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A New Species of *Celastrina* (Lepidoptera, Lycaenidae) from Borneo and Luzon

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Synopsis Descriptions are given of a new *Celastrina* from Borneo and its new subspecies from Luzon.

In 1968 one of us, IWANAGA, collected some male specimens of a *Celastrina*-species in Borneo, which was unknown to us. As a result of further studies at the British Museum (Natural History), we have concluded that these specimens belong to a new species.

On the other hand, through the courtesy of Mr. Sadanobu INOUÉ, we have had the chance to examine another *Celastrina*-specimen from Luzon, the Philippines, taken by Mr. Hermel NUYDA. This specimen belongs to the above-mentioned new species, but seems to represent a different race as given below.

We have to thank Mr. T. G. HOWARTH, Mr. C. F. HUGGINS and the other members of the staff of the butterfly section of the British Museum (Nat. Hist.), and Mr. Akito KAWAZOÉ for their kindness in giving advice and every facility for our investigation. Our hearty thanks are also due to Mr. Kaoru HATA for offering the privilege of studying the material that he took in Borneo in 1971, and to Mr. Sadanobu INOUÉ for his kindness in giving us the chance to study the *Celastrina*-specimen captured by Mr. Hermel NUYDA in Luzon.

Celastrina kawazoei sp. nov.

(Figs. 1A–5A, 6–8)

Male. Upperside: Forewing dull blue in ground color; whitish discal patch absent; black border narrow, slightly broadening at apex; veins 11 and 12 more or less straight and separate, vein 12 ending before terminal level of discoidal cell; androconia present, one shown in Fig. 8. Hindwing as in forewing in ground colour; whitish discal patch absent; black border thread-like and dilated slightly towards apex; submarginal spot obscure; androconia present.

Underside: Forewing whitish grey in ground colour; grey brown markings rather distinct, irregular, variable, and mostly outlined with whitish colour except

