

BUTTERFLIES OF BANGLADESH

A board approach to nature lovers

Volume 2

(EBBL Butterfly Red List and Butterfly Activities)

First Edition

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Red List Contributors: EBBL-Researchers

(The book is the extract of the results derived from the primary data of the EBBL-Researches)

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To my students



The
sense of
biomagnification in
the biosphere-realization
species extinction and creation
life-chain of rotation and connection
are nature's greatest plays of glorification,
all are balanced in ecobio-natural classification
evidenced and expressed with much beautification
these are ever maintained by biological justification.
All these are in a process of long long eternal sensation,
when nature's play is never affected by human intervention

-- M. A. BASHAR

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Editor's note

The first volume of the book “Butterflies of Bangladesh” by Professor Dr. M. A. Bashar was published in the last year (2014). I am delighted to see that Prof. Bashar is getting the second volume of the book published promptly this year (2015). I thank him and his research team for such endeavor. Like the first volume of the book, I also feel honored to give an editorial note on the second volume.

This second volume of the book is written on the basis of the results and observation of long term research in the field. This volume comprises two parts. In the first part Prof. Bashar and his research team have prepared a Red-list of butterflies, while the second part deals with butterfly behaviors and their activities in the study areas of Bangladesh.

In the first part, the study areas of butterflies have been described thoroughly and nicely indicating those study areas in a map of the country. Along with topographical description, Prof. Bashar also highlighted the fauna and flora of the corresponding areas in his descriptions. He has described the seven families of butterflies, viz. Hesperidae, Papilionidae, Nymphalidae, Pieridae, Danaidae, Lycaenidae and Satyridae, of the study areas. The scientific names, common English and local Bengali names, preferable host plants, and status of butterfly species under each of the above families have been given in a tabulated form with the image of each butterfly species. This will, I hope, give butterfly researchers and students considerable theoretical and practical ideas about butterfly species; also this will help them to identify those butterflies in the field.

In the second part, a framework has been constructed designated as “*EBBL Model*” for the assessment of the status of butterflies of Bangladesh. Prof. Bashar and his team suggested the following list of categories to give the status of the butterflies of the country: *Available, Rare, Near Threatened, Threatened, Critically Threatened, and Endangered*. They have suggested a formula for the determination of these categories. Prof. Bashar has also described the butterfly behaviors and their activities on their foraging, resting, puddling, basking, territoriality, colonization, etc.

This book will be an invaluable reference of information regarding butterflies particularly for identification and for their various activities relating to nature, plants and animals including humans. I believe that this book will be much helpful for butterfly researchers and students.

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Preface

The butterflies deeply provide vital backward-support to the plants for their multiplication and sustenance to form the final shape of an ecosystem especially in Bangladesh forests. The plants and animals are combined together as a single factor part in nature to be acted with abiotic factors in an ecosystem. And that is why, in an ecosystem plant-animal interaction stands as a major and vital part. This functional part is dependent on the question of “species richness and species assemblage” in an area of the biosphere. Some animals are found to play a very vital role in the sustenance of such species richness and species assemblage by maintaining their characteristic association and activities with the plants in the surroundings. The Environmental Biology and Biodiversity Lab. (EBBL) of Dhaka University has carried out some experiments on the facts of the interaction between the two biotic aspects (the plants and animals) and found some important and interesting results on the question of functioning of forest ecosystem and on its sustenance; and also on ecosystem-health. Very recently experiments are made on the butterflies in a forest of Bangladesh and found that the butterflies can create a situation for (ecological condition) generating species assemblage and species richness in the forest by showing their colonization with their host plants in their habitats.

