

A REVISION OF THE GENUS *CANDALIDES* AND ALLIED GENERA (LEPIDOPTERA: LYCAENIDAE)

By G. E. TITE

CONTENTS

	<i>Page</i>
INTRODUCTION	199
<i>HOLOCHILA</i> FELDER	202
<i>CYPROTIDES</i> Gen. n.	213
<i>CANDALIDES</i> HÜBNER	215
<i>ERINA</i> SWAINSON	216
<i>MICROSCENA</i> Gen. n.	219
<i>ADALUMA</i> TINDALE	221
<i>PHILIRIS</i> RÖBER	222
REFERENCES	255
INDEX	258

SYNOPSIS

The omnibus genus *Candalides* is divided into seven genera on structural characters. Keys to the species of the genera *Holochila*, *Erina*, and *Philiris* are provided. The synonymy is revised, and two new genera, twenty-nine new species and eleven new subspecies are described.

INTRODUCTION

THE genus *Candalides* has in the past been used to contain an assembly of varying degrees of affinity (Grünberg in Seitz 1921: 849), including some that are best excluded from the group entirely. Druce (1897: 14) stated that the generic name *Holochila* could not be used on the grounds that it was preoccupied, but did not cite the prior use of the name. A search has revealed the mammalian name *Holochilus* Brant (1835), and it is presumed that Druce thought *Holochila* was a homonym of that name; in fact, a one-letter difference in a generic name disposes of the homonymy (Int. Code zool. Nomencl., Article 56, para (a)), and the name is valid. Druce noted the greater length of the third subcostal vein of the fore wing (vein 9) in *Holochila absimilis* and its allies, but considered it insufficient to warrant generic separation from *Candalides*. Bethune-Baker (1904: 369) stated that he could find no structural difference between the genera *Candalides* and *Philiris*. Waterhouse (1903: 177) and (1914: 77) retained the genus *Philiris* for the *ilias* group, and used *Candalides* for the *xanthospilos*, *erinus*, *heathi*, and *absimilis* groups; at the same time pointing out that each of these groups represented a natural division of the genus. His suggestions are in general agreement with the generic grouping adopted in the present paper. Investigation of the material in the British Museum (Natural History) proves beyond doubt that the genera *Candalides*, *Holochila* and *Philiris* can be separated on structural characters, and that the first

named must be further restricted by the removal of *cyprotus*, and the *erinus* and *heathi* groups. All these form homogeneous and natural groups of species, each differing from the others in structure, shape, and appearance. The proportional length of the stalk of veins 7 and 9 on the fore wing, the course of vein 12, and the relative proportions of the labial palpi, all provide significant characters. In dealing with the labial palpi it has been found convenient to denude them of scales, and to consider the naked organs only.

In the genus *Philiris* there is great difficulty in correlating the sexes ; many of the males are superficially so similar, that they can only be specifically identified with certainty by the examination of the genitalia. In the majority of cases the almost unmarked white undersides, and the sexually dimorphic uppersides, do not provide characters common to both sexes. Further confusion has arisen by the action of some authors in describing females and assigning them to the wrong species. An attempt is here made to group the sexes, taking into account characters common to both sexes where they occur, and considering the whole material from each locality separately ; obviously this can only be looked upon as a tentative solution of the problem. With all this in mind, it has not been considered desirable to found subspecies on characters obtaining in the female sex only.

