

## ON THE IDENTIFICATION OF INDIAN BUTTERFLIES IN THE BOOK ON BUTTERFLIES OF THE GARO HILLS

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I was requested to review the book 'Butterflies of the Garo Hills' (Sondi et al. 2013a), which I duly did, pointing out some errors as was my duty (Gogoi 2013). In the rebuttal (Kunte et al. 2013b), the authors questioned my competence to distinguish concerned species (Clearly, Gogoi's observations on the seasonal variation in these two species are limited....). So, I present here photographic clarification and notes primarily for the benefit of users of the book as well as for the authors.

In the book, the authors have used image of *Jamides pura* which is clearly *J.celeno*. However, in the rebuttal (Kunte et al. 2013b), they have used a separate image for *J. pura*. I produce here the images of both wet season form (WSF) and dry season form (DSF) of *J. pura* (Images 1 & 2). Both photographs show the thread like black border to the upper side forewing not dilated at apex (Evans 1932), which is a dependable distinguishing character for this species. The cilia is dilated at apex in the museum specimen cross checked which shows that this cannot be *J. pura* but should be *J. celeno*.

Regarding the *Melanitis*, in my review (Gogoi 2013), I have already mentioned the underside key to *M. zitenius* and *M. phedima*. Kunte et al. (2013b) have provided the upper side images of *M. phedima* and *M. zitenius* but the upper side markings have a high degree of seasonal variation. In Evans (1932) it is clearly mentioned for *M. phedima bela*, DSF forms are larger and darker and DSF male costal bar present, absent in WSF and for *M. zitenius zitenius*, WSF white spots usually absent and in DSF black and white spots prominent.

Kunte et al. (2013b) claimed my image of *Tarucus theophrastus indica* marked as 'male' is actually female and image marked as 'female' is male. However, I have personally observed males and females from the Brahmaputra Valley. My confirmation of female is on the basis of egg laying individuals. I am adding photograph of the egg laying female for further clarification (Images 3 & 4).

In my review (Gogoi 2013), I mentioned that cilia chequered with white in the hindwing for *N. namba* but not in *N. ananta* (Inayoshi 2012). My competence was questioned by the authors (....distinguishing between *N. ananta* and *N. namba* is more complex than suggested by Gogoi). *Neptis namba* Tytler, 1915 has more darker yellow bands and flies in low elevation, whereas *N. ananta* flies in higher elevation (Tytler 1915a). The image in the book has dark yellow bands and Garo Hills itself is low elevation. I have used photographs of *N. ananta* and *N. namba* for further clarification (Images 5 & 6).

In my review (Gogoi 2013), I have already mentioned the distinguishing characters of *Seseria dohertyi* and *S. sambara*. The base of hind wing is clearly bluish in Garo Hills book and hence cannot be *sambara*. I have used photographs along with identification keys of both the species for further clarification. Again, the image of *Matapa cresta* in the book is actually *M. druna* as the photograph is clearly pale ferruginous on the underside. *M. cresta* lacks the ferruginous tinge (Evans 1949). *M. druna* male is ferruginous dark than female (Jong de 1983) and hence it is a female *M. druna*. I have added photographs of both the species for further clarification (Images 9 & 10). The image of *Matapa sasivarna* used in the book is purple below. However, *M. sasivarna* is fuliginous (Evans 1949) and hence, should be *M.purpurescens*. I have used both upper and underside



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Image 1. *Jamides pura*, WSF.



Image 2. *Jamides pura*, DSF.

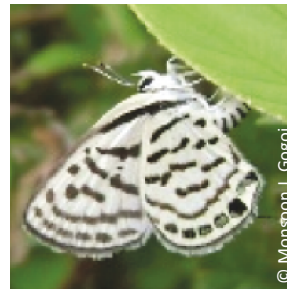


Image 3. *Tarucus theophrastus indica*, female, egg laying.



Image 4. *Tarucus theophrastus indica*, female, basking after egg laying.



Image 7. *Seseria dohertyi*



Image 5. *Neptis ananta*



Image 6. *Neptis namba*



Image 9. *Matapa druna*



Image 10. *Matapa cresta*

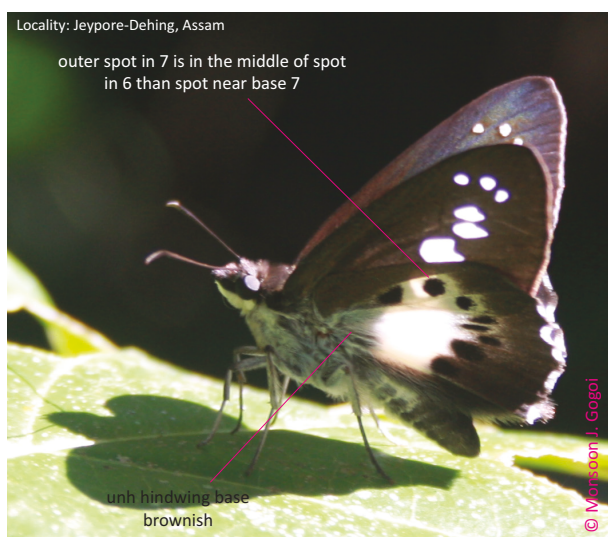


Image 8. *Seseria sambara*



Image 11. *Matapa sasivarna*

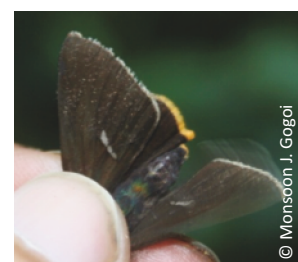


Image 12. *Matapa sasivarna*

image of *M. sasivarna* for further clarification (Images 11 & 12).

Hence, Garo Hills book, in its present form, contains misidentified specimens of some complex species of butterflies.

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