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A New *Sinthusa* (Lepidoptera, Lycaenidae) from Borneo

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Synopsis Description is given of a new species of lycaenid butterfly from Borneo, which belongs to the genus *Sinthusa*.

From Borneo only *Sinthusa nasaka amba* KIRBY and *S. nasaka privata* FRUHSTORFER have been known as belonging to the genus *Sinthusa*. *Amba* KIRBY was treated by PIEPERS and SNELLEN as a subspecies of *malika* HORSFIELD, though it had originally been described as a good species. We place this to *nasaka* HORSFIELD as suggested in SEITZ' description and so arranged in the collection of the British Museum (Natural History). On the other hand, *privata* FRUHSTORFER was first described as a subspecies of *amba* KIRBY, but it is currently regarded as a subspecies of *Sinthusa nasaka* occurring in Southeast Borneo.

BARLOW and others (1971) reported *Sinthusa malika volsa* FRUHSTORFER from Mt. Kinabalu; the specimens examined by them may belong to the present new species, but the name *volsa* was firstly described as the subspecies of *Sinthusa malika* from East Java. According to PIEPERS and SNELLEN (1918), *volsa* FRUHSTORFER is a variation of *Sinthusa malika malika* HORSFIELD from Java.

Some male and female specimens collected by one of us, IWANAGA, in North Borneo in 1968 are very different from the above-mentioned *Sinthusa nasaka amba* KIRBY and *S. nasaka privata* FRUHSTORFER and also from *S. malika* HORSFIELD distributed in the Malay Peninsula, Java, Sumatra and so on. As the result of further studies at the British Museum (Natural History), we have concluded that these specimens belong to a distinct new species.

We cannot say there is no possibility at all that this new species is the same as *Sinthusa nasaka privata* FRUHSTORFER, because we could not see its type-specimen which may have been lost. Nevertheless, we are convinced that this new species differs from *S. nasaka privata* as the result of studying FRUHSTORFER's original description and SEITZ' description, examining male and female specimens preserved in the British Museum (Natural History) and also following kind advice of Lt.Col. J. N. ELIOT.

We are very grateful to Lt. Col. J. N. ELIOT and Mr. Akito KAWAZOÉ for their

useful advice. We offer our cordial thanks to Messrs. T. G. HOWARTH, C. F. HUGGINS, P. R. ACKERY and R. L. SMILES of the Entomology Department of the British Museum (Natural History) for the facilities given for examining the specimens. Thanks are also due to Prof. T. SHIRÔZU of Kyusyu University for his bibliographic advice. We are also greatly indebted to Mr. Kaoru HATA for the loan of material.

Sinthusa tomokoae sp. nov.

(Figs. 1A–D, 4–7)

Male. Eyes hairy; labial palpi smooth.

Wing-shape: Forewing slightly produced at the end of vein 2; inner margin a little convex subbasally.

Upperside: Forewing veins 11 and 12 separated but bowed towards each other; veins 5 and 6 more or less parallel, with vein 5 nearer to vein 6 than to vein 4; dull indigo-blue in ground colour; outer black marginal area very broad, continuing along costal and inner margins towards base. Hindwing tailed at vein 2 and only a pendulous lobe at vein 1b; shining bluish purple in spaces 1c–5 and discoidal cell; black in spaces 6–8; pale brand around the base of space 7.

Underside: Forewing greyish pale-brown, apical area reddish brown; broad cell-end spot and postdiscal band tinged with reddish or ochreous brown, and outwardly edged with white; postdiscal band more or less dislocated at vein 4; a black recumbent hair-tuft at mid-dorsum. Hindwing greyish white; cell-end

