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A New Record of Butterfly *Sinthusa nasaka* Horsfield, 1829 (Lepidoptera: Lycaenidae) for Bangladesh

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Abstract

A butterfly species, *Sinthusa nasaka* Horsfield, 1829 (Narrow Spark) is recorded for the first time from the Rampahar (22°29'50.95" N & 92°11'09.44"E) of Kaptai National Park under Rangamati District in Bangladesh. Three individuals of *Sinthusa nasaka* were recorded in the butterfly species diversity survey during December 2014 to June 2015 in this Park. Supplementary data on morphology, habitat ecology and geographical range of this species are given.

Keywords: *Sinthusa nasaka*, new record, *Leea indica*, Bangladesh

1. Introduction

Butterflies are the most beautiful and best-known of all the flying insects. This colorful insect is found ubiquitously in the world except for the continent of Antarctica. However, the highest numbers of butterflies live in the tropical areas, including Bangladesh. They are one of the most important assemblages of insects that act as biodiversity indicators as well as nature's gardeners. Owing to habitat destruction for developmental activities in urban environment and unscientific management of natural resources, much of our native butterflies are fast disappearing and at present, their survival is under threat^[1,2]. Studies about butterfly diversity, behaviour and host-nectar plant relationship in Bangladesh are scanty and few studies about butterflies have been done in different years, in different parts of the country. According to published data, a total of 329 species of butterflies have been recorded in Bangladesh^[3-30]. The objective of the present survey is the part of the assessment of the diversity and seasonal abundance of butterflies in Kaptai National Park. Therefore, this paper presents the new record of *Sinthusa nasaka* from the Rampahar (22°29'50.95" N & 92°11'09.44"E) of Kaptai National Park, Rangamati District of Bangladesh.

2. Methods and materials

2.1. Study area: Kaptai National Park (22°30.08' N latitude and 92°16.02' E longitude) located in the Kaptai sub-district under Rangamati district on the south-eastern part of Bangladesh. It has an area of 5464.8 hectares and is 1600 ft. high from sea level^[31]. It is one of the major butterfly habitats in this country and almost all butterfly families available in Bangladesh are seen in this park and the total number of butterfly species exceeds 200 in the forest areas, although the actual count of species is still incomplete. These forests and plantations areas maintain a considerable number of trees, vines, climbers, hedges, shrubs, brushes and grasses. The rich plant diversity of this park provides many suitable niche areas for butterflies^[28].

3. Method

A study was carried out in the Kaptai National Park during December 2014 to June 2015 to survey the diversity of butterflies. During this survey period *S. nasaka* were observed with naked eyes and photographed with a Canon EOS 1100D DSLR and 55-250mm Canon lens. A single specimen was caught with insect net for identification and measurement. After taking the measurements, the specimen was released immediately without harm. This specimen was not collected for preservation in the laboratory due to lack of permission from the Bangladesh Forest Department. The place, activities, resting tree, time and GPS coordination were noted instantly. Identifications were confirmed with the help of literatures by Evans (1932),

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Wynter-Blyth (1957), Kehimkar (2008) and Gogoi (2013) [32, 33, 34, 35, 36, 37, 38]. Description of the species morphology was

further prepared with the help of the published literature of Lo *et al.* 2006 [39].

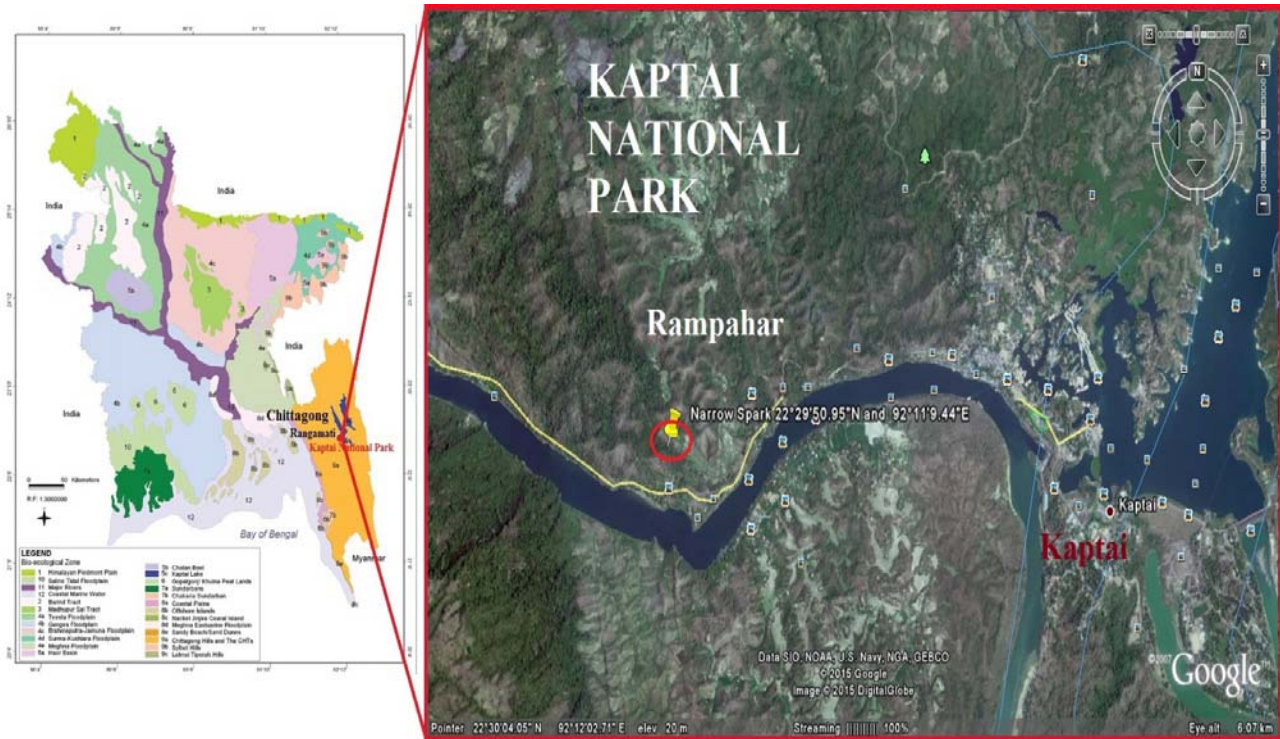


Fig 1: Location of the place of first record of the *Sinthusa nasaka*, Rampahar, Kaptai National Park, Rangamati.

