



FIRST RECORDS OF DAKHAN TRICOLOUR PIED FLAT (*COLADENIA INDRANI INDRANI*) AND SPOTTED SMALL FLAT (*SARANGESA PURENDRA SATI*) (LEPIDOPTERA: FAMILY HESPERIIDAE) FROM OUTSKIRTS OF THE RANTHAMBHORE TIGER RESERVE, SAWAI MADHOPUR, RAJASTHAN, INDIA

Dharmendra Khandal and Satish Kumar Sharma¹

Conservation Biologist, Tiger Watch, Maa Farm, Ranthambhore Road, Sawai Madhopur
Rajasthan- PIN – 322001, India

¹ Assistant Conservator of Forests (Retd.), 14-15, Chakariya Amba, Rampura Choraha, Jhadol Road, Udaipur
-313004 (Rajasthan)

*Corresponding Author: Email : dharmkhandal@gmail.com

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ABSTRACT

During recent surveys, we have sighted the Dakhan Tricolour Pied Flat butterfly (*Coladenia indrani indrani*) and the Desert Spotted Small Flat (*Sarangesa purendra sati*) on the outskirts of Ranthambore Tiger Reserve, Sawai Madhopur in eastern Rajasthan. These butterflies from the HesperIIDae family are among the most beautiful butterflies of Rajasthan seen visiting in habitats dominated by *Tridax procumbens*, *Lepidagathish hamiltoniana* and *L. cristata*. During several surveys, we have sighted them only once indicating them to be rare species in the area.

Key words: Rajasthan, Ranthambore Tiger Reserve, *Coladenia indrani indrani*, *Sarangesa purendra sati*, butterflies.

INTRODUCTION

The skipper butterfly *Coladenia indrani* (Moore 1866) is one of the most beautiful butterflies and is widespread in India from Gujarat eastwards to West Bengal and southward to Kerala, Himachal Pradesh to North-East India (Varshney & Smetacek 2015). It is reported from Chhattisgarh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, Tripura, Uttarakhand and West Bengal (<https://www.ifoundbutterflies.org/sp/508/Coladenia-indrani>).

As many as four species of the genus *Coladenia* Moore, (1881) are reported from the Indian subregion, i.e., *Coladenia agni* (de Nicéville 1884), *Coladenia indrani* (Moore 1866), *Coladenia hoenei* Evans, 1939 and *Coladenia agnioides* Elwes & Edwards 1897. The Tricoloured Pied Flat, *Coladenia indrani* is represented by three sub-species in India, namely:

Coladenia indrani indrani (Moore 1866)– Himalayan Tricolour Pied Flat, *Coladenia indrani uposathra*

Fruhstorfer (1911)– Indo-Chinese Tricolour Pied Flat and *Coladenia indrani indrani* Evans (1926) –Dakhan Tricolour Pied Flat.

On July 13, 2020 at about 4.00pm, while wandering the outskirts of Ranthambore Tiger Reserve, Sawai Madhopur, a beautiful butterfly sucking food from the flowers of *Tridax procumbens* drew our attention (Fig. 1 & 2). The area where the butterfly was seen is a private farm locally known as “Dhonk Farm” situated very close to the western outskirts of Ranthambhore Tiger Reserve. Besides *Tridax procumbens*, other species growing in the premises were *Butea monosperma*, *Terminalia arjuna*, *Aegle marmelos*, *Citrus limon* and *Luffa cylindrica*. The surroundings of the farm are well wooded comprising of good growth of *Capparis sepiaria*, *Anogeissus pendula*, *Manilkara hexandra*, *Bauhinia racemosa* and *Acacia leucophloea*. Nitin et al. (2018) reported that *Mallotus philippensis*, *Bauhinia racemosa*, *Dalbergia latifolia* and *Bridelia retusa* are larval host plants

of this butterfly. These plant species are fairly dotted in the nearby forest of Ranthambhore Tiger Reserve. *Coladenia indrani indra* is a medium-sized butterfly with a 40–46 mm wingspan (Fig. 1 & 2). The morphological description of the butterfly matched with the description of Watson (1891) such as the upper side being a bright golden-yellow, forewing with a discal series of four semi-transparent black-bordered spots, a well-defined black spot beneath the cell near the base; exterior margin and cilia blackish, the latter white at the posterior angle; hindwing with a semi-circular sub-marginal series of black spots and two similar inner discal spots; exterior margin black; cilia alternate black and white. Thorax, body and legs yellow; Antennae yellow, tip black; hind wings and body covered with long modified setae (hairs).