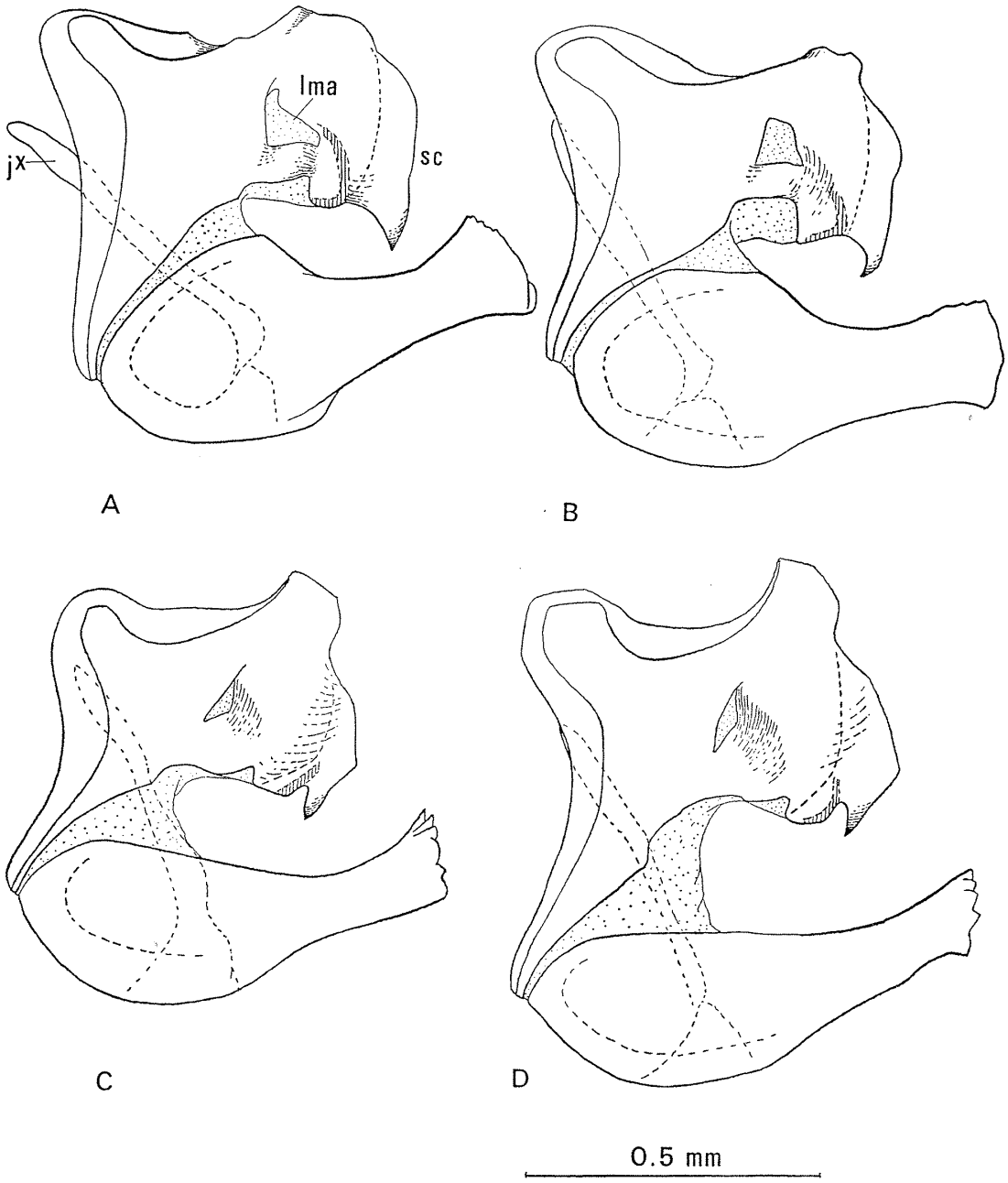

Fig. 1. Male genitalia of *Celastrina* spp. in lateral aspect with phallus removed.——A, *C. kawazoei* sp. nov.; B, *C. kawazoei nuydai* subsp. nov.; C, *C. philippina philippina* SEMPER (Luzon); D, *C. philippina nedda* GROSE-SMITH (New Guinea).
lma: lateral membranous area of dorsum; sc: socius; jx: juxta.

in spots of submarginal series; submarginal lunules and marginal dots continuing from tornus to apex, slightly becoming weak apically; no spot in discoidal cell; spot of postdiscal series in space 6 is slightly shifted in out of line with the rest, spot in space 4 very oblique, a spot appearing in space 1b in some specimens. Hind-

