

**TWO NEW SUBSPECIES OF *PAPILIO CANOPUS*
(LEPIDOPTERA: PAPILIONIDAE)
FROM THE SOLOMONS AND VANUATU**

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Abstract. Two new subspecies of *Papilio canopus* are described and figured, 1 from San Cristobal I in the southern Solomons and 1 from Erromango, Tanna, Aneityum and Futuna islands in southern Vanuatu.

Two new subspecies of *Papilio canopus* Westwood (1842) are described below from specimens made available by the following institutions, hereafter abbreviated in the text: British Museum (Natural History) (BMNH); National Butterfly Museum, England (NBM); Bishop Museum, Honolulu (BPBM).

Among those examples studied in the BMNH are specimens collected by Dr Gaden S. Robinson, while participating in the Royal Society and Percy Sladen New Hebrides Expedition 1971. Such specimens are hereafter abbreviated "R. Soc. Exped."

***Papilio canopus cristobalensis* Samson, new subspecies**

Fig. 3

Holotype ♀. Forewing length, 60 mm. *Dorsal surface*: ground-color black-brown; median band of forewing pale yellow in spaces 1a-2 graduating to white costally, extending apically in space 7. Hindwing discal band creamy-white occupying spaces 1a-6, extending distad in spaces 3-5; corresponding outer margins exaggerated and undulated. Yellow-orange scaling at anal angle crescentiform. Tornus vaguely spatulate. *Ventral surface*: forewing basals dark brown graduating to pale brown at submedians; median band similar in extent to that of dorsal surface. Postmedians orange-brown darkening marginally. Hindwing dark brown becoming paler marginally at vein terminations. Cream-white discal band present in spaces 1a-6 although fragmented and reduced in distal extent, cuneiform in spaces 3-5; paralleled distally with blue-white scaling suggestive of a secondary band. Yellow-orange submarginal spots vestigial; yellow-orange scaling at anal angle more extensive than on dorsal surface.

Holotype ♀, SOLOMON IS: San Cristobal, 21.VI.1973 (R. Morgan, BM.1978-27) (BMNH).

Remarks. The taxon described above follows a number of recent discoveries from San Cristobal (Samson 1980), an island group on which are found many endemic Rhopalocera. In size and general extent of markings, *P. canopus cristobalensis* parallels that of *P. fuscus xenophilus* Mathew (1886), which also occurs on San Cristobal (Samson 1980). However, the former possesses clearer demarcation between bands and ground-color and straight configuration of the forewing median band, this having a yellow tinge characteristic of the various *canopus* subspecies. Further examples of *canopus* from the Solomons, including the ♂ of *P. canopus cristobalensis*, may be detected in museum collections possibly having been placed with *P. fuscus*, as was the holotype ♀ described above.

