



ISSN 2320-7078  
JEZS 2014; 2 (3): 197-200  
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Received: 17-04-2014  
Accepted: 17-05-2014

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## Five New Records of Butterfly Species from Dhaka, Pirojpur and Cox`S Bazar Districts in Bangladesh

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### ABSTRACT

A study from December 2012 to March 2014 on several different taxonomic groups including lepidoptera, odonates, fishes, amphibians, birds, aquatic mammals of Dhaka, Pirojpur and Cox`s bazar districts in Bangladesh. Five new species of butterflies (*Tarucus balkanicus*, *Freyeria putli* and *Prosotas bhutea* from family Lycaenidae, *Cephrenes acalle* from family Hesperidae and *Abisara bifasciata* from family Riodinidae) are newly recorded as geographical distribution.

**Keywords:** Butterfly, New record, Distribution, Bangladesh.

### 1. Introduction

Exact numbers are not known since there are about 16,823 species of butterflies spread throughout almost the entire world, (Landing, 1984). Very few studies on butterfly fauna in Bangladesh are well documented. But it is important to know the exact number of butterfly species that currently exist due to its pollination activities and food source for others organisms like insects, spiders, amphibians, reptiles, birds and mammals. Their taxonomic placements are essential to compile the checklist through systematic data collection from all parts of the country and need to be updated time to time. However, In 2004 IUCN took first attempt to create a complete checklist about butterfly fauna in Bangladesh by famous lepidopterist Torban B Larsen. IUCN checklists of butterflies (2004) were recorded 236 species directly identified by Larsen. Furthermore, Encyclopedia of Flora and Fauna of Bangladesh, mentioned 148 butterfly species. Monwar Hossain Tuhin, Professor of department of zoology, Jahangirnagar University was recorded 225 butterfly species with pictorial evidence from all over the Bangladesh entire his book. In addition there are some regional works have been done on butterfly checklist such as 158 species from Savar, Dhaka (Islam, 2011); 49 species from Tangail (Khan, 2001); 37 species from Sundarban (Hossain M, 2014). There are 16,823 butterfly species recorded from all over the world, 1501 species recorded in India, 651 species in Nepal, 242 species in Sri Lanka, 237 species in Japan, and 1182 species in Malaysia (Gaonkar, 1996; Islam, 2011). In Bangladesh, few works are available on butterfly species diversity and status. Moreover, there is no particular documented record of total number of butterfly species in Bangladesh region. The objective of this study is to identify butterflies to contribute the butterfly checklist of Bangladesh.

### 2. Materials and methods

Butterflies were collected by Amit Kumer Neogi, When the opportunity arose during biodiversity surveys on several different taxonomic groups including lepidoptera, odonates, fishes, amphibians, birds, aquatic mammals on three different areas of Bangladesh e.g. Dhaka district, Pirojpur district and Cox`s Bazar (St. Martin`s Island) district from December 2012 to March 2014. The observations were made from 07.00 am to 06.00 pm in summer and 7.00 am to 5.00 pm in winter season. Sometimes surveys were conducted at night for amphibians also. Butterflies were primarily identified directly in the field by capture or Photograph by using camera model no. Fujifilm HS35 EXR. Few cases specimen collected with sweep nets, place in a plastic bottle, plastic bag and carried to laboratory for further identification. Specimens were killed also by killing jar with chloroform and reserved it in a plastic bottle. Sometimes specimens are caught for identification and then it releases without any harm. Collected butterflies were identified using field guides and followed the identification key developed by Evans, 1932. Vouchers of collected

specimens and citation number of each specimen are reserved in the Entomology laboratory, Department of Zoology, Jagannath University and taxonomic and morphological studies equipments is supplied by Entomology laboratory, Department of Zoology, Jagannath University, Dhaka, Bangladesh.

### 3. Results & Discussions

We do not know the exact numbers of species in an area are being discovered every year. In some cases these species simply haven't been recorded from the area before even though they are known to occur elsewhere. In other cases new recorded are being described by scientists. Because of these we do not even know the total number of species that occur in Bangladesh. Clench (1979) stated that, a regional list will never be complete, but as the number of collecting man-hours in the study area increases, the closer to completeness the list becomes. However, the species of Lycaenidae and Hesperidae families often pose a great challenge of identification, with many look alike with very similar features. Over the years, Butterfly Circle did some misidentifications, and now adopted greater rigor in validation before establishing the identification of a species for inclusion into the Bangladeshi butterfly Checklist.