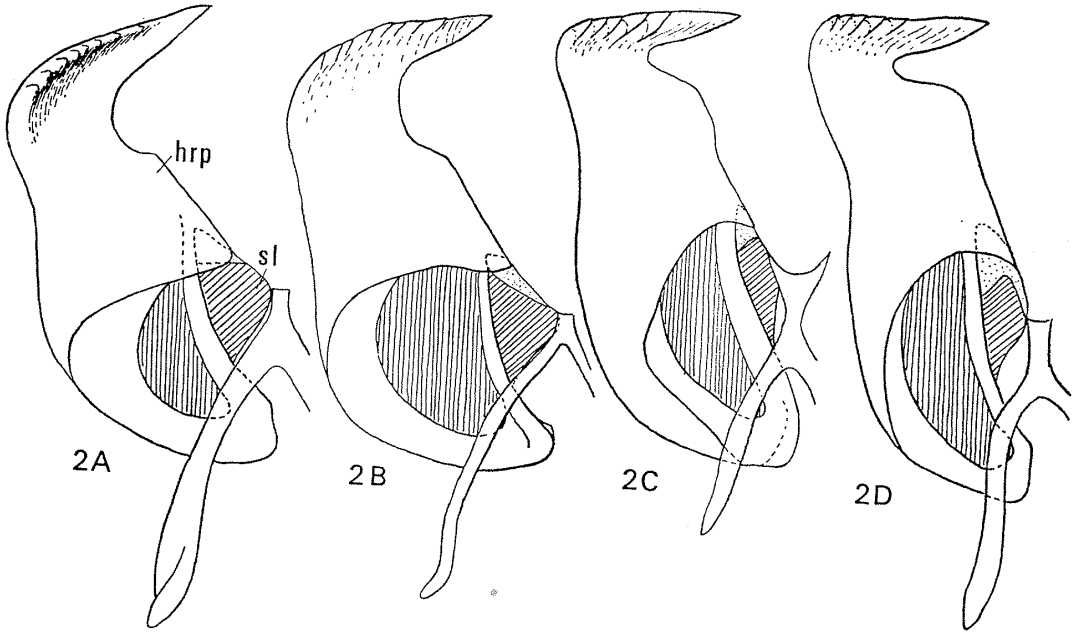

Fig. 2. Dorsal aspect of left valva with juxta of *Celastrina* spp.——A, *C. kawazoei* sp. nov.; B, *C. kawazoei nuydai* subsp. nov.; C, *C. philippina philippina* SEMPER (Luzon); D, *C. philippina nedda* GROSE-SMITH (New Guinea).
hrp: harpe; sl: sacculus.

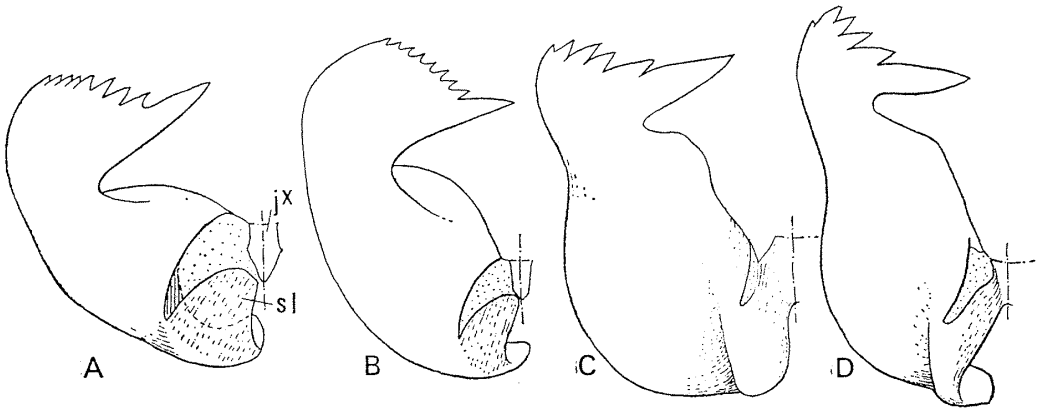

Fig. 3. Right valva of *Celastrina* spp. in posterior aspect.——A, *C. kawazoei* sp. nov.; B, *C. kawazoei nuydai* subsp. nov.; C, *C. philippina philippina* SEMPER (Luzon); D, *C. philippina nedda* GROSE-SMITH (New Guinea).

wing as in forewing in ground colour and in markings; three subbasal spots and postdiscal spot in space 7 are large, prominent, and deeply blackish, the postdiscal being slightly larger than the other; no spot near base of space 1b.

Length of forewing: 14 mm.

Male genitalia: Ring widened dorsally, produced anterodorsally as in the other *Celastrina*-species; a pair of lateral membranous areas on dorsum small and

triangular; socius narrow, with ventral margin produced downwards in a sharply pointed hook. Saccus entirely obsolete. Valva stout, basal half very large, strongly constricted preapically in lateral aspect; apical portion of valva bent inwards, forming a large hook, with its dorsal margin indented by 7–9 teeth; distal extremity of valva sharply pointed and spine-shaped. Phallus large; coecum swollen; suprazonal portion of aedeagus very short, broadly membranous; vesical opening circumfused with a small lamella which extends in a pair of invaginated rods proximally; Chapman's process moderately long; vesica bearing a tuft of spiny hairs ventrally and a group of minute denticles dorsally. Juxta Y-shaped, with the basal stalk short.

The male genitalia of this new species have a close resemblance to those of *C. philippina* (Figs. 1C–5C, 1D–5D) structurally, but differ chiefly in the following aspects:

1. A pair of lateral membranous areas of scaphium are wider than in *C. philippina*, in which the areas are very small and remarkably narrow.