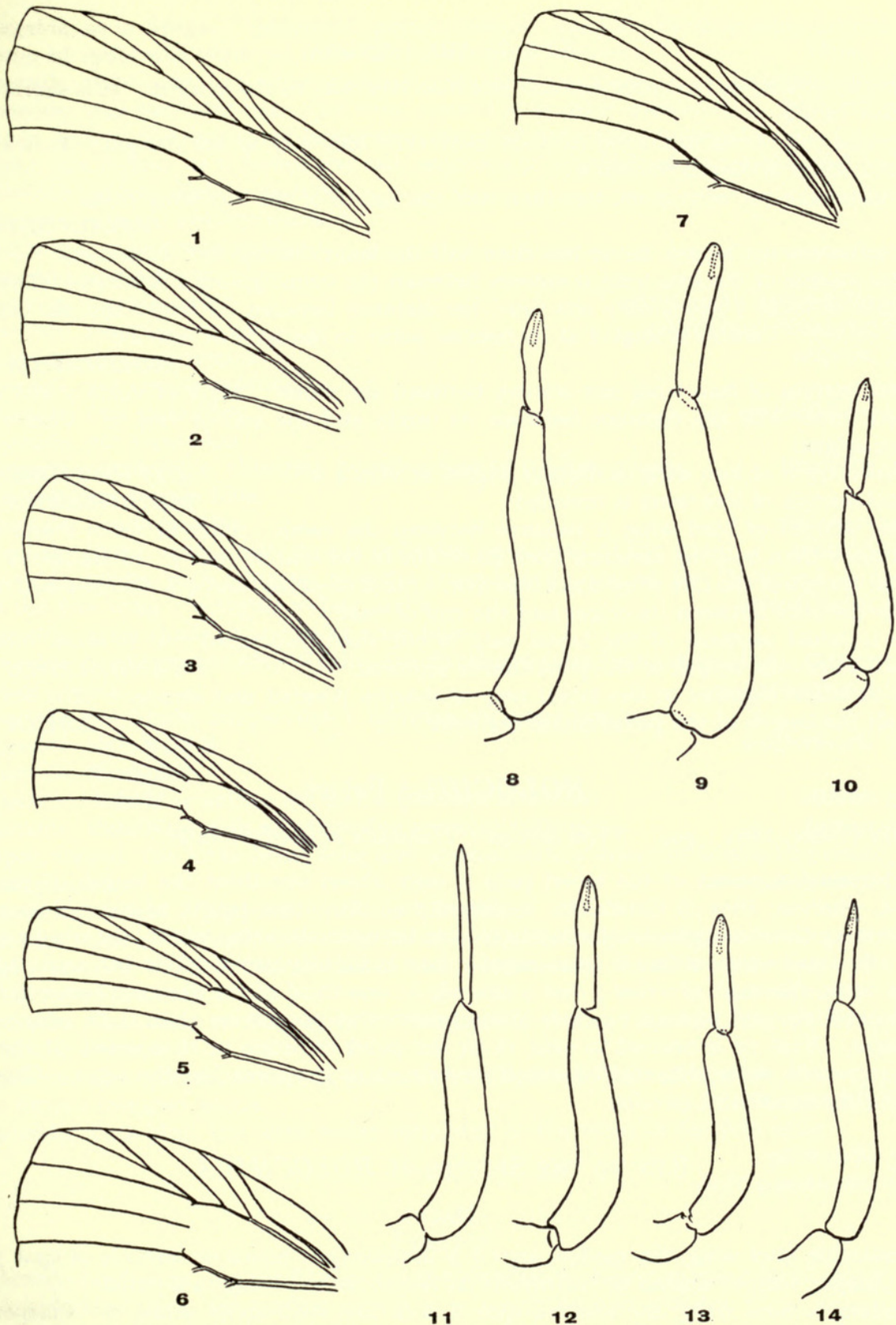
Detailed description of every species has not been attempted, as the characters included in the keys, the text-figures and plates, and the works of authors cited, should provide sufficient means of identification. Where measurements of the length of the fore wing are given, they represent the distance between the base and apex of the wing ; in view of the considerable variation in size in most species of butterflies, they can only serve as a rough guide, and they are only given in those cases in which it is considered that, in conjunction with other characters, they do aid identification.

It should be noted that Jordan (1930 : 60) pointed out that the species from Owgarra, British New Guinea, described by Bethune-Baker (1906 : 100-101) came actually from the nearby Angabunga River ; he made no reference to pages 102-104 on which Bethune-Baker describes four more species from Owgarra. In the present work the locality is quoted as given by Bethune-Baker.

Citations of data and numbers of specimens following the words " Other material " or " Distribution " refer to specimens in the B.M. (N.H.) which have been examined. The word (Type !) after a reference indicates that the type has been examined.

ACKNOWLEDGEMENTS

The author wishes to express his thanks and appreciation to the following gentlemen : Dr. F. H. Rindge of the American Museum of Natural History, New York ; Dr. P. J. Darlington Jr., Museum of Comparative Zoology, Cambridge, Mass., both of whom made possible the examination and dissection of certain types in their care ; and his colleague Mr. N. H. Bennett, who was prevented by other work from joining him as co-author of this paper, but nevertheless generously placed his notes and microscopic preparations at the author's disposal.



FIGS. 1-7. neuration of forewing : 1, *Holochila absimilis* ; 2, *Cyprotides cyprotus* ; 3, *Candalides xanthospilos* ; 4, *Erina erina* ; 5, *Microscena heathi* ; 6, *Adaluma urumelia* ; 7, *Philiris ilias*.