5 new species of butterflies are recorded from 3 different areas of Bangladesh. These butterflies are recorded from Dhaka, Pirojpur and Cox's Bazar (St. Martin island) districts of Bangladesh.

#### I. Little Tiger Pierrot (*Tarucus balkanicus* Freyer, 1844).

##### Family: Lycaenidae

##### Sub-family: Polyommatae

*Tarucus balkanicus* (Little Tiger Pierrot) is recorded for the first time in Bangladesh from Birulia, Savar, Dhaka. Date- 28/08/2013, Time- 1.25 PM (GMT +06:00), GPS Coordination: 23°50'N and 90°20'E (fig. 1).

This small butterfly is belongs to the Lycaenidae or blue family. Distribution of *T. balkanicus* is Mauritania, Sudan, Uganda, Saudi Arabia, United Arab Emirates, Oman, Algeria, south-eastern Europe, Asia, Middle East, Syria, Iran and North Africa. Also have a subspecies *Tarucus balkanicus nigra* Bethune-Baker, 1918 (Black-spotted Pierrot) found in southern part of India.

In Bangladesh have only three recorded species under *Tarucus* genus from previous. Those are *Tarucus callinara* Butler 1867; *Tarucus venosus* Evans, Moore 1882; *Tarucus nara* kollar, 1848 and have recorded one sub-species *Tarucus balkanicus nigra* Bethune-Baker 1917. *T. balkanicus nigra* a sub-species *T. balkanicus nigra* was recorded from North region in Bangladesh (Dinajpur) by Evans and some areas of Dhaka region (Larsen, 2004). But *Tarucus balkanicus* was not recorded previous before our present study in river side area's butterflies of Turag River.

**Morphological Characteristics:** Wingspan of *Tarucus balkanicus* 23-28 mm, Flight low over grasses and shrubs, hind wing tailed, under wing white with prominent black streak like as *Tarucus nara* and *Tarucus venosus*. Under wing white with prominent black streak in under forewing cell. Upper wing of male in *T. balkanicus* is dull blue color, black marks elongated into streaks rather than rounded spots. 3 black spots present in between subapical and postdiscal interspace of upper forewing just side of costa area of male *T. balkanicus*. Under wing makings are variable especially in dry season form.

#### II. Bhutya Lineblue (*Prosotas bhutea* de Nicéville, 1883)

##### Family: Lycaenidae

##### Sub-family: Polyommatae

A new *Prosotas* species *Prosotas bhutea* from blues family (Lycaenidae) under the *Prosotas* genera for the first time in Bangladesh reported from national botanical garden of mirpur-1, Dhaka. GPS Coordination: 23°49'N and 90°20'E Date: 28-11-2013, Recorded Time- 9:42 AM (GMT +06:00) (fig. 2).

According to previous survey we have 5 *Prosotas* sp. such as *prosotas nora* airdates Moore, 1875; *Prosotas pia marginata* Tite, 1963; *Prosotas aluta coelestis* Wood-Mason & de Nicéville, 1886 ; *Prosotas dubiosa* indica Evans, 1925; *Prosotas lutea sivoka* Evans, 1910 (Larsen, 2004).

**Morphological Characteristics:** Wingspan of *Prosotas bhutea* 25-27 mm. Hind wing of *Prosotas bhutea* tailed. Under part dark brown with or without yellowish tinge. Bands on under wing narrow, only slightly darker than background color. Basal band on under fore wing confined to cell, discal band is not bellow vein 2 or 1 dot in space 1b.

#### III. Oriental Grass Jewel (*Freyeria putli* Kollar, 1844).

##### Family: Lycaenidae

##### Sub-family: Polyommatae

A tiny species from blues family (Lycaenidae) is reported from Arakul of South Keraniganj, Dhaka. GPS Coordinate: 23°41'N and 90°23'E Date: 24/01/2014, Time- 11:44 am (GMT +06:00). In the location of this coordination a small group has been found and is still in existence. *Freyeria putli* is very difficult to identify because it is easily overlooked. Size and it's similarity is as same like with the common grass blues in the field.

In Bangladesh *Freyeria putli* have no confirm record from previous. This species is counted in IUCN Checklist depending on guess. It known as Eastern Grass Jewel from Calcutta and from the Arakan (Larsen, 2004), but *Freyeria trochilus* Freyer, 1845 have record from several location. Such as Gazipur, Comilla, Kishoreganj, Panchagar, Narsingdi & Bandarban (Lama) districts of Bangladesh. Butterflies of Bangladesh (fig. 3).