Fig. 1. Dakhn Tricolour Pied Flat butterfly (*Coladenia indrani indra*) upper side



Fig. 2. Dakhn Tricolour Pied Flat butterfly (*Coladenia indrani indra*) underside

On July 17, 2020 at about 7.30 am on our next survey in a pastureland in the same area, we observed another beautiful butterfly resting on the ground (Fig. 3 & 4). It was a small sized butterfly identified as the Desert Spotted Small Flat (*Sarangesa purendra sati*).



Fig. 3. Spotted Small Flat (*Sarangesa purendra sati*)



Fig. 4. Spotted Small Flat (*Sarangesa purendra sati*) in its habitat

Sarangesa purendra Moore 1882 (Spotted Small Flat) is a small butterfly, 25-35 mm in size. As per Kehimkar (2016), the butterfly is distributed in Gujrat (Kachchh), Madhya Pradesh, Himachal Pradesh and Uttarakhand in India. A citizen science-based group reported its presence from Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Tamil Nadu, Uttarakhand and Rajasthan.

(<https://www.ifoundbutterflies.org/sp/673/Sarangesa-purendra>).

The four subspecies of *Sarangesa purendra* Moore, 1882 (Spotted Small Flat) in India are *S. purendra purendra* Moore, 1882 in West Himalayan spotted small flat, *S. purendra pandra* Evans, 1949 in hill spotted small flat, *S. purendra sati de* Nicéville, 1891 in the desert spotted small flat and *S. purendra hopkinsi* Evans, 1921 in Dakhan spotted small flat.

The butterfly seen by us matches with Moore's description (1882) such as the upper side of the butterfly is brownish gray with paler mottled markings. Fore wing with a semi-diaphanous white continuous streak across the cell near its end, a continuous small spot above it, three small conjoined spots before the apex, and three on the disk, the middle discal spot large and quadrate. Cilia alternated with grey. Hind wing with a small whitish spot in middle of the cell. In the sub-species *Sarangesa purendra sati de* Nicéville, 1891 (Desert Spotted Small Flat) the margins are prominent, with the exterior margin alternate brown and white.

The feeding of the larval stage of the *Sarangesa purendra* has been reported on the leaves of *Lepidagathis keralensis* in Kerala (<https://www.ifoundbutterflies.org/sp/673/Sarangesa-purendra>). *Lepidagathis cristata* and *L. hamiltoniana* commonly growing in and around Ranthambhore Tiger Reserve are possibly hosts for *Sarangesa purendra sati* in the study area (Singh & Shrivastava 2007).

Ranthambhore Tiger Reserve, popularly abbreviated to RTR is located between 25°30'2" to 26°21'2" N latitude and 75°51'2" to 77°12'2" E longitude, spreading on an area of about 1700 sq. km at an average altitude of 350m above MSL. RTR spreads in the Sawai Madhopur, Karauli, Bundi and Tonk districts of Rajasthan, India. This reserve consists of three protected areas viz., Ranthambhore National Park, Kailadevi Wildlife Sanctuary in the north and Sawai Mansingh Wildlife Sanctuary in the southern side. A part of the forests of Bundi district is also included in the buffer zone of the tiger project area. The Banas and Chambal rivers are important features of the reserve. Physio-graphically, RTR is located over the northern

extension of the great Vindhyan Plateau and older rock system of the Aravallis. The meeting zone of two mountain chains makes the "Great Boundary Fault" here (Singh & Srivastava 2007). This zone is also unique in its location as it is confined to the transition zone between the desert and Central Indian highlands (Rodgers & Panwar 1988).

The Edaphic climax of *Anogeissus pendula* is prominently seen over the gentle slopes of the Aravallis and Vindhyas and the flat open terrain between the hills. The *Acacia catechu* forests are also prominently visible on the flat terrain with extremely poor and calcareous soil conditions. Open areas have been occupied by the grasslands with sparse growth of trees and bushes. The forests of RTR are '5B - Northern tropical dry-deciduous' and '6B - Thorny forests' types (Champion & Seth 1968). A large number of water reservoirs, tanks and criss-cross the landscape. A network of streams and nallas are also present in the reserve.

Rajasthan is rich in butterfly fauna. Various aspects of butterflies have been studied by many workers like McCann (1943), Larsen (1988), Palot and Soniya (2000), Jafer and Soniya (2001), Rathore (2004), Trigunayat (1998,2008), Trigunayat et al. (2008), Trigunayat and Saxena (2009), Sharma (2014) and Sundar et al. (2020). None of the above have been reported *Coladenia indrani indra* and *Sarangesa purendra sati* from Rajasthan. Since both are new records for the state, they are worth placing on record.

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