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NOTE

ADDITIONAL DISTRIBUTION RECORDS OF THE RARE NEPAL COMMA *POLYGONIA C-ALBUM AGNICULA* (MOORE, 1872) (INSECTA: LEPIDOPTERA: NYMPHALIDAE) FROM RARA NATIONAL PARK, NEPAL

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Kaashi Chandra Rokaya & Bimal Raj Shrestha

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Various geographical subspecies of the Comma butterfly, *Polygonia c-album* (Linnaeus, 1758) are distributed across Europe and Asia, reaching as far as Japan in Asia and south to Morocco (Gogoi et al. 2015). *P. c-album* is a medium-sized butterfly with wingspan of 45–50 mm and having a central silver dash or comma underside (Evans 1932)

hence the name. It belongs to the family Nymphalidae. There are three subspecies of *Polygonia c-album*, namely, *P.c. kashmira* (Evans, 1932) distributed in Kashmir, Ladakh; *P.c. cognata* (Moore, 1899), distributed in northwestern Himalaya; and *P.c. agnicula* (Moore, 1872) distributed in Nepal–Bhutan (Kehimkar 2008), and Arunachal Pradesh (Gogoi et al 2015). *P.c. agnicula* is unique from other subspecies since it is uniformly fulvous red above with narrower markings with no ashy wing margins, submarginal area with red band, bordered along its inner margin by a broken dark brown post discal band (Evans 1932). The subspecies is considered to be rare in contrast to other two subspecies in Indian region (Evans 1932; Smith 1989) and uncommon locally in Bhutan (Poel & Wangchuk 2007) but still could be rare.

P.c. agnicula was first discovered in Nepal by Maj. Gen. G. Ramsey (Smith 1990). It is distributed from central to western region of the country with sighting only from five different sites including Karnali (29.386°N, 82.388°E, 4,314m) (Smith 1980) Manang (28.551°N, 84.237°E, 2,746m) (Smith 1980; Poel 2012; B.R. Shrestha

ADDITIONAL DISTRIBUTION RECORDS OF THE RARE NEPAL COMMA *POLYGONIA C-ALBUM AGNICULA* (MOORE, 1872) (INSECTA: LEPIDOPTERA: NYMPHALIDAE) FROM RARA NATIONAL PARK, NEPAL

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pers. obs. 2018), Rasuwa (28.206°N, 85.568°E, 1,810m) (Poel 2017), Humla (29.966°N, 81.833°E) (M.S. Limbu pers. comm. 2017, N. Kusi pers. obs. 2014), and Ghurchi lek, Mugu (29.466°N, 82.136°E, 3,515m) (N. Kusi pers. obs. 2014).

Rara National Park (RNP) (29.511°N, 82.05°E) is the smallest national park of Nepal covering an area

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Figure 1. Observation locations of Nepal Comma *Polygonia c-album agnicula* during 2017-2018.

