

FINAL NOTES ON THE IDENTIFICATION AND MISIDENTIFICATION OF BUTTERFLIES OF THE GARO HILLS

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We are glad that Gogoi's book review and the rejoinder are attracting much needed attention to the identification and taxonomic status of Indian butterflies. We have explained our identifications in our previous response; here we will only briefly attend to points raised in Gogoi's rejoinder.

Gogoi has produced a partial seasonal form of *Jamides pura*, claiming that this is the dry season form of *pura*. However, this is one variation among the seasonal forms of *pura*. Seasonal forms of *pura* matching our Garo Hills male, of which we had checked the upperside and confirmed the diagnostic features, are now available on the Butterflies of India website (<http://www.ifoundbutterflies.org/228-jamides/jamides-pura>).

Distinguishing features on the undersides of *Melanitis leda*, *M. phedima* and *M. zitenius* mentioned by Gogoi neither conform to Evans's key nor to variation well-established from various important pictorial guides and taxonomic books (cited in our previous response). Evans's key to the dry season forms of these species is highly inadequate, and it is a challenge to anybody to accurately distinguish between these seasonal forms using undersides and Evans's key alone. Identification of the dry season forms of these species is best done with close inspection of upper and undersides of adults, early life stages (eggs and caterpillars of *phedima* and *zitenius* are quite distinct; see [*melanitis/melanitis-phedima* and <http://www.ifoundbutterflies.org/427-melanitis/melanitis-zitenius>\), and genitalia. Relying purely on external morphology of adults will lead to some uncertainty in species identity.](http://www.ifoundbutterflies.org/427-</p>
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Gogoi's claims about sexual forms and identification of *Tarucus* are incorrect. We have discussed this in our previous response, here we will only point out for the record that what he believes are male and female of *Tarucus indica* (Image 1) are actually *T. venosus*. Reference images of both sexes of *T. indica* and *T. venosus* are now available online (<http://www.ifoundbutterflies.org/250-tarucus/tarucus-venosus> and <http://www.ifoundbutterflies.org/250-Tarucus/Tarucus-indica>). KT's image from the Garo Hills closely matches the phenotype and description of male *T. venosus*. We also point out once again that "*Tarucus theophrastus indica*" is a long outdated scientific name combination for *indica*.

We are well aware of the correctly identified specimens of *Neptis namba* illustrated on Yutaka Inayoshi's website. Our previous comments were based not only on these specimens but also on dozens of specimens of *N. namba* and *N. ananta* from the Natural History Museum, London, including the types of both the species (included in our previous response and on the species pages: <http://www.ifoundbutterflies.org/153-Neptis/Neptis-ananta> and <http://www.ifoundbutterflies.org/153-Neptis/Neptis-namba>). It is evident from the page of *N. namba* that there is considerable variation in the saturation of red-orange discal bands and white cilia in this species, and that the type of *N. ananta ochracea* also has white cilia, especially on the underside of forewing. Our point about the caution required to distinguish between these two species and the overlap in their wing patterns remains. As we acknowledged in our previous response, the image used in our book may well be *N. namba*, but without



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Image 1. Gogoi's misattribution of male and female phenotypes of *Tarucus venosus*, given by him as "*Tarucus theophrastus indica*" (Images by Monsoon Jyoti Gogoi, taken from <http://www.flutters.org>, used under the Creative Commons Attribution 3.0 License).

images of the underside, we cannot be absolutely certain. We await for further sightings of this *Neptis* species pair from the Garo Hills to confirm or change our tentative identification.

Images of the museum specimens of *Seseria sambara* and *Seseria dohertyi* are now available online (<http://www.ifoundbutterflies.org/358-seseria/seseria-sambara> and <http://www.ifoundbutterflies.org/358-seseria/seseria-dohertyi>). Readers can compare the images to understand the distinguishing features between these two species. According to Evans in 1949, which was a comprehensive update on the Hesperidae in his previous book in 1932, and the museum specimens that we have seen, the bluish tinge at the base of the hindwing underside of some specimens is not a criterion to distinguish between this species pair.

Gogoi's conception of the color "ferruginous" is incorrect, and he has misidentified our male *Matapa cresta* as female *M. druna*. KK's identification of *M. cresta* male was based on investigation of the male brand (media codes ag592 and av691, which was the same individual, on

<http://www.ifoundbutterflies.org/301-matapa/matapa-cresta>). The brand of this male specimen matches closely with the brands seen in museum specimens (see the above link) as well as the sketches of brands given by de Jong. As far as we are concerned, both the specimens identified and presented in his rejoinder by Gogoi are *M. cresta*, one more prominently marked than the other. However, Gogoi has correctly identified one of them as *M. cresta* and misidentified the other as *M. druna*. The brand on the male shown in his image (provided to us by Gogoi for reference but not included in his response) matches the brand of *cresta*, not *druna*. Similarly, we believe that our identification of *M. sasivarna* matches the description of Evans, de Jong and museum specimens. Images of museum specimens of Indian *Matapa*, including males showing brands, are now online (<http://www.ifoundbutterflies.org/#!/tx/301-Matapa-dp3>).

We appreciate Gogoi's adamant belief in his (mis) identifications. However, we think that we have provided sufficient evidence to support our identifications.

