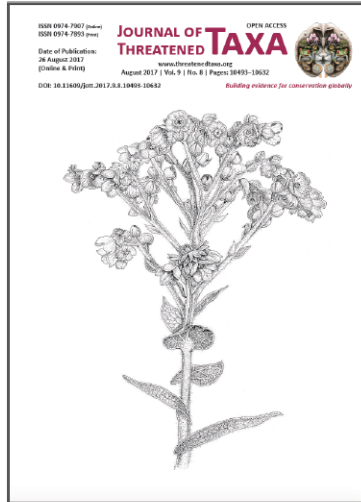


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SHORT COMMUNICATION

FIRST RECORDS OF *ZINASPA TODARA DISTORTA* DE NICÉVILLE, 1887 AND *ARHOPALA RAMA RAMOSA* EVANS, 1925 (LYCAENIDAE: THECLINAE) BUTTERFLIES IN BANGLADESH

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Abstract: *Zinaspas todara distorta* de Nicéville, 1887 and *Arhopala rama ramosa* Evans, 1925 were recorded during the field survey from March 2016 to August 2016. A total of four individuals were recorded in the Adampur Forest and Satchari National Park of Sylhet Division in northeastern Bangladesh. These are the first records of these subspecies from Bangladesh.

Keywords: Adampur Forest, *Arhopala rama ramosa*, Satchari National Park, *Zinaspas todara distorta*.

Zinaspas todara and *Arhopala rama* are two lycaenid butterflies found in the Indian subcontinent. *Z. todara* is known from India (Western Ghats [Goa southwards], Sikkim eastwards, Arunachal Pradesh, Manipur, Nagaland), Nepal, Bhutan, Myanmar, Thailand, Laos and Vietnam (Kehimkar 2008; Gogoi 2012; Inayoshi 2016). The butterfly is represented by three subspecies; (i) *Z. todara todara* (Goa, Tamil Nadu, Maharashtra, Karnataka and Kerala of India) (Mathew 1994; Varshney & Smetacek 2015; IFB 2016), (ii) *Z. todara distorta* (Sikkim, Assam, Meghalaya, Tripura of India) (Varshney &

Smetacek 2015; IFB 2016; Sondhi & Kunte 2016) and (iii) *Z. todara karenia* (Karen Hills to Dawngas in Myanmar, Malaysia, Laos, Vietnam and Thailand) (Pinratana 1981; Inayoshi 2016).

The butterfly *Arhopala rama* is distributed in India (Jammu & Kashmir to Sikkim), Nepal, Pakistan and Bhutan (Kehimkar 2008). It has also been reported from Myanmar, Thailand, Laos and Vietnam (Inoyashi 2016). The butterfly is represented by two subspecies; (i) *A. rama rama* (Pakistan, India [Jammu & Kashmir to Sikkim], Nepal, Bhutan) (Evans 1927; Evans 1957; Varshney & Smetacek 2015) and (ii) *A. rama ramosa* (India [Arunachal Pradesh, Assam, Manipur], Myanmar, Thailand, Laos and Vietnam) (Evans 1927; Singh 2015; Varshney & Smetacek 2015; Inoyashi 2016).

In the present paper, we report the presence of *Zinaspas todara distorta* (Silver Streaked Acacia Blue) and *Arhopala rama ramosa* (Dark Himalayan Oakblue) in Bangladesh from Adampur Forest and Satchari National Park.

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Image 1. Yellow circle showing the spot of recorded species in Satchari National Park and Adampur forest, Sylhet Division, Bangladesh.

MATERIALS AND METHODS

Study area: Adampur Forest: This forest belonging to Rajkandi Reserve Forest (Image 1) is situated in Kamalganj Upazila of Moulvibazar District under the administrative division of Sylhet. It is approximately 80km from Srimangal Town. The forest covers an area of 100km² (approximately) and is divided into Adampur beat, Khurma beat and Kamarchara beat. The prominent plant species of the forest are *Dipterocarpus* sp., *Alangium agallocha*, *Artocarpus chaplasha*, *Anthocephalus chinensis*, *Tectona grandis*, *Lagerstroemia parviflora*, *Ardisia solanacea*, *Hibiscus macrophylus*, *Antides maghasembilla*, *Syzygium grandis*, *Ficus religiosa*, *Ficus benghalensis*, *Ficus glaberrima*, various species of *Bambusa*, *Coccinea cordifolia*, *Eupatorium odoratum* and *Heliotropium indicum*, etc., (Muzaffar et al. 2010).