1. National Butterfly Museum, St. Mary's, Bramber, West Sussex, England.

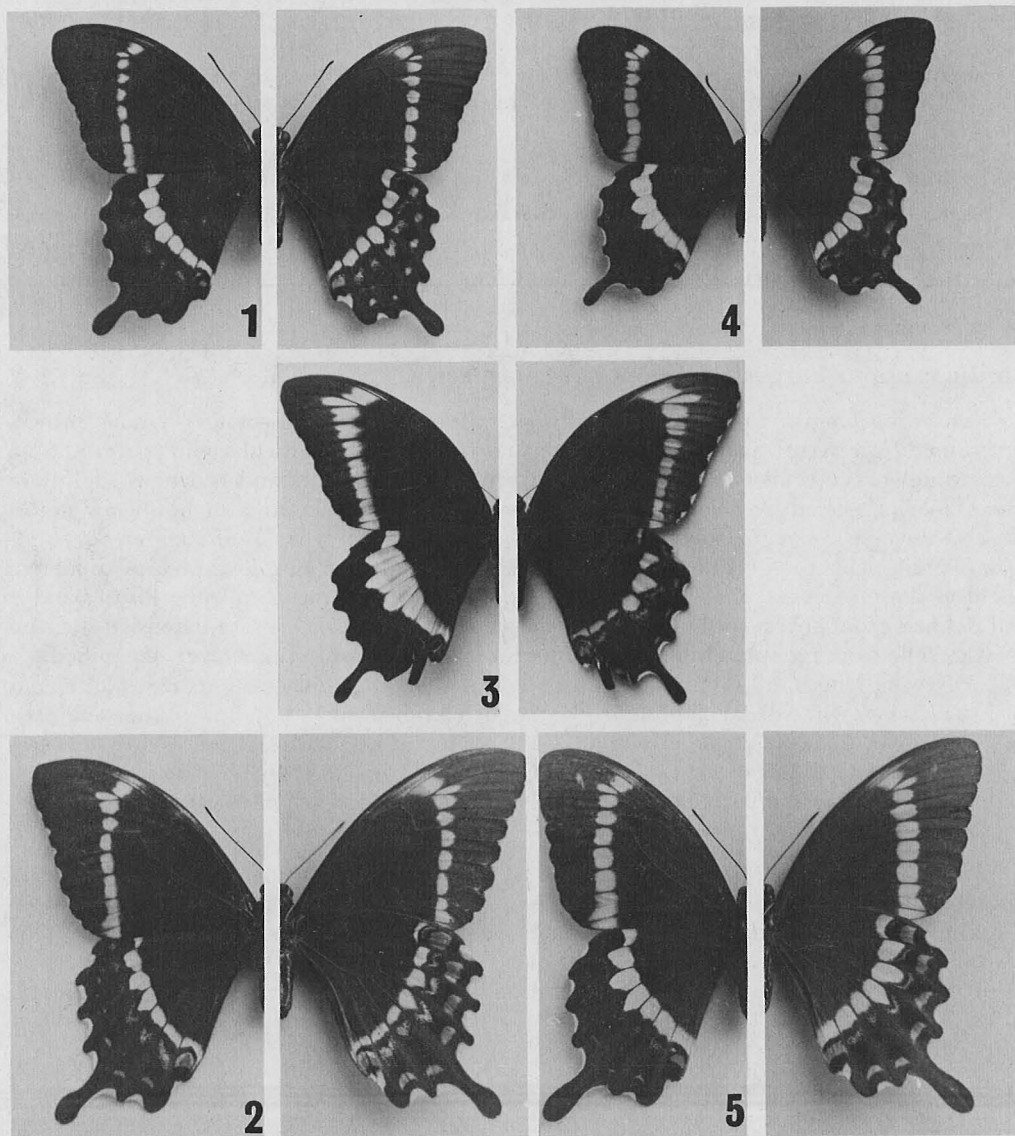


FIG. 1-5. 1-2, *Papilio canopus burgessi*: 1, holotype ♂, dorsal and ventral views; 2, allotype ♀, dorsal and ventral views. 3, *P. canopus cristobalensis*, holotype ♀, dorsal and ventral views. 4-5, *P. canopus hypsicles*: 4, ♂, dorsal and ventral views, Vanuatu [New Hebrides]: nr Port Vila, 6.VIII.1976 (NBM); 5, ♀, dorsal and ventral views, same data.

***Papilio canopus hypsicles* Hewitson**

Fig. 4-5

Papilio hypsicles Hewitson, 1868, *Exot. Butterfl.* 4(67): pl. 9, fig. 29 (New Hebrides).

Specimens examined. 2 ♀, VANUATU [New Hebrides]: Espíritu Santo, Big Bay, Malao Vill, VIII, IX.1971 (G.S. Robinson, R. Soc. Exped.) (BMNH); 1 ♂, 1 ♀, Aoba (BMNH); 1 ♂, Malekula, Lambubu Bay, IX.1971

(Robinson, R. Soc. Exped.) (BMNH); 1 ♂, Paama, VIII.1974 (NBM); 1 ♂, 1 ♀, Epi, Ringdove Bay (J.J. Walker) (BMNH); 1 ♂, Efaté, Narabo Point, VI.1971 (Robinson, R. Soc. Exped.) (BMNH); 1 ♂, 1 ♀, same data except 10 km NNE of Narabo Point (BMNH); 1 ♂, Efaté, Port Vila, X.1975 (J.A. Burgess) (NBM); 1 ♂, 1 ♀, Efaté, nr Vila, 26.VI.1976 (Burgess) (NBM); 3 ♂, 1 ♀, same data except 11.VII.1976 (NBM); 1 ♂, 1 ♀, Efaté, nr Port Vila, 6.VIII.1976 (Burgess) (NBM).

