttarakhand. The butterfly *Parantica melaneus* considered rare with only few records from Uttarakhand (Sondhi *et al.* 2018) was sighted at least on 5-7 occasions in the present study.

Therefore with 10 additions, the number of butterfly species reported from Corbett Tiger Reserve increases to 153.

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S. No.	Species recorded	Habitat	Geographical coordinates*	Remarks
<i>Hesperiidae</i>				
1.	<i>Coladenia indrani</i> (Moore, 1866) Tricolour Pied Flat	Dense, mixed tree plantations near human habitation.	29° 25' 17" N, 78° 59' 57" E; altitude: 330 m. approx.	Sighted once in the month of May.
2.	<i>Pelopidas assamensis</i> (de Nicéville, 1882) Great Swift	Dense, mixed tree plantations near human habitation.	29° 25' 17" N, 78° 59' 57" E; altitude: 330 m. approx.	Sighted once in the month of June.
<i>Lycaenidae</i>				
3.	<i>Arhopala abseus</i> (Hewitson, 1862) Aberrant Bushblue	Resting among foliage at the fringes of mixed Sal forest.	29° 28' 09" N, 79° 8' 51" E; altitude: 425 m. approx.	One individual was sighted in the month of January.
4.	<i>Azanus uranus</i> (Butler, 1886) Dull Babul Blue	Near human habitation on <i>Acacia</i> sp. tree.	29° 25' 17" N, 78° 59' 57" E; altitude: 330 m. approx.	One male and female were sighted in the month of September.
5.	<i>Catapaecilma major</i> (Druce, 1895) Common Tinsel	Near a spring at the fringes of dense, mixed Sal forest.	29° 41' 40.8" N 78° 46' 33.6" E; altitude: 560 m. approx.	Two individuals were sighted puddling near a stream in the month of March.

6.	<i>Iraota timoleon</i> (Stoll, 1790) Silverstreak Blue	Dense, mixed tree plantations near human habitation.	29° 25' 17" N, 78° 59' 57" E; altitude: 330 m. approx.	Sighted once resting on foliage in the month of June
7.	<i>Rapala nissa</i> (Kollar, 1844) Common Flash	Fringes of mixed Sal forest.	29° 38' 02.8" N 78° 54' 56.9" E; altitude: 1050 m. approx.	About 5-6 individuals were sighted basking on a tree, in the month of March.
8.	<i>Spindasis ictis</i> (Hewitson, 1865) Common Shot Silverline	Dense, mixed tree plantations near human habitation.	29° 25' 17" N, 78° 59' 57" E; altitude: 330 m. approx.	Sighted once in the month of April.
<i>Nymphalidae</i>				
9.	<i>Elymnias malelas</i> (Hewitson, 1863) Spotted Palmfly	Near human habitation at the fringe of dense, mixed Sal forest.	29° 40' 04" N, 78° 51' 13" E; altitude: 700 m. approx.	Sighted once in the month of March, resting on the tree trunk.
10	<i>Parantica melaneus</i> (Cramer, 1775) Chocolate Tiger	Dense, mixed Sal forest.	29° 41' 40.8" N 78° 46' 33.6" E; altitude: 560 m. approx.	A total of 5-7 individuals were sighted at different locations.

*<https://earth.google.com/web>

Table 1: Particulars of butterfly species sighted in the present study.

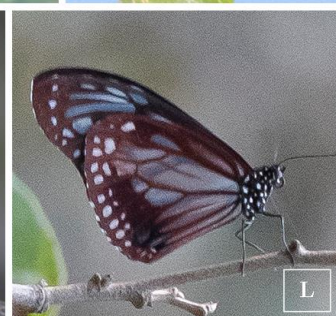
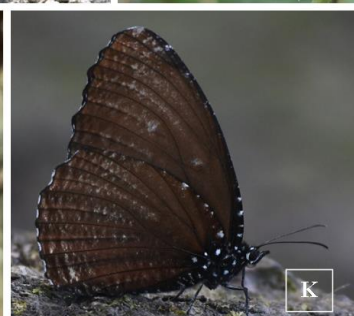
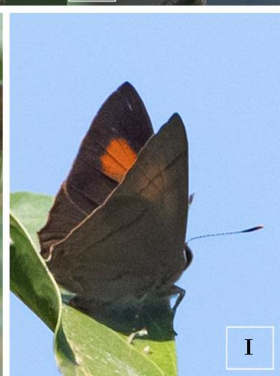
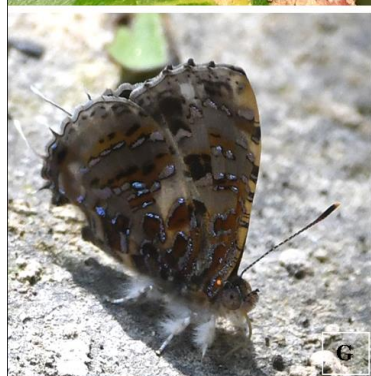
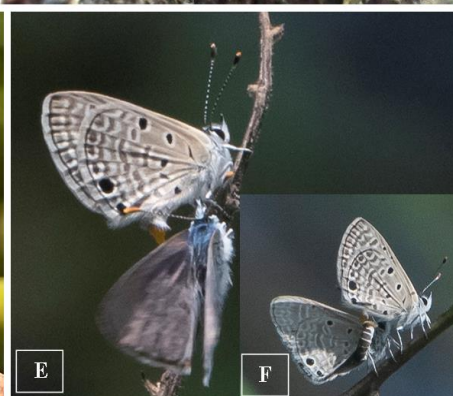
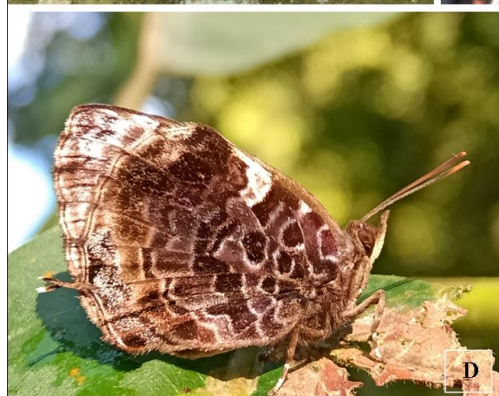


Figure 1: Butterfly species reported in the present study.

(A) *Coladenia indrani*, (B-C) *Pelopidas assamensis*, (D) *Arhopala abseus*, (E-F) *Azanus uranus*, (G) *Catapaecilma major*, (H) *Iraota timoleon*, (I) *Rapala nissa*, (J) *Spindasis ictis*, (K) *Elymnias malelas*, (L) *Parantica melaneus*.