Satchari National Park: It is situated in the northeastern part of Bangladesh in Sylhet Division (Image 1). The park comprises 2.43km² of forest carved out of the Raghunandan Hills Reserve Forest in the Satchari Range, situated nearly 130km northeast of Dhaka. Administratively, the park is located in Chunarughat Upazila, an administrative subdistrict of Habiganj District. India borders the park to the south and other adjacent lands are under tea estates, rubber and agar (*Aquilaria* sp.) plantations and paddy fields. The area was previously classified as mixed evergreen forest, but the large-scale conversion of indigenous forest cover to plantations has resulted in the reduction in area under natural forest and secondary forest (Choudhury et al. 2004).

Methods

Butterflies were sampled by visual estimation and surveys undertaken opportunistically, employing no particular methods (Chowdhury 2014; Singh & Kitching 2014). The study was started in May 2014 and continued until August 2016. During the study period, we surveyed the butterflies of five protected areas (Rajkandi Reserve Forest, Lawachara National Park, Madhabkunda Eco Park, Satchari National Park and Rema-kalenga Wildlife Sanctuary) of Sylhet Division. As part of this survey *Zinaspis todara distorta* and *Arhopala rama ramosa* were recorded in the Adampur Forest of Rajkandi Reserve Forest and Satchari National Park respectively. Species identifications were done following available literature (Evans 1927; Evans 1932; Wynter-Blyth 1957; Kehimkar 2008). Specimens were only photographed. Due to lack of permission specimens were not preserved.

RESULT AND DISCUSSION

Silver Streaked Acacia Blue *Zinaspis todara distorta* (Images 2–3): One individual of *Zinaspis todara distorta* was recorded in Adampur Forest (24.26280278 N & 91.91277778 E) on 06 March 2016 at an elevation of 93m and another individual was recorded on 27 August 2016 at 12:00hr at Satchari National Park (24.14528333 N & 91.43944444 E) at an elevation of 36.6m. Both individuals were resting on leaves at a height of 1.5m from the ground.

According to Evans (1927) and Kehimkar (2008) the morphological characteristics of *Zinaspis todara* are:

Under side of fore wing: Pale brown, glossed with wine color. Wavy silvery discal line present. Costal and



Image 2. *Zinaspia todara distorta* recorded at Satchari National Park.



Image 4. *Arhopala rama ramosa* was recorded at Adampur forest.



Image 3. *Zinaspia todara distorta* recorded at Adampur forest

cell spots absent. Pale metallic blue line presents, which is 1–4mm wide at apex, a black spot at end of cell. Below darker and markings rather differently arranged, being a cross between no. 4 and no. 1. Discal line obliquely bent from v3 to costa.

Under side of hind wing: Tailed at vein 2. Irregular silvery line at base, another passing through the end of the cell, and a third in outer discal area. Central line as in no. 1 and post-discal line obscure as in no.1

The above described morphological characteristics of *Zinaspia todara* completely match with our photographed specimens so there is no doubt about the identification of the genus and species. However, the distribution record of the subspecies *Z. t. distorta* was close to our study area, so it should be *Z. t. distorta* and not *Z. t. todara*.

Habit and Habitat: *Zinaspia todara* was seen in the Himalayas up to 400m in March, and May to September in southern India. The recorded larval host plants of this species were *Acacia pennata*, *Acacia torta* and *Acacia suma* of Family Mimosaceae (Kehimkar 2008). Adults are attracted to sweat-lined clothes (Sondhi & Kunte 2016).

The status of the species was uncommon as noted by

Evans (1932). Kehimkar (2008), however, reported the species to be common. Tytler (1915) also reported the species was common at low elevations in Manipur.

Dark Himalayan Oakblue *Arhopala rama ramosa* (Image 4): Two individuals of *Arhopala rama ramosa* were observed in the Adampur Forest (24.26816389 N & 91.90555556 E) on 14 April 2016 at 14:30hr at an elevation of 72m. Both were resting on leaves at a height of 1.0m above ground level.

According to the description of Singh (2015) *Arhopala rama* can be easily distinguished from other similar species like *Arhopala athada* and *Arhopala atrax* by the presence of a tail on the hind wing and not conspicuously lobed at tornus. The species is purple brown below.

The distinguishing characteristics of the two subspecies, *rama* and *ramosa* are as follows:

Arhopala rama ramosa Kollar, 1848 has underside markings dull and faint. Upper side, in male: dull and faint line 1 and half to 2mm wide. Female dull and faint line 4–7 mm wide and on hind wing blue colour just before the end of the cell (Evans 1932, 1957).