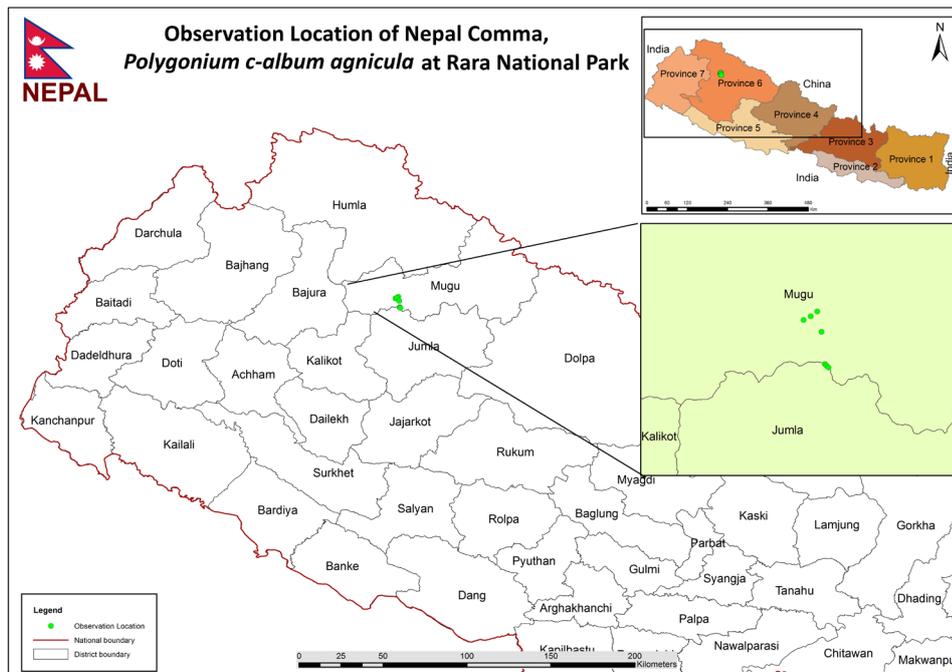


Figure 2. Observation locations of Nepal comma, *Polygonia c-album agnicula* in Rara National Park, Nepal.

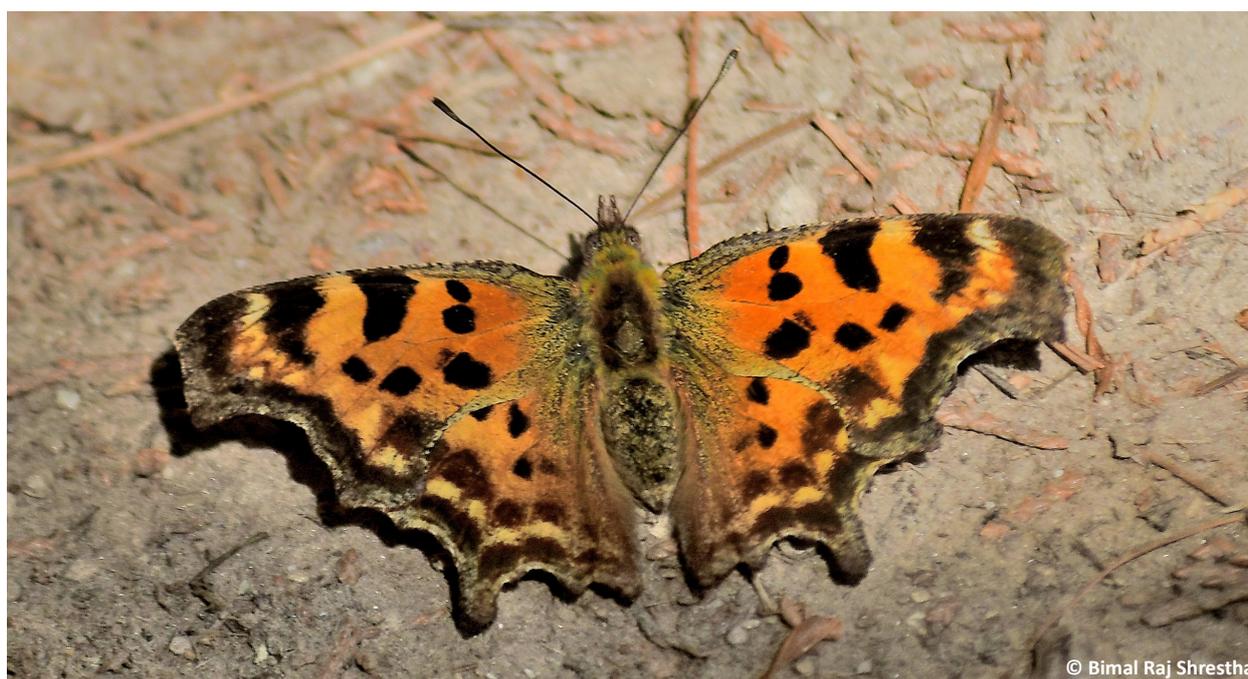
of 106km². The park is extended in Mugu and Jumla districts and ranges from 2,800m to 4,039m in elevation. RNP has pleasant warm summers and very cold winters. The park includes 170 species of floral diversity mainly dominated by *Rhododendron arboretum*, *Pinus excelsa*, fir, spruce and pine. Faunal diversity of RNP includes 241 species of birds, two species of reptiles and amphibia, and three species of fish (Bhuju et al. 2007).