2. Ventral hook-shaped projection of socius larger and longer than that of *C. philippina*.

3. In lateral aspect, preapical portion of valva is much constricted, with dorsal margin strongly concave; in *C. philippina* valva is narrower and its dorsal margin is only gently curved.

4. In dorsal or ventral aspect, ventral expanded portion of valva (i.e. harpe) is small and obtuse, its posterior preapical concavity is large but shallow, while in *C. philippina* the ventral expansion of valva is well developed and long, so that the preapical concavity is very narrow and deep.

5. In *C. philippina* apical teeth of valva on dorsal margin are larger and few, being only 4 or 5 in number, and distal extreme spine of valva is markedly longer.

6. In *C. philippina* basal stalk of Y-shaped juxta distinctly longer than in this new species.

Distribution. Borneo.

Holotype: ♂, Headquarters (Mt. Kina-Balu), Sabah, Borneo, 17 July 1968, S. IWANAGA leg. Paratypes: 1♂, Headquarters (Mt. Kina-Balu), Sabah, Borneo, 18 July 1968, S. IWANAGA leg.; 2♂♂, Kundasang, Sabah, Borneo, 8 July 1971, K. HATA leg.

The holotype is to be preserved in the Osaka Museum of Natural History.

In appearance this species resembles *C. limbata* and *C. philippina*, but may be distinguished by the colouring of the upperside and the male genitalia. Besides the black borders on the upperside are not so prominently dilated towards the apex as in *C. limbata*.

We name this species after Mr. Akito KAWAZOÉ who always gives us valuable advice and convenience for our studies.

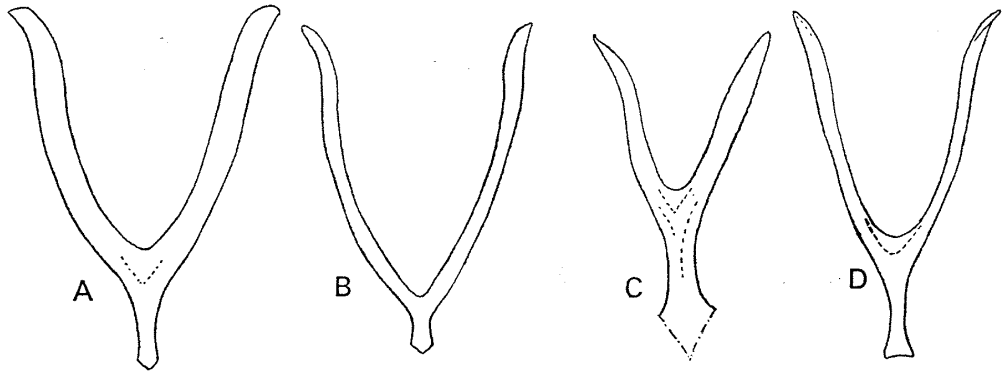

Fig. 4. Juxta of *Celastrina* spp.——A, *C. kawazoei* sp. nov.; B, *C. kawazoei nuydai* subsp. nov.; C, *C. philippina philippina* SEMPER (Luzon); D, *C. philippina nedda* GROSE-SMITH (New Guinea).