FIGS. 8-14. labial palpi : 8, *Holochila absimilis* ; 9, *Cyprotides cyprotus* ; 10, *Candalides xanthospilos* ; 11, *Erina erina* ; 12, *Microscena heathi* ; 13, *Adaluma urumelia* ; 14, *Philiris ilias*.

KEY TO THE GENERA

- 1 Discoidal cell of the fore wing extends less than half-way to the margin. It is shorter than vein 6 2
- Discoidal cell of the fore wing extends more than half-way to the margin. It is at least equal in length to vein 6 5
- 2 The antennae are very short, less than half the length of the fore wing costa
ADALUMA (p. 221)
- The antennae are longer, never less than half the length of the fore wing costa 3
- 3 Distal margin of the fore wing is convex between the veins, giving a scalloped effect. Stalk of veins 7 and 9 only one third the distance between its origin and the end of vein 7. Vein 12 is angled at its nearest point to the base of vein 11
HOLOCHILA (p. 202)
- Distal margin of fore wing not convex between the veins. Stalk of veins 7 and 9 just under half the distance between its origin and the end of vein 7. Vein 12 not angled 4
- 4 Distal margin of fore wing is slightly angled at vein 4 **CYPROTIDES** (p. 213)
- Distal margin of fore wing is rounded **MICROSCENA** (p. 219)
- 5 Distal margin of hind wing is concave between the veins. Stalk of veins 7 and 9 is more than half the distance from its origin to the end of vein 7
PHILIRIS (p. 222)
- Distal margin of the fore wing is not concave. Stalk of veins 7 and 9 is less than half of the distance between its origin and the end of vein 7 6
- 6 The terminal segment of the labial palp is not sharply pointed ; it is more than two-thirds the length of the penultimate segment **CANDALIDES** (p. 215)
- The terminal segment of the labial palp is sharply pointed and slender ; it is only half the length of the penultimate segment **ERINA** (p. 216)

HOLOCHILA Felder

Holochila Felder, 1862 : 490. Type species : *Holochila absimilis* Felder.

The terminal segment of the labial palp is only about one-third the length of the middle segment, whereas, that of *Candalides* is almost two-thirds the length of its middle segment. The fore wing distal margins are distinctly convex between the veins, giving the wing a scalloped effect ; the hind wing outline is more regular, but is slightly produced at the anal angle. On the fore wing, the stalk of veins 7 and 9 extends to one-third of the distance between its point of origin and the end of vein 7 ; it is always shorter in proportion than is its counterpart in *Candalides*. Vein 12 is nearest to vein 11 at the point of origin of that vein ; it then bends sharply upwards, increasing its distance from vein 11 as it approaches the costa. These veins in *Candalides* are almost parallel.

KEY TO THE SPECIES OF **HOLOCHILA**

MALES

- 1 Underside hind wing, the median spot 6 is immediately below or inwards of spot 7. Clasper, simple, angled at two-thirds its length, terminating in a point 2
- Underside hind wing, the median spot 6 is in line with spots 5 and 7. Clasper, complex, never as in 2 5
- 2 Upperside fore wing, the veins are not thickened by scent scales 3
- Upperside fore wing, the veins are always thickened by scent scales. 4
- 3 Upperside, bright blue with a deep blue refractive gloss. Underside, pattern weakly marked, the fore wing median series of spots is very close to the sub-marginal lunules **tringa** (p. 205)