Remarks. The preceding data are included for purposes of comparison with that of *P. canopus burgessi* Samson, n. subsp., as discussed below. Dr Gaden S. Robinson (pers. commun.) observed 1 ♀ of *P. canopus hypsicles* ovipositing on *Micromelum minutum* Forst.: Espíritu Santo, at the Apouna River valley, 137–305 m (450–1000 ft), VII, IX.1971.

***Papilio canopus burgessi* Samson, new subspecies**

Fig. 1–2

♂. Forewing length, 45–50 mm. *Dorsal surface:* forewing ground-color very dark brown, interrupted by a narrow pale yellow median band fragmenting, particularly in spaces 4, 5, to form white spots. Hindwing basals very dark brown; white discal band broadens slightly in spaces 3–5, paralleled by blue-white scaling in spaces 1b–5. Distal area of hindwing almost black. Orange-yellow at anal angle inferior, describing a faint crescent. *Ventral surface:* ground-color slightly paler than on dorsals. Forewing median and hindwing discal bands similar in extent to those of dorsal surface. Blue-white spotting of hindwing paralleling discal band is well defined from space 1b–6. Yellow-orange scaling at anal angle more extensive than on dorsals. Yellow-orange submarginal spots present in spaces 1b–6, progressively magnified.

♀. Forewing length, 50–60 mm. *Forewings:* dorsal and ventral maculation similar in extent to ♂. *Hindwings:* white discal band similar to that of ♂. Dorsal surface, yellow-orange anal spot well developed; similarly the adjacent blue-white scaling in spaces 1b–3, diminishing in spaces 4, 5. Rudimentary yellow-orange submarginal crescents in spaces 1b–6. Ventral surface, blue-white secondary band well developed; similarly the submarginal yellow-orange crescents, that of space 6 equal in extent to anal angle.

Holotype ♂, allotype ♀, VANUATU [New Hebrides]: Futuna, I.1976 (J.A. Burgess) (NBM). Paratypes, 1 ♂, 1 ♀, same data as holotype (BPBM); 1 ♂, Erromango, Ipota, VIII.1971 (G.S. Robinson, R. Soc. Exped.) (BMNH); 1 ♂, Tanna, 23.IV.1895 (coll. & pres. by W.W. Perry, HMS Pearl) (BMNH); 1 ♀, Tanna, Lenakel area, VII.1971 (Robinson, R. Soc. Exped.) (BMNH); 1 ♂, 1 ♀, Aneityum, 59–199 (BMNH); 2 ♂, Aneityum, Anelgauhaut, VII.1971, larvae on *Citrus* (Robinson, R. Soc. Exped.) (BMNH); 1 ♂, Aneityum, I, II.1976 (Burgess) (NBM).

Remarks. It will be noted from the data that *Citrus* is a larval food-plant for *P. canopus burgessi*, at least on Aneityum I. No description of the larvae was made, although McCubbin (1971) describes the life-history of the Australian subspecies, *P. c. canopus*. Ground-color in both sexes of *P. canopus burgessi* is darker than that of *P. canopus hypsicles*, particularly on the dorsal surface where the hindwing distal margin appears almost black. By further comparison, the taxon exhibits a reduction in width of the fore and hindwing bands by approximately $\frac{1}{3}$.

The above taxon is named after the late James Alexander Burgess, who, through his collecting and observations, first made me aware of this subspecies.

ZOOGEOGRAPHY

Specimens in the BMNH demonstrate that the species *canopus* is distributed throughout the islands of southern Indonesia, from Bali eastward to the Tenimber group; it is apparently not recorded from the island of Lombok. A number of subspecies are represented throughout its range, the nominate race occurring in Australia where it may be restricted to the northern coastal areas of Western Australia, Northern Territory and Queensland (probably confined to the NW coast). The species seems to be absent from New Guinea (Irian-Jaya, Papua New Guinea and outliers) but reappears further east in the Solomons on San Cristobal and southward to Vanuatu. Within Vanuatu, *P. canopus hypsicles* occurs; D'Abrera (1971) figures a male in color, giving the distribution as "New Hebrides." This subspecies is now recorded from the northern and central islands of Vanuatu [New Hebrides], although it is unknown from the Banks and Torres groups. The taxon occupies its most southern range on Efaté, being replaced by *P. canopus burgessi* on Erromango and further south. It is significant to note that several Rhopalocera in Vanuatu subspeciate at this zoogeographical boundary (Samson, in prep.).

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