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Confirmation, distribution and updated status of *Tarucus venosus* Moore, 1882 in Bangladesh.

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Abstract
The butterflies of Bangladesh are not well documented. Till now 300 butterfly species have been recorded, however it is predicted that Bangladesh contains 200-250 undiscovered butterflies. In current research, we are documenting the confirmatory presence of *Tarucus venosus* and its distribution in Bangladesh. From our several excursions in the diverse regions of Bangladesh, we have recorded the presence of *T. venosus* from Gazipur, Manikgonj, Dhaka, Mymensingh, Narsingdi, Rajshahi and Sylhet at different times of the year. Moreover the butterfly was found to be mating and also collecting nectar from different available flowering plants of Bangladesh. All these findings strongly confirm the presence and wide-ranging distribution of *T. venosus* in Bangladesh.

Keywords: Butterfly, *Tarucus venosus*, distribution, Bangladesh.

1. Introduction
Butterflies are considered to belong to one of the most studied orders of class Insecta [1]. In last few years many studies have been carried out on butterflies by entomologists, biologists and naturalists. Butterflies play crucial role in pollination and hence thought as an important element of ecosystem [2]. Moreover, they are considered as good ecological indicators because of their sensitivity towards the environment and climate change [3]. Bangladesh is a land of floral and faunal diversity. Although the diversity of plants, mammals, birds and reptiles is well documented in Bangladesh, the butterflies are not [4]. The scientists are working on the diversity and distribution of butterflies and 300 species have been recorded from Bangladesh till date [5, 6]. However the record is not conclusive, it is expected that Bangladesh harbors approximately 500-550 butterfly species [5]. With a view to record new species from Bangladesh exploration should be continued.
Tarucus venosus Moore, 1882 is a butterfly of Lycaenidae family. The status of the butterfly is quiet ambiguous in Bangladesh. *T. venosus* was recorded from Rajshahi [7]; however Torben B. Larsen was not satisfied with the identification. [5]. Hereby, in current research we are presenting confirmatory evidence of *T. venosus*, its distribution and updated status in Bangladesh.

2. Material and Methods
The butterfly was recorded from different regions of Bangladesh during the survey from March 2013 to July 2014. The specimens were photographed using Canon 600D camera with 55-250 mm lens. The samples were collected only in cases when both underside and upper side were not available for photography. The specimens were identified with the help of available keys [8, 9, 10, 11, 12, 13, 14].

3. Results and Discussion
Tarucus venosus has been recorded from Manikgonj, Mymensingh, Dhaka, Gazipur, Narsingdi, Rajshahi and Sylhet regions of Bangladesh (Fig 1). *T. venosus* was first recorded from Baliati jamidar bari, Manikgonj district, in coordinate of 23° 59′ 40.37″ North and 90° 02′ 33.32″ East at 22 March 2013 on the plant of *Vinca rosea*. Associate plants were *Acmella ciliate, Tridax procumbens, Ixora Coccinea, Oxalis corniculata*.