- Upperside, as in *tringa*. Underside, pattern heavily marked, the fore wing median series of spots well removed from the submarginal lunules . . . **biaka** (p. 205)
- 4 Upperside, slate-blue, fore wing apex not noticeably produced . . . **margarita** (p. 204)
- Upperside, pale lavender-blue, fore wing apex is noticeably produced . . . **gilberti** (p. 205)
- 5 Clasper, forked, the inner arm being very long and directed transversely . . . 6
- Clasper, not forked, or if forked the two arms are of approximately equal length . . . 17
- 6 Underside pattern, lightly marked 7
- Underside pattern, heavily marked 13
- 7 Upperside, bright greenish blue 8
- Upperside, not greenish blue 9
- 8 Upperside, margins wide **dimorpha dimorpha** (p. 206)
- Upperside, margins narrow **dimorpha helenita** (p. 206)
- 9 Upperside, copper-coloured **cuprea** (p. 206)
- Upperside, not copper-coloured 10
- 10 Upperside, dull slate-blue **ardosiacea** (p. 206)
- Upperside, not slate-blue 11
- 11 Upperside, purple-blue, changing by refraction to reddish purple . . . **limbata** (p. 207)
- Upperside, not purple blue 12
- 12 Upperside, turquoise-blue **riuensis** (p. 208)
- Upperside, black, with a rich purple suffusion over most of the wing . . **pruina** (p. 208)
- 13 Upperside, white, with a strong metallic green basally and on the thickened veins of the fore wing ; margins widely black . . . **viriditincta** (p. 209)
- Upperside, some shade of purple or slate blue 14
- 14 Upperside, bright purple-blue basally, the thickened veins being deep blue ; margins widely black **neurapacuna** (p. 209)
- Upperside, not bright purple-blue ; margins narrowly black 15
- 15 Upperside, slate-purple **meforensis** (p. 207)
- Upperside, slate-blue 16
- 16 Upperside, slate-blue with a refractive greenish reflection . . . **silicea** (p. 207)
- Upperside, slate-blue with no refractive greenish reflection . . . **lamia** (p. 208)
- 17 Clasper, forked, the forks being long and approximately equal in length. Upperside, dusty mauve **subrosea** (p. 210)
- Clasper, not forked. Upperside, blue or slate-blue 18
- 18 Upperside, blue. Underside, heavily marked, the markings sandy brown in colour, the fore wing median band is broad and continuous ; base of hind wing often suffused with sandy scales **grandissima** (p. 211)
- Upperside, slate-blue or slate-purple. Underside, weakly marked, the markings blackish fuscous 19
- 19 Upperside, slate-purple, the scent scales extend between the veins of the fore wing to form a rounded patch **consimilis** (p. 213)
- Upperside, slate-blue, the scent scales restricted to the veins of the fore wing . . . **absimilis** (p. 211)
and? **persimilis** (p. 213)

FEMALES

- 1 Underside hind wing, the median spot 6 is immediately below or inwards of spot 7 . . . 2
- Underside hind wing, the median spot 6 is in line with spots 5 and 7 5
- 2 Upperside, mainly pale lavender-blue 3
- Upperside, fuscous with a large white area on each wing, the fore wing basally bluish . . . 4
- 3 Upperside, fore wing dusky costal margin does not extend into the cell, the veins on all wings not darkened, hind wing not clouded with dusky scales . . . **gilberti** (p. 205)
- Upperside, fore wing dusky costal margin extends over most of the cell, the veins on all wings darkened, hind wing clouded with dusky scales . . . **biaka** (p. 205)

- 4 Upperside, the veins crossing the white areas are black *tringa* (p. 205)
 - Upperside, the veins crossing the white areas are white *margarita* (p. 204)
 5 Upperside, predominantly some shade of green, blue, or black 6
 - Upperside, predominantly black and white 11
 6 Upperside, predominantly black 7
 - Upperside, predominantly some shade of green or blue 8
 7 Upperside, fore wing with a greyish streak above the median vein, widening and becoming lighter grey in the disc *pruina* (p. 208)
 - Upperside, fore wing with a much wider lavender streak, widening in the disc, hind wing fuscous black laved with lavender *lamia* (p. 208)
 8 Upperside, all wings smoky grey-blue *meforensis* (p. 207)
 - Upperside, all wings not smoky grey-blue 9
 9 Upperside, fore wing pale green-blue, turning to whitish in the disc. Hind wing green-blue darkened by fuscous scales *silicea* (p. 207)
 - Upperside, all wings blue or lavender 10
 10 Upperside all wings brilliant blue *riuensis* (p. 208)
 - Upperside all wings, very pale whitish lavender merging into fuscous margins *coerulea* (p. 210)
 11 Underside, heavily marked, the markings being sandy brown. Base of hind wing often suffused with sandy scales *grandissima* (p. 211)
 - Underside, lightly marked, the markings being blackish or dusky brown. Base of hind wing not suffused 12
 12 Upperside, the white areas on all wings suffused with metallic green scales *viriditincta* (p. 209)
 - Upperside, the white areas on all wings not suffused with metallic green scales 13
 13 Upperside, fore wing black with rounded white area in the disc. Hind wing, the pale area is distinctly blue *consimilis* (p. 213)
 - Upperside, black all wings with a rounded white area, and usually some blue scaling at their bases 14
 14 Upperside hind wing, the white area never reaches the costa *absimilis* (p. 211)
 - Upperside hind wing, the white area always reaches the costa 15
 15 Underside all wings, the markings clear-cut and all series complete *neurapacuna* (p. 209)
 - Underside all wings, the markings faint and often partially obsolete 16
 16 Upperside, blue basal scaling restricted on the fore wing ; entirely absent on the hind wing *cuprea* (p. 206)
 - Upperside, blue basal scaling present on all wings 17
 17 Upperside, the white area on the fore wing large, extending well over vein 5 *ardosiacea* (p. 206)
 - Upperside, the white area on the fore wing small, never extending over vein 5 *helenita* (p. 206)

Holochila margarita Semper

(i) *H. margarita margarita* Semper (Text-figs. 15, 16 and 19)

Holochila margarita Semper, 1879 : 161, Bowen (Type !).