In the ‘EBBL Red List of butterflies’ we have arranged the identified butterflies in a model innovated by the EBBL, Department of Zoology, University of Dhaka after doing researches on the subject for more than 25 years long. The vulnerability-categories used in the list were designated on the basis of the formula practiced during the field level studies conducted by the EBBL researchers. Description of the butterflies was followed by the methodology adopted in the book of Professor Bashar (2014) on “Butterflies of Bangladesh: A broad approach for nature lovers Vol.-1”. In this book identification keys are prepared on the basis of butterfly-wing-venation and other eco-ethological behaviours. Different activities (Foraging, Puddling, Resting, Territorialities, Pre-mating, Mating, Eggs and Egg-laying behaviours, Emerging behaviours, Prey-predators interaction and activities, and Gene-flow activities) of the butterflies are also considered in the description. The butterfly activities with their related plants were recorded by research-team of the EBBL in the fields. All data presented here are the findings of the field level experimentations.

This book is based on the primary data of the EBBL researches principally. Some experiments were made also in the laboratory conditions. Behaviours of the butterflies and their active association with the related plants were recorded from different forest areas of Bangladesh. Their record survey was made periodically round the year for presenting out the butterfly population fluctuation with the seasonal variation. Red List was prepared by using EBBL Formula specially applied for Bangladesh territory only. Identification procedures were followed as it was made in the first volume of “Butterflies of Bangladesh (Bashar, 2014)”. In the volume-2, for the first time in Bangladesh, a chapter is written in “Bangla” on the behavioural activities of butterflies related with humans and human interests. Local Bengali names of the butterflies in the Red List record have also been given. This information may help the tourists to identify butterflies in the in-situ conditions; and at the same time they could find more interests while visiting the forest areas of Bangladesh. Butterfly behaviours will be felt one of the attractive items of the tourism characteristics of Bangladesh.

Definitely this will glorify the natural beauties of our country to the nature lovers. Butterflies are good indicators of sound environmental condition of an ecosystem. And that is why, their status in vulnerability (available, rare, near threatened, threatened and endangered) have been shown in this book with their active illustrations.

This book is a collective academic strength of the EBBL researchers. They are acknowledged with great love and respects. This book is different in its characters and contents. It is first time that a book has been published on the basis of primary data-extract from the researches of a laboratory at university level. The butterfly behaviours were recorded and analyzed directly from the field in the wild state of the insects. The behaviours were used to detect various wild plants which are important in the field of diverse uses of medicine, insecticides and foods. As this book is first time in its type, any scientific addition, correction and modification will be pleasantly appreciated to bring it in its improved edition.

-- M. A. BASHAR

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in the EBBL) who completed her M. Phil degree very recently in the field of satyrid butterflies in a remote forest of Bangladesh. She gave me valuable assistance in the preparation of the text. She has developed some innovative techniques for studying wing venation in butterflies which is known as EBBL-technique of venation study. With hard labour and patience, she carried out most of the work in preparing the press ready copy of the text. She arranged the plates and figures systematically in the text. I am ever grateful for what she has done for the book. Sajeda Akand is an Assistant Professor of Zoology and Ph. D. fellow in the EBBL, she has completed her M. Phil in the field of lycaenid butterflies and their related plants. Her M. Phil thesis has been praised by the various scientists in Bangladesh and outside the country. She prepared the part of lycaenid butterflies in the text. She has done very keen work in the text and made tabular formation of all families presented in the text with their identified genus and species under the respective subfamilies. Her effort in the text preparation is gratefully acknowledged. Other fellows those are working presently in the EBBL as Ph.D, M. Phil and M.S. researchers contributed a lot in structuring the book both academically and technically. They are Golam Moula, Maksudul Alam and Kritee Chowdhury, Efftesum, Loukhia, Sanjida, Fazlul Haque, Shaheen Mia, Nazia Naorin, Upama Aich, Shawn Chowdhury, Rumana Sultana Rumpa and Eshita Rajbangshi. I acknowledged the heartiest efforts of the researchers in my laboratory. My youngest son Mr. A. M. A. Erfan Bashar has extended his hands in helping all the computer-problems we have faced during the manuscript preparation. I affectionately acknowledge him.

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-- M. A. BASHAR