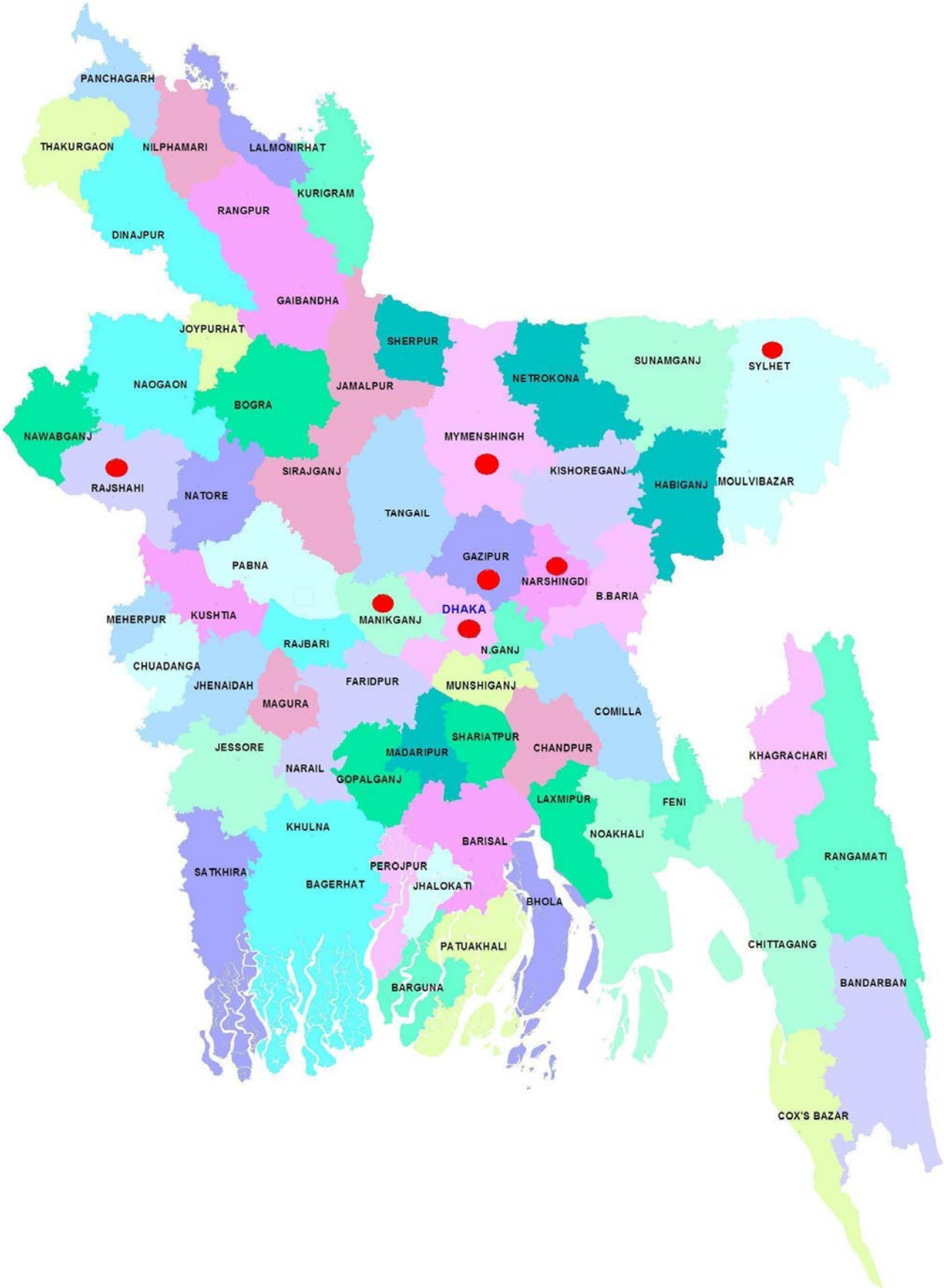

Fig 1: Locations of *T. venosus* occurrence in Bangladesh

T. venosus has another record from Bangladesh Agriculture University, Mymensingh during May 2013 on Grass in coordinate of 24° 43′ 21″ North and 90° 26′ 02″ East. The campus is well known for its floral diversity and the major plant species of this area are *Mangifera indica, Musa sapientum, Shorea robusta, Polianthes tuberose, Hibiscus rosa chinensis, Bougainvillea grabra* etc [15].

Bhawal National Park, Gazipur is a renowned deciduous forest of Bangladesh. We have one record of *T. venosus* from the National Park, on 25 November 2013 in coordinate of 24°05′ 23.51″ N and 90°24′28.00″ E. The specimen was photographed in sitting position on *Mimosa pudica*.

We have several records of *T. venosus* from different arena of Dhaka. On November 9, 2013 two female specimens were recorded from National botanical garden in the coordinate 23° 48′ 57.53″ N & 90° 20′ 54.33″ E on the plant of *Cuphea hyssopifolia*. On May 22, 2014 one male specimen was recorded from Ramna park in the coordinate of 23° 44′ 17.36′ N and 90° 23′ 57.99″ E on the plants of Bachelor's bottom flower. Associate plants were *Tridax procumbens, Cuphea hyssopifolia, Grass, Acmella ciliata, Urena lobata, Mirabilis jalapa, Cosmos spp, Helenium autumnale, Sida aquta, Richardia scabra, Grangea maderaspatana, Galinsoga parviflora, Oxalis corniculata, Jatropha spp, Duranta spp, Hyptis spp, Zigyphus mauritiana, Lippia geminate* etc.

We have one record of *T. venosus* from Narsingdi. The specimen was recorded from our butterfly survey during June 2014. On June 12 the butterfly was photographed in the coordinate of 23° 56′ 21.61″ N and 90°37′56.41″ E while it was resting on a *citrus* plant. The associated plant species of the area are *Mangifera indica, Syzygium cumini, Zizyphus mauritiana, Bougainvillea grabra, Lucas aspara* etc.

In Rajshahi, during the butterfly survey on June 2014, we got a large group of *Tarucus venosus* on the plant *Tridax procumbens* on June 15 from Rajshahi University campus. We collected perfect male and female specimens in the coordinate of 24°22′07.68″ N and 88°38′49.15″ E and also observed their courtship. Other associated plants were *Zigyphus mauritiana, Lantana camara, Calotropis gigantean, Lucas aspara, Citrus* spp etc.

Fig 2: Ventral (A) and dorsal (B) view of T. venosus

We have several records of *T. venosus* from different parts of Sylhet. On June 26, 2014 several specimens were recorded from Tilagor Eco-Park in the coordinate of 24°54′49.0″ North and 91° 54′14.2″ East on the plants *Lucas aspara*, *Clerodendrum viscosum*, and grass. Other associated plants were *Lantana camara, Lucas aspara, Stachytarpheta jamaicensis, Cuphea hyssopifolia, Sida acuta, Pseudomussaenda flava* etc. On 6th July 2014 one specimen was recorded from Shahjalal University of Science and Technology (SUST) campus in the coordinate of 24°55′09.06″ N and 91°49′54.24″ E on *Lucas aspara* (fig 2). Associated floral community of the campus area was *Swietenia macrophylla, Terminalia arjuna, Lagerstroemia speciosa* and *Clerodendrum viscosum*.

4. Conclusion

These records decisively confirm the presence of *T. venosus* in Bangladesh. Moreover specimens of the species have been recorded from different regions of the country like Manikgonj, Gazipur, Mymensingh, Dhaka, Narsingdi, Rajshahi and Sylhet which are characteristically disparate with their integral environment and floral community. The presence of the butterfly in those diverse geographical region suggests that *T. venosus* has established its niche in Bangladesh. However, the larval host plant and the distribution of the species in other parts of the country are still unknown. Future exploration should be carried out to find the host plant range along with life cycle and distribution of the butterfly.

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