**Morphological Characteristics:** Wingspan of *Freyeria putli* is 12-16 mm. Its habitat is open, drier location. Flight close to the ground. Adult hind wing tailless, under part of *Freyeria putli* grey to light brown. 2 black spots crowned with metallic color present in hind wings margin.

#### IV. Plain Palm-Dart (*Cephrenes acalle* Höpffer, 1874)

##### Family: Hesperidae

##### Sub-family: Hesperinae

From family Hesperidae under *Cephrenes* genera is reported from two different area National botanical garden, Dhaka & Teknaf, Cox's Bazar for the first time in Bangladesh. GPS Coordination: 23°50'N and 90°20'E, Date: 22/02/2014, Time- 01:11PM (GMT +06:00) and GPS Coordinate of St martin's Island, Teknaf, Cox's Bazar: 20°36'N and 92°19'E, Date: 01/03/2014, Time-01.15PM (GMT +06:00) (fig. 4a & 4b).

In IUCN checklist 2004 it was counted based on guesses. The plain palm dart was regularly caught in Calcutta and was found in Cachar. According to Larsen it must be in Bangladesh (Larsen, 2004).

**Morphological Characteristics:** The Wingspan of *Cephrenes acalle* is 42-44 mm. The adults, especially the males, are similar to *Telicota spp.* but are generally larger than *Telicota spp.* Male is dark brown with orange-yellow markings, which includes on the forewing, a post-discal band running from dorsum to vein 6 and three sub-apical spots, and on the hindwing, an orange-yellow discal band, central streaks and tornal cilia. The female's markings are usually much sullied and the hind wing beneath has an oily sheen and may be colored green, bluish and purple.

**V. Double-banded Judy (*Abisara bifasciata* Moore, 1877)**

**Family:** Riodinidae

**Sub family:** Nemeobiinae

*Abisara bifasciata* is first time reported from Tushkhali, Pirojpur district. Another species from family Riodindae under *Abisara*

genera is recorded for the first time confirm record in Bangladesh. GPS Coordinate: 22°21' N and 89°55' E, Date: 14/02/2014, Time-12:28 PM (GMT +06:00) (fig. 5).

**Morphological Characteristics:** Wingspan 42-50 mm. More active during afternoon and evening, flying up and down paths and clearing with an erratic jerky flight likely as another individual species under the abisara genera *Abisara echerius suffuse* Moore, 1882 which is first record was by Abdul Razzak from the Jahangirnagar University campus April 2003 (Larsen TB, 2004). *Abisara bifasciata* have reddish brown wings color with greenish eye. Hind wing of *Abisara bifasciata* not pointed tailed, prominently toothed at vein 4 and and possess 2 or more prominent ocelli near the apex. The hind wings & forewings of *Abisara bifasciata* never held parallel to each other.



**Fig 1:** *Tarucus balkanicus* (Savar, Dhaka, 28.08.13)



**Fig 2:** *Prosotas bhutea* (NBG, Dhaka, 28.11.13)



**Fig 3:** *Freyeria putli* (Keraniganj, Dhaka, 24.01.14)



**Fig 4(a):** *Cephrenes acalle* UN (Cox's Bazar, 01.02.14)



**Fig 4(b):** *Cephrenes acalle* UP (Cox's Bazar, 01.02.14)



**Fig 5:** *Abisara bifasciata* (Tushkhali, Pirojpur, 14.02.14)

#### 4. Conclusion

Addition of new five species of butterfly in our butterfly checklist is a significantly contribution for butterfly fauna of Bangladesh. This kind of finding is significantly important in updating the status and distribution of butterfly fauna of Bangladesh.

#### 5. Acknowledgements

Authors would like to acknowledge Ashok Sengupta, Peter Smetacek, Sunny Chir, Haneesh Km, Tarun Karmakar for their valuable suggestion during survey period and reconfirmation of these species. Authors also thankful to Tanvir Ahmad Shaikot and Anik Chandra Mandal for their excellent participation during survey time. Authors are thankful to Professor Dr. Md. Saiful Islam, Chairman, Department of Zoology, Jagannath University, Dhaka -1100 for his encouragement during the study. This research work was supported by Ministry of Science and Technology, Bangladesh under special research grants for 2012-2013.

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