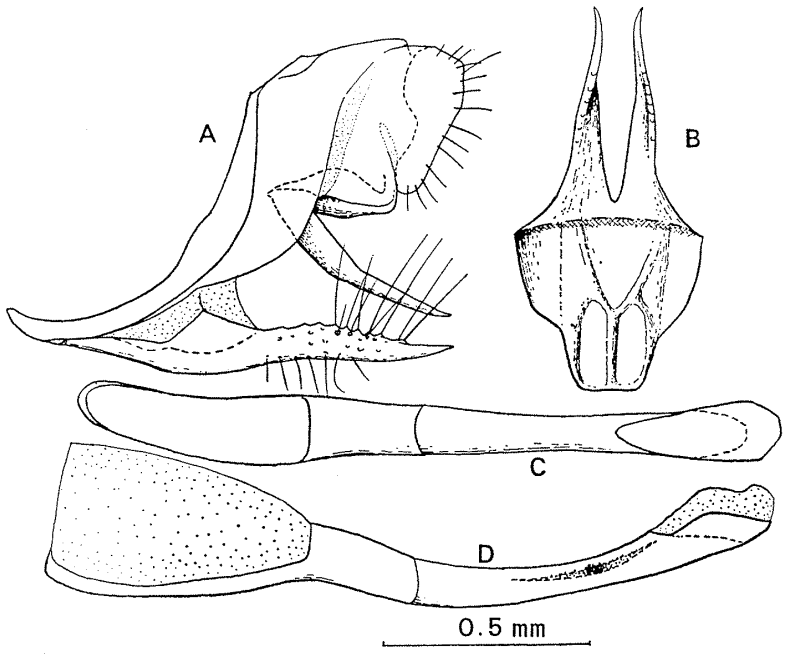


Fig. 1. *Sinthusa tomokoae* sp. nov., ♂. —— A, Genitalia in lateral aspect with phallus removed. B, Dorsal aspect of valvae. C, Dorsal aspect of phallus. D, Lateral aspect of phallus.

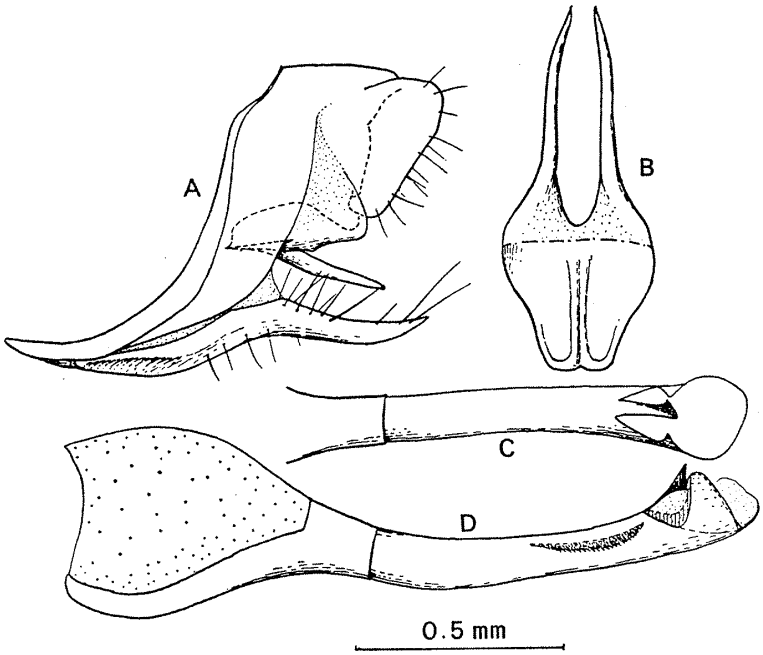


Fig. 2. *Sinthusa nasaka amba* KIRBY, ♂. —— A, Genitalia in lateral aspect with phallus removed. B, Dorsal aspect of valvae. C, Dorsal aspect of phallus. D, Lateral aspect of phallus.

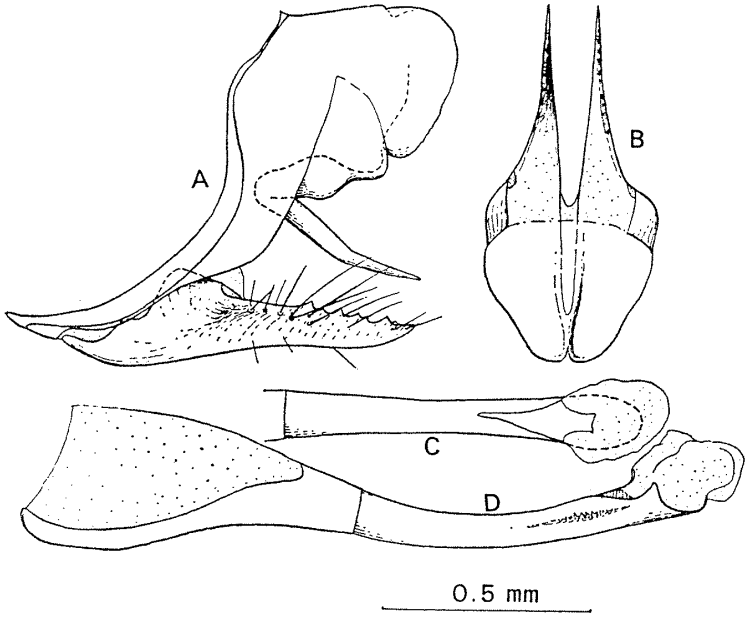


Fig. 3. *Sinthusa malika amata* DISTANT, ♂. —— A, Genitalia in lateral aspect with phallus removed. B, Dorsal aspect of valvae. C, Dorsal aspect of phallus. D, Lateral aspect of phallus.