Holochila helenita Semper, 1879 : 162 (♀ allotype ! nec. ♂ type !).

Represented in the B.M. (N.H.) by Semper's type, which is labelled " Bowen ", and by a series of 21 ♂, and 12 ♀, extending from Northern Queensland to Sydney.

(ii) *H. margarita maria* (Bethune-Baker) **comb. n.**
(Text-fig. 20)

Candalides maria Bethune-Baker, 1908 : 120, Aroa River (Type !).

The male is superficially not to be distinguished from the nominate subspecies, and its genital armature only differs in the proportionately larger size of the male clasp. The female exhibits a great reduction in the extent of the white patch on each wing.

Distribution, MYSOL ; ARU ; WAIGEU ; NEW GUINEA.

Holochila gilberti (Waterhouse) **comb. n.**
(Text-fig. 21)

Candalides gilberti Waterhouse, 1903 : 181, Port Darwin.

Candalides gilberti Waterhouse ; Waterhouse, 1932 : 129, pl. 19, figs. 3-3a.

Besides the characters given in the key, this species can be identified by the sharp black spotting on the underside, and by the distinct angle at vein 5 in the median band of the fore wing. Surprisingly, in spite of these external differences and the very distinct female, the male genitalia are identical with those of *margarita*.

Distribution, AUSTRALIA : Port Darwin xii.1909, (Dodd) 1 ♂, 3 ♀ ; Adelaide River, ix-iv.1891-2, (J. J. W.), 1 ♂ ; Queensland (without further details) 2 ♂, 2 ♀. The accuracy of the last named is in doubt.

Holochila tringa Grose-Smith
(Text-figs. 17, 18, and 22)

Holochila tringa Grose-Smith, 1894 : 581, Humboldt Bay (Type !).

Holochila tringa Grose-Smith ; Grose-Smith & Kirby, 1896, pl. 9, figs. 1 and 2.

Distribution, NEW GUINEA.

Holochila biaka **sp. n.**

(Pl. 1, figs. 120-121, Pl. 2, figs. 131-132. Text-fig. 23)

The relationship of this insect with *H. tringa* provides another example of the interesting phenomenon—to be found elsewhere in this genus—of two species closely connected by the structure of the male genitalia, although exhibiting slight but constant external differences in the male, and wide divergencies in both colour and wing pattern in the female.

On the upperside, the male is confusingly like that of *tringa*, exhibiting the same bright blue colouring, with a deep blue gloss, which is more intense on the fore wing, but with much narrower dark margins on all wings. The fore wing of the female is pale lavender ; which colour extends from the base, through the lower third of the cell, and fills areas 1, 2, and 3, until it merges gradually with the roughly 3 mm. wide grey-black distal margin. A wider grey-black band covers the costal portion of the wing, that also merges gradually with the lavender area. On the hind wing the lavender has a somewhat smoky appearance, resulting from an admixture of dusky scales ; the grey-black areas are much lighter than those of the

fore wing, and fill the whole area from the hindmargin to the diffuse marginal band from vein 4 to vein 7, and the costal area. A dusky thread-like streak closes the cell, and all the veins are perceptibly darkened. Both sexes on the underside are decidedly whiter than *tringa*, and all the dark markings are heavier and more clearly marked, the median row on the fore wing is situated farther from the margin, and is distinctly angled at vein 6 in the male. The male clasp is shorter and stouter than in *tringa*.

Holotype ♂, SCHOUTEN ISLANDS : Biak, vi.1914 (*Pratt Bros.*), B.M. Type No. Rh. 16794.

Allotype ♀, as holotype, B.M. Type No. Rh. 16795.

Other material, as holotype, 1 ♂.

***Holochila helenita* Semper**

(i) ***H. helenita helenita* Semper**
(Text-fig. 24)

Holochila helenita Semper, 1879 : 162, Cape York (Type !), ♂ nec ♀.

Holochila androdus Miskin, 1890 : 41, Cape York.

Holochila subargentea Grose-Smith & Kirby, 1896, pl. 9, figs. 9-10, Cape York.