4. Result and Discussion

Members of genus *Sinthusa* of family Lycaenidae are small and very rare. Three species namely *S. vigro* Elwes 1887, *S. chandrana* Moore 1882 and *S. nasaka* Horsefield 1829 are recorded under the genus *Sinthusa* in India [40]. Previously Larsen (2004) mentioned the probable occurrence of genus *Sinthusa* and species *S. chandrana* but no record of *S. nasaka* was found in the published literature and collected preserved specimen in Bangladesh.

A single individual of *S. nasaka* was first recorded on 15 May 2015 at 08.14 am +06 GMT and two individuals were recorded on 11 June 2015 at 9.30 am +06 GMT in the Rampahar (22°29'50.95" N & 92°11'09.44"E) of Kaptai National Park. During the observation period they were found feeding on the nectar of *Leea indica* (Family: Vitaceae) flower and standing on the branch of flower. Upon human disturbance, they immediately took flight and settled on the very first flower of the same tree. After several minutes it returned to its original position for feeding. We found three individuals on the flowers of *L. indica* beside the running watery trail in the park. We noticed that they shared their habitat with Copper Flash (*Rapala pheretima* Hewitson, 1863), Indigo Flash (*R. varuna* Hewitson, 1877), Chestnut Bob (*Iambrix salsala* Moore, 1865), Cornelian (*Deudorix epijarbas* Moore, 1857) and Suffused Flash (*R. suffusa* Moore, 1878) on the same plant.

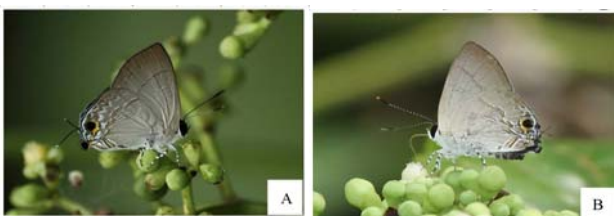


Fig 2: A- Adult *Sinthusa nasaka* resting in the *Leea indica* flower. 11 June 2015. B- Adult *S. nasaka* feeding on the nectar of *L. indica* flower. 15 May 2015. C & D- Adult *S. nasaka* share habitat with other species. 11 June 2015. (Photographs © Tahsinur Rahman Shihan)

4.1. Morphology: *Wingspan:* 26mm. *Forewing:* termen, costa slightly convex, dorsum convex at base. Ground colour of upperside oily blue. Ground colour of underside brownish grey. Cell-end stripe forming double pale brown bars. Post-discal band brownish orange bar outwardly edged with thin white line; submarginal and marginal bands faint, only slightly darker than ground colour. *Hindwing:* white-tipped tail present; tornal lobe present but small. Ground colour of upperside bright blue, tornal lobe with orange and metallic blue scaling. Ground colour of underside brownish grey. Cell-end stripe forming double pale brown bars. Post-discal spot forming brownish orange broken bar edged with black and white line on both sides. Submarginal and marginal bands zigzag shaped and barely seen. A dark spot enclosed by orange circle in space of cubital one, orange and metallic blue patch in space cubital two. Tornal lobe dark brown with metallic blue scaling.

4.2. Habitat ecology: *S. nasaka* inhabits woodlands and dense scrublands. Adults are found in April, May and September and are largely confined to hill forests up to 1820 m. Rapid flight

is an inherent physical characteristic and often settles on vegetation for short periods. Males are rarely seen while females appear to be more commonly sighted. Besides *L. indica*, adults are attracted to flowers and were observed taking nectar from *Mikania micrantha* and *Litchi chinensis*. *S. nasaka* behaves like a combination of two fairly common species (*S. chandrana*-like habit and *Rapala manea*-like appearance). This probably explains the lack of human sighting reports and void in scientific research and study in earlier observational studies even though it has a fairly wide area of distribution^[34, 39]. *Larval host plant: Eurya acuminata* (Theaceae)

4.3. Geographical range: One individual of *S. nasaka* (Narrow Spark) was recorded in September from Jeypore-Dehing forest, eastern Assam, India^[35]. The species is distributed from Sikkim-Burma and is reportedly rare as per Evans 1932^[34]. It is undoubtedly a multivoltine species. *Sinthusa* Moore, 1884, comprises about a dozen small species^[41], and is mainly sighted in areas of geographical distribution that range from India to Taiwan, including Sundaland, the Philippines and Sulawesi^[42] but the areas of geographical distribution of the *S. nasaka* in China (Hong Kong, Fujian, Guangxi and Hainan), Sikkim to Burma, Thailand, Laos, India (Meghalaya, Alipurduar, Darjeeling, Jalpaiguri and Nagaland) and Sunderland^[40, 42, 43, 44, 45, 46].

5. Conclusion

Kaptai National Park currently is under great threat of human settlement extension, over use of forest products through the reduction of trees for fuel and furniture, extension of cultivation land and burning of under growth of forest floor. The existence of the adult *S. nasaka* indicates that this forest has a good habitat of host plant for this butterfly species and proper conservation tools are recommended for saving this butterfly habitat.

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