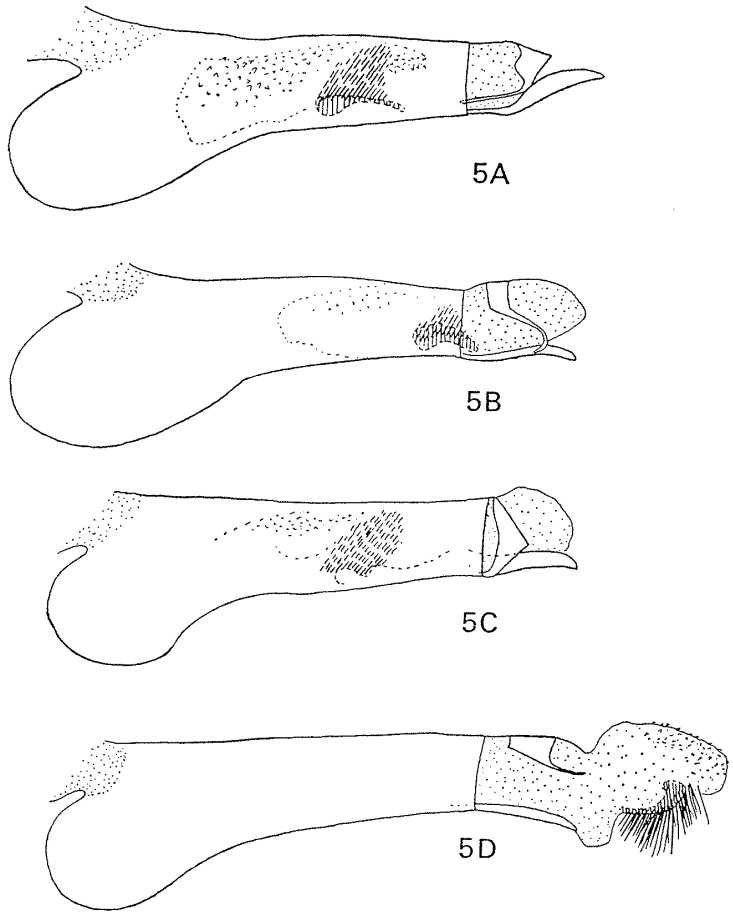

Fig. 5. Phallus of *Celastrina* spp.——A, *C. kawazoei* sp. nov.; B, *C. kawazoei nuydai* subsp. nov.; C, *C. philippina philippina* SEMPER (Luzon); D, *C. philippina nedda* GROSE-SMITH (New Guinea).

Celastrina kawazoei nuydai ssp. nov.
(Figs. 1B–5B, 10–11)

Male. Upperside of both wings dull blue in ground colour (bright blue in *C. philippina*); on forewing black border broader and slightly more increasing in width towards apex than in the nominate subspecies; on hindwing submarginal black spots larger and look like a black border.

Underside grey in ground colour; markings distinct; postdiscal spots on both wings situated near submarginal lunules and rather regular in arrangement (more or less dislocated in the nominate subspecies).

Male genitalia: Male genitalia of this new subspecies are identical with those of the nominate subspecies except for some slight differences in the following aspects:

1. Juxta slender, with basal stalk shorter.
2. Cornuti on vesica more or less smaller.

Length of forewing: 14 mm.

Distribution. Luzon, the Philippines.

Holotype: ♂, Montalban, Luzon, 16 September 1967, H. NUYDA leg.

The type-specimen will be deposited in Mr. INOUÉ's collection.

At a glance this form seems to be very different from the nominate subspecies, but the male genitalia clearly show its specific identity with *C. kawazoei.*

The subspecific name of this species is dedicated to Mr. Hermel NUYDA, who collected the specimen.

References

CANTLIE, K., 1963. The Lycaenidae portion (except the *Arhopala* group) of Brigadier EVANS' The Identification of Indian Butterflies 1932 (India, Pakistan, Ceylon, Burma). Bombay.

CORBET, A. S., 1937. A revision of the Malayan species of *Celastrina. Trans. R. ent. Soc. Lond.*, **86**: 19–33.

——— & H. M. PENDLEBURY, 1956. The Butterflies of the Malay Peninsula. 2nd edition revised.

EVANS, W. H., 1932. Identification of Indian Butterflies. 2nd edition revised. Madras.

SEMPER, G., 1886–1892. Die Schmetterlinge der Philippinischen Inseln. C. W. Kreidel's Verlag, Wiesbaden.

TOXOPEUS, L. J., 1927–1928. Eine Revision der javanischen, zu *Lycaenopsis* FELDER und verwandten Genera gehörigen Arten. Lycaenidae Australosiae II. *Tijdschr. Ent.*, **70**: 232–302, **71**: 179–265.

Figs. 6–7. *Celastrina kawazoei* sp. nov., holotype ♂.——8. Androconial scale of *C. kawazoei* sp. nov.——9. *C. limbata placida* DE NICÉVILLE, underside, for comparison.——10–11. *C. kawazoei nuydai* ssp. nov., holotype ♂.——12–13. *C. philippina philippina* SEMPER, for comparison.