Examination of Semper's female allotype leaves no doubt that it is an example of *H. margarita*.

Distribution, AUSTRALIA : Cape York to Sydney.

(ii) ***H. helenita dimorpha* (Röber) comb. n.**
(Text-fig. 35)

Plebeius dimorphus Röber 1886 : 62, Eastern New Guinea.

Distribution, MYSOL ; WAIGEU ; JOBI ; NEW GUINEA.

***Holochila cuprea* (Röber) comb. n.**
(Text-fig. 25)

Plebeius dimorphus var. *cupreus* Röber, 1866 : 62, N.W. New Guinea.

Distribution, NEW GUINEA.

***Holochila ardosicea* sp. n.**

(Pl. 1, figs. 122-123, Pl. 2, figs. 133-134. Text-fig. 26)

In the male there is a marked resemblance to that sex of *H. margarita maria* which comes from the same geographical area ; it only differs by possessing a smooth greyish tint to the slate-blue ground colour, and by the thickened veins of the fore wing being clearly perceptible no matter what the angle of light or view ; these characters are so subtle that they only became apparent when the two series were separated by means of the position of the median spots on the underside of the hind wing, mentioned in the key. The blackish marginal line is thread-like, though somewhat thickened as it approaches the hind angle of the hind wing. The female can be distinguished from that of *dimorpha* by the round whitish area on the fore wing, which extends over vein 5 and well into the basal portion of the cellule above. The underside of both sexes is not distinguishable from that of *dimorpha*.

Holotype ♂, BRITISH NEW GUINEA : Upper Aroa River, ii.1903 (*A. S. Meek*), B.M. Type No. Rh. 16796.

Allotype ♀, as holotype, B.M. Type No. Rh. 16797.

Other material, ARU ; NEW GUINEA.

***Holochila limbata* sp. n.**

(Pl. 1, fig. 130, Pl. 2, fig. 141. Text-fig. 27)

The upperside is darker than in any of the other blue species in the genus ; as stated in the key, the colour changes from purple-blue to reddish purple by refraction ; on the hind wing above vein 7 there is a diffuse oval whitish area. All wings are heavily margined by a black band of over 1 mm. in breadth, widening to over 2 mm. at the apex of the fore wing. The veins are darkened by the presence of blackish scales ; their androconial thickening is confined to the median vein and the bases of its branches, and is not readily observable unless the insect is viewed against the light. The underside is like that of *dimorpha*.

Holotype ♂, DUTCH NEW GUINEA : Snow Mountains, Near Oetakwa River, up to 3500', x-xii.1910 (*A. S. Meek*), B.M. Type No. Rh. 16798.

Other Material, DUTCH NEW GUINEA : 2 Days N. of Fak Fak, xii.1907, 1700' (*A. E. Pratt*), 1 ♂.

***Holochila silicea* Grose-Smith**

(Text-fig. 28)

Holochila silicea Grose-Smith, 1894 : 580, Biak, Schouten Islands (Type !).

Holochila silicea Grose-Smith ; Grose-Smith & Kirby, 1896, pl. 9, figs. 6-7.

Recognizable in the male by the peculiar greenish tinge of the slate-blue ground, and in the female by the blue-grey patch of the fore wing also having a greenish tinge.

Distribution, DUTCH NEW GUINEA : Geelvink Bay : Schouten Islands ; Mefor Island.

***Holochila meforensis* sp. n.**

(Pl. 1, figs. 124-125, Pl. 2, figs. 135-136. Text-fig. 29)

Slate-purple in the male above, all the wings are margined with a fine fuscous line, the fringes are fuscous at the base, and white in the outer portion. The female is predominantly smoke blue-grey ; which colour merges into the wide costal and distal margins on all wings, extending on the fore wing as a smoky suffusion well into the dusky costal band, just below the apex. On the hind wing there is an indefinite whitish area situated between veins 6 and 7. The underside in both sexes is rather sordid white, blue scaled at the base of the hind wing, and with all the markings peculiar to the genus sharply defined in brownish fuscous.

Holotype ♂, DUTCH NEW GUINEA : Geelvink Bay, Mefor Island, Suer, v-vi.1897 (*W. Doherty*), B.M. Type No. Rh. 16799.

Allotype ♀, as holotype, B.M. Type No. Rh. 16800.

Other material, DUTCH NEW GUINEA : as holotype 2 ♀ ; Mefor Island, viii.1920 (*Pratt Bros.*), 1 ♂, 3 ♀.