Arhopala rama ramosa Evans, 1925 has underside markings darker and better defined. Upper side male dull and faint line 1mm on forewing and on hind wing just under 1mm. Female purple colour extends beyond cell. It is darker below and more purple washed (Evans 1932, 1957).

According to the identifying characteristics our recorded species was *Arhopala rama ramosa*.

Habit and Habitat: Smetacek (2011) reported *A. rama*, which is on the wing throughout the year and appears to have a brood during the winter months at 1500m elevation in Maheshkhan Reserve Forest, Uttarakhand. It has been bred on *Quercus leucotrichophora* (Oak) in neighbouring Garhwal (Wynter-Blyth 1957) and this is presumably their host plant in the area.

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Article

Floristic diversity of Bhimashankar Wildlife Sanctuary, northern Western Ghats, Maharashtra, India

-- Savita Sanjaykumar Rahangdale & Sanjaykumar Ramlal Rahangdale, Pp. 10493–10527

Communications

The ecology and distribution of Flying Foxes (Chiroptera: Pteropodidae: *Pteropus*) in Tanintharyi Region, Myanmar with a first mainland record of *Pteropus hypomelanus geminorum* from Myeik

-- Khin Swe Oo, Hsu Lae Win, Paul J. J. Bates & Malcolm J. Pearch, Pp. 10528–10537

A reassessment of the avian species diversity in the Eastern Ghats of Tamil Nadu, after the Vernay Survey

-- J. Patrick David, R.J. Ranjit Daniels & Vinoth Balasubramanian, Pp. 10538–10550

Angiosperm diversity in Doaba region of Punjab, India

-- Kuljinder Kaur, M.C. Sidhu & A.S. Ahluwalia, Pp. 10551–10564

Short Communications

Adventitious rooting of mature *Cycas micronesica* K.D. Hill (Cycadales: Cycadaceae) tree stems reveals moderate success for salvage of an endangered cycad

-- Thomas Edward Marler & Gil Naputi Cruz, Pp. 10565–10570

A new record of Harlequin Shrimp (Malacostraca: Decapoda: Palaemonidae: *Hymenocera picta* Dana, 1852) in the southern Mexican Pacific Reefs

-- Omar Valencia-Mendez, Andres Lopez-Perez, Betel Martinez-Guerrero, Virgilio Antonio-Perez & Eduardo Ramirez-Chavez, Pp. 10571–10576

First report of soft coral *Sarcophyton birkelandi* Verseveldt, 1978 (Anthozoa: Alcyonacea) in Indian waters from Andaman Islands

-- Seepana Rajendra, C. Raghunathan, Tamal Mondal & K. Venkataraman, Pp. 10577–10580

First records of *Zinaspia todara distorta* de Nicéville, 1887 and *Arhopala rama ramosa* Evans, 1925 (Lycaenidae: Theclinae) butterflies in Bangladesh

-- Tania Khan, Mohammad Quamruzzaman Babu, Mohammad Ashraf UI Hasan, Tahsinur Rahman Shihan & Prosenjit Debbarma, Pp. 10581–10584

Birds of the Kerala Agricultural University campus, Thrissur District, Kerala, India - an update

-- K. Abha Manohar, Arjun Ramachandran, M.S. Syamili, E.R. Sreekumar, Nithin Mohan, J. Anjali, Abinand Reddy & P.O. Nameer, Pp. 10585–10612

Wintering of the Grey-headed Lapwing *Vanellus cinereus* (Aves: Charadriiformes: Charadriidae) in Kerala, India

-- R. Roshnath, Pp. 10613–10617

Notes

Additional record and conservation measures of *Ceropegia odorata* Nimmo ex J. Graham from Gujarat State, India

-- S.K. Patel, B.L. Punjani, P.R. Desai, V.B. Pandey, Y.S. Chaudhary & P.N. Joshi, Pp. 10618–10622

Records of the Palni Hills Rudraksha Tree *Elaeocarpus blascoi* (Oxalidales: Elaeocarpaceae) in Palni Hills, Tamil Nadu, India

-- Robert Stewart & Tanya Balcar, Pp. 10623–10625

A checklist of butterflies (Insecta: Lepidoptera) from Taleigao Plateau, Goa, India

-- Dipak Bowalkar, Nadar Anal Gracy Michael, Kiran Gaude & I.K. Pai, Pp. 10626–10630

A rare sighting of the Long-tailed Duck *Clangula hyemalis* (Linnaeus, 1758) (Aves: Anseriformes: Anatidae) over a four-week period in northwestern India: first detailed scientific documentation in 73 years

-- Pushpinder S. Jamwal, Pankaj Chandan & Rohit Rattan, Pp. 10631–10632