Figs. 4–11. *Sinthusa* spp. —— 4–7. *Sinthusa tomokoae* sp. nov. —— 4. Holotype, male. —— 5. Holotype, male, underside. —— 6. Paratype, female. —— 7. Paratype, female, underside. —— 8–11. *Sinthusa malika amata* DISTANT. —— 8. Male for comparison. —— 9. Male, underside. —— 10. Female. —— 11. Female, underside.

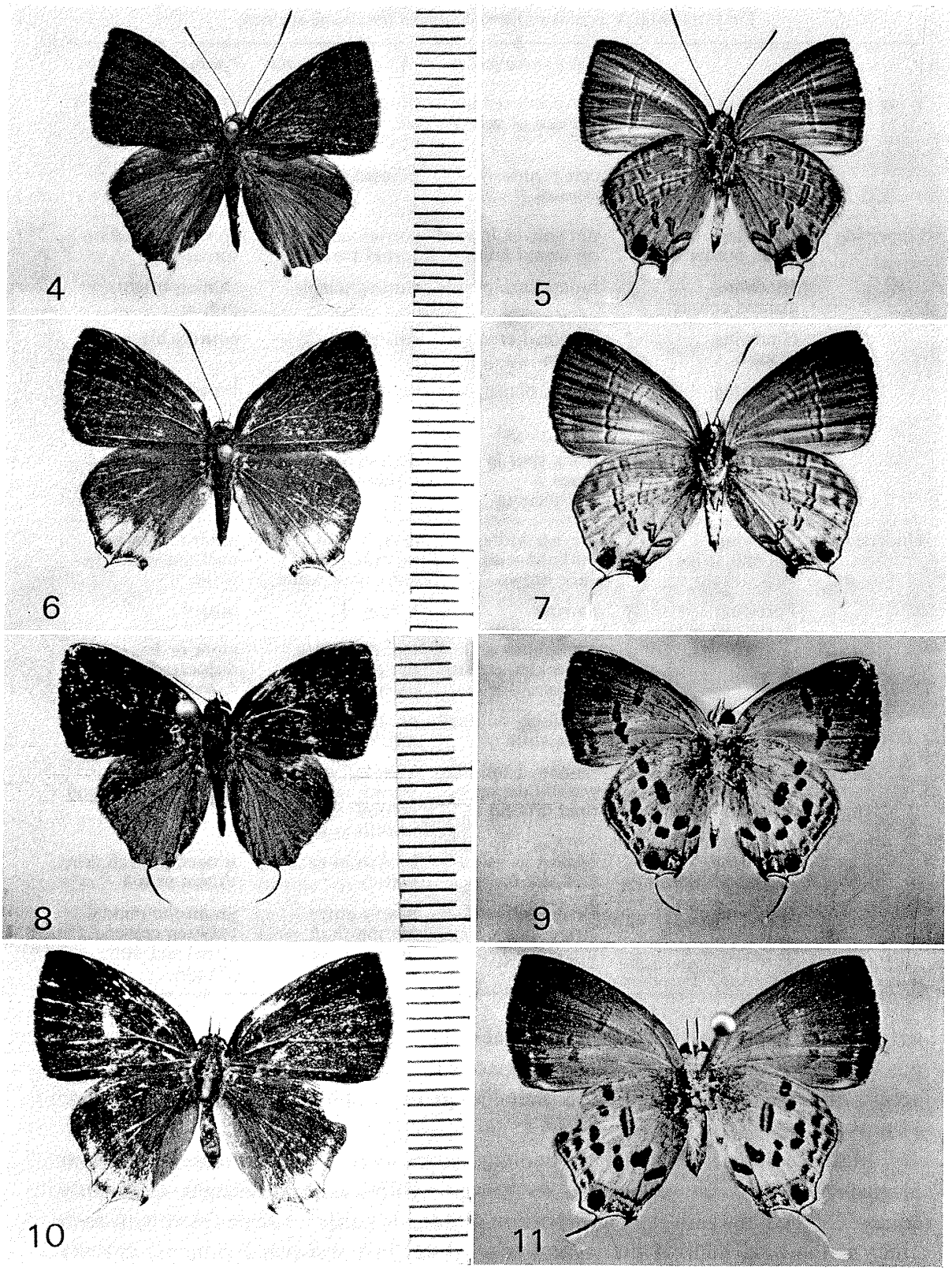
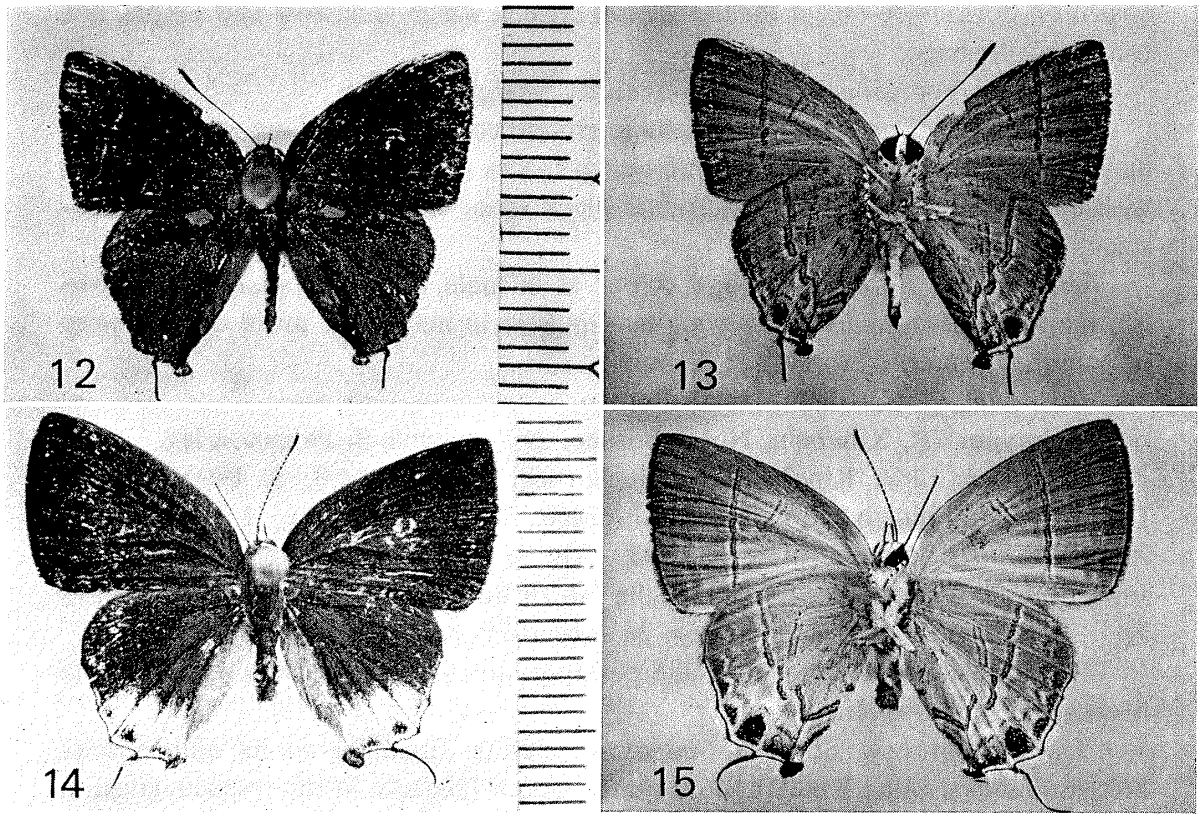