***Holochila riuensis* sp. n.**

(Pl. 1, figs. 126–127, Pl. 2, figs. 137–138. Text-fig. 30)

Like the two preceding species, this is insular, quite isolated from its congeners by external characters, and exhibiting slight but constant genitalic differences. All wings in the male are turquoise-blue, with narrow black margins, and white edged fringes. The costal area above vein 7 of the hind wing is greyish. On the female fore wing, a bright blue patch occupies the greater part of the wing; this spreads from the base over the cell, and well into the bases of areas 1 to 5, its distal limits rounded and reaching to within 2 mm. of the wing margin. The black remainder of the wing takes the form of a wide continuous band extending the length of the costa, the distal margin, and in a wedge form along the outer half of the hind margin. The hind wing is pale blue—considerably sullied by a sprinkling of black scales—and margined by black to a width of 1 mm. A vague whitish wedge fills the space between veins 6 and 7; the costal region is greyish-black, and all the veins are blackened. On the underside, the ground is satin-white, with some blue-green scaling at the base of the hind wing. The dark markings are all present, but extremely fine and hair-like. The median series on the fore wing is very close to the submarginal lunules.

Holotype ♂, LOUISIADE ARCHIPELAGO : Sudest Island, Mount Riu, 2000', iv.1916 (*Eichhorn Bros.*), B.M. Type No. Rh. 16801.

Allotype ♀, as holotype, B.M. Type No. Rh. 16802.

Other material, LOUISIADE ARCHIPELAGO : Sudest Island (*Eichhorn Bros.*), and (*Meek*), 7 ♂, 9 ♀.

***Holochila lamia* Grose-Smith**

(Text-fig. 32)

Holochila lamia Grose-Smith, 1897 : 179, Fergusson I. (Type !) ♂.

Holochila lamia Grose-Smith ; Grose-Smith & Kirby, 1898, pl. 13, figs. 1–3, Fergusson I., ♂ ♀.

This slate-blue species is easily recognized by the strongly marked underside pattern, and by the greyish-white colour between the base and the median series of striae on that surface. The female is very like that of *H. silicea*, but the patch on the fore wing above is blue. Males from Goodenough Island are identical with those from the type locality; in the females, however, the patches on the fore wing are paler blue, and the hind wing ground colour is pale grey-blue, in contrast to the very dusky shade of the female allotype. Until more material becomes available, it would be rash to suggest subspecific separation on these grounds.

Distribution, D'ENTRECASTEAUX ARCHIPELAGO : Fergusson Island, xii. 1894 (*A. S. Meek*), 3 ♂ 1 ♀ (including types); Goodenough Island, 2500–4000', iv–v. 1913 (*A. S. Meek*), 7 ♂, 3 ♀.

***Holochila pruina* (Druce) comb. n.**

(Text-fig. 31)

Candalides pruina Druce, 1904 : 140, Aroa River (Type !).

Candalides pruina Druce ; Joicey & Talbot, 1916a : 81, Wandammen Mountains, ♀ (Neallotype!).

The male is quite distinctive : the black upperside with the large purple area on the fore wing makes it unlike any other species. No geographical differences can be detected in this sex. Joicey & Talbot describe the upperside of the female fore wing as follows : “ ♀. Wings more rounded, ground-colour a little paler. Fore wing with a narrow whitish median stripe, tinged with pale blue and extending from the

base along the lower edge of the cell to halfway between cell and margin, being much broader beyond the cell". This aptly describes the female neallotype, the only example from Wandammen Mountains, but examples from British New Guinea, Mondo River in Mandated New Guinea, and Oetakwa River and Weyland Mountains in Dutch New Guinea, all exhibit a rather nebulous greyish median stripe of individually variable extent and never exceeding in size the blue tinged white stripe of the Wandammen example. Two females from the Arfak Mountains have a stripe, narrow and blue scaled at the base, but widening into an extensive white oval patch in the centre of the wing. A smaller somewhat obscured patch is present in the apical area between vein 6 and the costa on the hind wing. These facts suggest a geographical distribution of races, only recognizable in the female, but the material at hand is not sufficient to substantiate this.

Distribution, NEW GUINEA.

***Holochila neurapacuna* (Bethune-Baker) comb. n.**

(Text-fig. 34)

Candalides neurapacuna Bethune-Baker, 1908 : 121, pl. 9, fig. 10, Angabunga River (Type !).

Rothschild (1915 : 30) described what he supposed was the female of this species from two male examples of the species described below as *viriditincta* ; one of them—a discoloured greyish insect—bears a label : "Candalides ? sp. perhaps female of *C. neurapacuna* Beth.-Baker". These two insects are not otherwise mentioned in the report, and there are certainly no other *Candalides* or *Holochila* amongst the material collected by the expedition to which the description could possibly apply.