We conducted the research in RNP during monsoon

(June–Sept, 2017) and post-monsoon season (Oct–Nov, 2018). The Comma *Polygonia c-album* species was recorded while through trail transects of 100m length and photographed using DSLR camera (Nikon D500). We followed the guidebook by Smith (1989) and Evans (1927) and consulted experts in Nepal and India to confirm our identification. The species is characterized by F dorsum straight, H termen not produced to the same extent, tooth at v2 projects as far as the tornus; apex not or only

Table 1. Observation location of Nepal Comma *Polygonium c-album agnicula* at Rara National Park 2017/2018.

	Date	Time (h)	North	East	Elevation (m)	Frequency (no.)	Remarks
1	19.x.2017	11.00	29.538	082.076	2983	1	Trail, forest, and shrub land near lake outlet.
2	22.x.2017	15.00	29.529	082.062	2977	1	Trail and forest near lake outlet.
3	14.ix.2018	09.24	29.532	82.069	2977	3	Forest trail near lake.
4	14.ix.2018	13.05	29.516	82.081	2984	1	Grassland near lake.
5	15. ix.2018	13.30	29.481	82.085	3837	2	Ridgeline, grassland, and forest.
6	15. ix.2018	14.23	29.479	82.086	3875	1	Ridgeline, grassland, and forest.
7	15. ix.2018	14.41	29.477	82.088	3947	1	Ridgeline, grassland, and forest.

**Image 1. Nepal Comma *Polygonium c-album agnicula* 20 October 2017.**

slightly truncate (Evans 1927). We captured *P.c. agnicula* using insect net, handled carefully, photographed, and released. No samples were collected.

We present seven observations of the comma butterfly from 2017 to 2018 (Table 1). The first two observations of *P.c. agnicula* were recorded by authors (Sanej Prasad Suwal, Biraj Shrestha and Binita Pandey) in RNP during their first visit in October 2017 (Table 1). The *agnicula* species were basking on forest trail near the western outlet of Rara Lake and the remaining five observations were in June–Oct 2018 (Table 1). During the first two observations it was seen feeding on nectars of *Aster* sp., and *Anaphali* sp. while during the remaining observations, it was seen basking on the Chuchemara ridgeline trail, south-east of RNP where the habitat comprised of grass lands dominated by *Anaphali* sp. and

Rhododendron forest (Image 3).

Studies on butterflies are scant in the western part of Nepal. A list of butterflies from western region of the country by Smith (1980) and Khanal (1999) does not mention *P.c. agnicula* from RNP and adjoining areas. Our sightings in RNP thus represents new distribution locality of the subspecies for Nepal obtained about 54.17km south-east from Humla, 371.18km north-west from Rasuwa, 213.24km north-east from Manang, 35.34km north-west from Karnali, and 7.52km north-west from Ghurchi lek, Mugu.

The butterfly photographed (Images 1 & 2) has more uniform fulvous above with narrower markings in comparison with the other three subspecies. The wing margins above are not as ashy as in the other subspecies, and on the upperside of the hindwing there



Image 2. Nepal Comma *Polygonia c-album agnicula* 19 October 2017.



Image 3. Habitat of Nepal Comma *Polygonia c-album agnicula* 14 September 2018.

are no yellow spots in the submarginal area. Instead, the submarginal area is represented by a red band, bordered along its inner margin by a broken dark brown postdiscal band (Evans 1932). Along with this there are clear white coloured comma markings on the outer side of hindwing (Evans 1932). All the features mentioned above identify the butterfly as *P.c. agnicula*.

There has been study on butterflies of RNP with a list of 64 species (Bhandari & Gea 2007). Butterflies like Nepal Meadow Blue *Polyommatus nepalensis*, Dusky Hedge Blue *Oreolyce vardhana*, Eastern Blue Sapphire *Heliophorus oda*, and Yellow Wood Brown *Zophoessa nicetas* can be observed in the park area. The subspecies *P.c. agnicula*, however, was not recorded. It appears that the subspecies is fairly distributed from central to western Nepal. Studies from the missing districts along the distribution range Rasuwa to Humla will be crucial in ascertaining the actual distribution status of this subspecies in Nepal.

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