Table 1. A comparison between *Sinthusa nasaka amba* KIRBY, *Sinthusa malika amata* DISTANT (Malay Peninsula) and *Sinthusa tomokoae* sp. nov.

			S. nasaka amba	*S. malika amata*	*S. tomokoae* sp. nov.
Wing-shape	Forewing	♂♀	not produced at the end of vein 2	produced conspicuously at the end of vein 2	produced slightly at the end of vein 2
	Forewing apex	♂♀	conspicuously pointed	pointed	pointed
Upperside	Forewing black border	♂	not convex inward on tornal area	convex inward on tornal area	convex inward on tornal area
	Hindwing ground colour	♂	rather dark purple	shining purple	shining bright purple
	Hindwing space 6	♂	marginal area purple	entirely black	entirely black
	Hindwing whitened tornal area	♀	broad, bluish	narrow, white	broad, white
	Hindwing submarginal area	♀	black spot in space 2 conspicuous	dark brown band rather obscure	dark brown band clear, black spots in spaces 1c and 2
Underside	Forewing cell-end stripe	♂♀	greyish white, outlined with dark brown	dark brown, obscurely outlined with white	reddish brown, outlined with white
	Forewing postdiscal band	♂♀	narrow	broad	broad
		♂♀	continuous and unbroken, reddish brown	separated into dark brown maculae	more or less dislocated at vein 4, reddish brown
		♂♀	obscurely outlined with white	obscurely outlined with white	clearly outlined with white
	Hindwing markings	♂♀	narrow, band-like, slightly darker than ground	maculae, dark brown, strongly contrasted with whitish ground	broad, band-like, darker than ground
	Hindwing postdiscal band	♂♀	broken at veins 2, 4 and 6	broken at each vein	broken at each vein except vein 5
	Hindwing postdiscal spots in spaces 4–5	♂♀	nearer cell-end stripe than outer margin	nearer outer margin than cell-end stripe	about the middle between cell-end stripe and outer margin

stripe faint; postdiscal band broken at each vein except vein 5, consisting of ochreous brown spots; a black tornal spot in space 2 and another on the lobe, and tornal area rather sparsely dusted with metallic green scaling. Length of forewing: 11 mm.

Male genitalia: Dorsum moderately large, with lateral membranous area inconspicuous; socius very short, its postero-ventral margin straight or slightly concave; brachium with the basal portion swollen inward. Valvae fused with each other at the basal half of the ventral edge, distal half somewhat sinuous, apically



Figs. 12–15. *Sinthusa nasaka amba* KIRBY. —— 12. Male for comparison. —— 13. Male, underside. —— 14. Female. —— 15. Female, underside.

divergent in dorsal view, ending in a sharp point; dorsal margin of valva denticulate at the subapical portion. Phallus very large, long and sinuate, vesical opening of aedeagus oblique, apex ventrally edged with a narrow lamella; vesica with cornutus comprising a group of extra-minute denticules.

The male genitalia in this new species are structurally the same as in the other *Sinthusa*-species, but differ from those in the two allied species, *Sinthusa nasaka* and *Sinthusa malika*, in the following aspects: 1) Uncus: Distal margin of uncus in *Sinthusa malika* is evenly convex, while in the other two species the margin is straight and truncate in lateral view. 2) Valvae: In *Sinthusa nasaka*, the distal half is narrower than in the other two species, running parallel to each other towards apex; the apical portion is gently bent intro-dorsally, and ends convergently. In *Sinthusa malika* the distal half is flattened laterally, running divergently throughout in ventral aspect; the dorsal margin is straight, bearing some dentations as in the present new species. 3) Vesical opening of aedeagus: In *Sinthusa nasaka* the opening bears a strong serration at its dorsal middle and a pair of triangular lamellae at the ventral edge, while in *Sinthusa malika* vesical membrane is slightly sclerotized dorsally but none of serration there, and the ventral triangular lamella swollen. In the present new species these ornamental structures on the vesical opening are

absent on dorsal side except for the ventral lamella which is narrow and simple, not triangular in shape.

Female. Forewing inner margin nearly straight.

Upperside: Forewing dark brown in ground colour. Hindwing ground colour dark brown, tornal area broadly whitened in spaces 1b–4 which are outwardly edged with dark brown narrowly, submarginal black spots in spaces 1c and 2 rather conspicuous.

Underside: Forewing ground colour as in male, but apical area more yellowish, markings as in male. Hindwing markings as in male, but more or less paler in colour. Length of forewing: 12 mm.

Distribution. Kinabalu, North Borneo.

Holotype: ♂, Kinabalu, North Borneo, 29 July 1968, S. IWANAGA leg.

Paratypes: 1 ♀, Kinabalu, North Borneo, 29 July 1968, S. IWANAGA leg. 1 ♀, Kinabalu, North Borneo, 22 July 1968, S. IWANAGA leg. 1 ♀, Kinabalu, North Borneo, 21 June 1971, K. HATA leg. 1 ♀, Kinabalu, North Borneo, 24 June 1971, K. HATA leg. 1 ♂, Kinabalu, North Borneo, 22 July 1968, S. IWANAGA leg. 2 ♂♂, Kinabalu, North Borneo, 24 June 1971, K. HATA leg.

Both the holotype and a female paratype are to be preserved in the Osaka Museum of Natural History.

The present new Bornean *Sinthusa*-species is dissimilar to its akin species *Sinthusa nasaka amba* KIRBY and *S. malika amata* DISTANT in the respects given in Table 1.

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