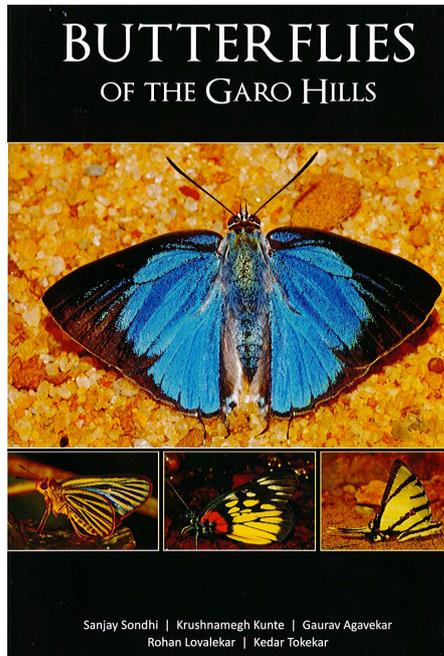


Book Review

Butterflies of the Garo Hills by S. Sondhi., K. Kunte, G. Agavekar, R. Lovalekar, K. Tokekar. (2013). Samrakshan Trust (New Delhi), Titli Trust (Dehradun) and Indian Foundation for Butterflies (Bengaluru), xvi+200pp.



Reviewed by **Monsoon Jyoti Gogoi**

Bokakhat East Dagaon, Golaghat District, Assam 785612, India
Email: monsoonjyoti@gmail.com

The book deals with 320 species of butterflies along with their photographs and identification keys for all from Garo Hills, western Meghalaya, northeastern India. It is the result of field study conducted by all the authors and others during 2008 to 2011 in the Garo Hills. The book is significant because Garo Hills is not well studied as that of Khasi Hills and Jaintia Hills, from where a comprehensive list is already published (Parsons & Cantlie 1948; Cantlie 1952; Cantlie 1956).

The taxonomic names are well updated with proper generic combinations and subspecies name. It appears that the authors have done a thorough job in using the proper combination of generic and subspecies status. The upgrade of species under Genus *Polyura* to *Charaxes* is well appreciated. However, some of new common names have been used for the first time, which may create doubt in the mind of amateurs but the use of old names in paranthesis is appreciated.

The first part of the book provides information on Garo Hills, its biodiversity significance and threats and the work of Samrakshan with the local community (the Garo tribe) for community conservation in the area. Although the book is titled Butterflies of Garo Hills, the surveys were mainly localized in and around South Garo Hills (Balpakram-Baghamara Community Conservation Landscape). It also provides guidelines to identify butterflies in the field, which includes the key parts of butterfly wing venation.

The middle part, which covers the major portion of the book, provides the species accounts along with photographs of all 320 species arranged systematically in six families and subfamilies. It contains: Description of the species, including the wingspan and keys to identification, male-female sex differences, if any; mention of similar look-alike species in northeastern India; habits, habitats and elevation; local status of the species; distribution of the species and subspecies (if any within mainland India) and best place and month of sighting.

The last part of the book covers butterfly hotspots in Garo Hills (Balpakram-Baghmara Landscape, Gongot, Balpakram National Park, Karwani, Siju Wildlife Sanctuary, Sambuk Attong and Dambuk Jongkhol) along with their maps by Kamal Medhi. This will be very helpful for the tourists and researchers. It also brings out a list of 339 species from Garo Hills, a very useful tool in understanding and promoting the biodiversity value of the area. However, the book adds 26 species to 306 species published in the monograph - Butterflies of the Garo Hills of Meghalaya, northeastern India: their diversity and conservation, in the Journal of Threatened Taxa (Kunte et al. 2012).

While this is an excellent effort, there are, however, a few errors in species identification of some complex species. For example, the image of Veined Pierrot *Taracus venosus* used in the book is that of a female of *T. theophrastus indica*. Female of *T. theophrastus indica* is probably not mentioned in published literatures. *T. venosus* have spots below, not streaks (Evans 1932). The image used in the book for *T. venosus* have streaks on the underside in place of spots. The species is common in Brahmaputra Valley and I have observed both male and female together seen in flight together (<http://www.flutters.org/home/>



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html/photos.php?level=picture&id=1243). The image of the White Cerulean *Jamides pura pura* used in the book is that of a Common Cerulean *Jamides celeno celeno*. I have observed dry season form (DSF) of *J. pura pura* in both Karbi and Cachar Hills, its quite a different species (http://www.flickr.com/photos/monsoon_jyoti_gogoi/8869877748/). The image used in the book matches with DSF of *J. celeno* from upper Assam, a very variable species. The book treats Purple Sapphire *Heliophorus epicles indicus* into two species: *H. e. latilimbata* and *H. indicus*. *H. latilimbata* is a synonym of *H. indicus* in published literature (Evans 1932) and in Global Lepidoptera Names Index (Lepindex). Hence, both of them should be treated as same.

The image of Fringed Redeye *Matapa cresta* in the book appears to be the Grey brand Redeye *M. druna* as there is no ferruginous tinge in *M. cresta* (Evans 1949). The specimen used in the book has ferruginous tinge. Black-vein Redeye *Matapa sasivarna* in the book appears *M. purpurascens* as in *M. sasivarna*, below the colour is fuliginous with black veins (Evans 1949), in *M. purpurascens* its purple below. Purple Redeye *M. purpurascens* in old literatures (Swinhoe 1912–13; Evans 1932) is originally *M. cresta* described in 1949. Image of Sikkim White Flat *Seseria sambara* used in the book should be *S. dohertyi*. In *S. sambara*, in the underside of hind wing, spot in space 7 is in the middle of spot in 6 and 5. In *S. dohertyi*, spot in 7 is nearer to spot in 6 than in spot in 5 (Evans 1932, 1949). Also, in the underside of hind wing, the base of hindwing is bluish in *S. dohertyi* and brownish in *S. sambara* (Evans 1932). In the photograph used in the book, spot in 7 nearer to 6 than in 5 and the abdomen is clearly bluish and hence it cannot be *S. sambara*.

The identification key to *S. sambara* and *S. dohertyi* can be assessed in the links: (<http://www.flutters.org/home/photogallery/index.php?level=picture&id=538>) (<http://www.flutters.org/home/photogallery/index.php?level=picture&id=537>).

Neptis ananta ochracea used in the book should be *Neptis namba*. On the hind wing, the cilia of *N. ananta ochracea* is not chequered with white, while in *N. namba* it is chequered with white (<http://yutaka.it-n.jp/lim1/720360001.html>). In the image used in the

book, the cilia is chequered with white in the hind wing. Images of Dark Evening Brown *Melanitis phedima bela* used in the book should be that of Great Evening Brown *Melanitis zitenius zitenius*. To qualify for *M. phedima bela* it should have well defined small ocelli in WSF (Evans 1932) but ocelli here are replaced by spots. The images are clearly *M. zitenius zitenius* as in WSF of the species below small white spots in place of ocelli (Evans 1932). Again, photograph of *M. zitenius zitenius* used in the book should be the DSF of *M. leda*. The sighting of two species viz. Common Wanderer (*Pareronia hippai*) and Danaid Eggfly (*Hypolimnias misippus*) mentioned in the book seems unconfirmed and doubtful as both these species are probably absent in northeastern India.

Overall, the book is a very important publication from northeastern India but the authors should be more careful in species identification of complex species. This book is certainly going to support the conservation efforts of Samrakshan Trust and promote eco-tourism in the area. In fact, this is first ever photographic guide book on butterflies of northeastern India and hence a very important resource for years to come.

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