The true female is represented in the B.M. (N.H.) by a single specimen from the type locality ; its upperside is very like that of the same sex of *H. helenita*. On the underside, the brown markings are arranged on the silver-white ground exactly as in Bethune-Baker's male type, and leave no doubt of its relationship.

Neallotype ♀, BRITISH NEW GUINEA : Angabunga River, 6000' upwards, xi-ii. 1904-5 (*A. S. Meek*), B.M. Type No. Rh. 16870.

Other material, BRITISH NEW GUINEA : Aroa, Mambare, and Angabunga Rivers (*Meek*), 7 ♂ (including holotype). MANDATED NEW GUINEA : West of Herzog Mountains, Edie Creek (*A. E. Eichhorn*) 1 ♂.

***Holochila viriditincta* sp. n.**

(Pl. 1, figs. 128-129, Pl. 2, figs. 139-140. Text-fig. 33)

Candalides neurapacuna Bethune-Baker ; ♀ Rothschild, 1915 : 30, Snow Mountains.

Predominantly white in the male above, suffused with pale metallic green ; a narrow black costal marginal band is continuous with the wide black distal margin, which is 5 mm. wide at the apex, and narrows to 2 mm. at vein 1. The basal portions of the veins of the fore wing are thickened by the presence of pale metallic green scales, those on veins 5, 6 and 7, forming a three pronged incursion into the black distal band. On the hind wing, the metallic green does not extend above vein 6, leaving the apical area clear white. The base of the costa is suffused with blackish, and there is a linear dark distal margin ; all the veins are darkened.

In the female, the black costal margin of the fore wing gets progressively wider, its lower edge merging with the distal margin in a sweeping curve ; the centre of the wing is clear white, and the remainder is white suffused with metallic green. The hind wings are less heavily suffused with green than are those of the male, but are otherwise very similar. The underside in both sexes is identical with that of *neurapacuna*.

Holotype ♂, DUTCH NEW GUINEA : Weyland Mountains, Menoo Valley, Mount Kunupi, 6000', xii-i.1920-1 (*Pratt Bros.*), B.M. Type No. Rh. 16803.

Allotype ♀, as holotype, B.M. Type No. Rh. 16804.

Other material, DUTCH NEW GUINEA : as holotype, 5 ♂, 13 ♀ ; Menoo Valley, 3600-5000', xi-i.1920-21 (*Pratt Bros.*), 9 ♂ ; Snow mountains, Utakwa River, 4-6000', i-ii.1913 (*A. F. R. Wollaston*), 2 ♂.

Holochila coerulea (Röber)

(i) *H. coerulea coerulea* (Röber)

Plebeius dimorphus var. *coeruleus* Röber, 1886 : 62, Aru.

The underside markings in both sexes show a marked tendency to obsolescence. All the marginal spots are very small.

Distribution, ARU.

(ii) *H. coerulea subrosea* Grose-Smith **comb. n.**

(Text-figs. 46, 47)

Holochila subrosea Grose-Smith, 1894 : 580, Humboldt Bay (Type !).

Holochila subrosea Grose-Smith ; Grose-Smith & Kirby, 1896, pl. 9, figs. 3, 4 and 5.

The underside pattern is clearly evident, and the marginal spots are larger than those of the nominate subspecies.

Distribution, NEW GUINEA : Humboldt Bay.

(iii) *H. coerulea doreia* **ssp. n.**

The male is distinctly deeper slate-blue than either of the other subspecies. In the female, the dusky parts of the wings are darker, and tend to restrict and obscure the blue-grey areas. The underside in both sexes is distinguished by the large size of the marginal spots on all wings ; these spots are always distinctly larger than those of *subrosea*.

Holotype ♂, DUTCH NEW GUINEA : Dorey Bay, iv-v.1909 (*Pratt. Bros.*), B.M. Type No. Rh. 16805.

Allotype ♀, DUTCH NEW GUINEA : Dorey (*Doherty*), B.M. Type No. Rh. 16806.

Other material, DUTCH NEW GUINEA : Dorey Bay (*Pratt Bros.*), 21 ♂, 1 ♀ ; Dorey, vi.1897 (*W. Doherty*), 1 ♂, 3 ♀ ; Dorey, 1 ♂, 2 ♀ ; South Geelvink Bay, Wangaar, ii.1921 (*Pratt Bros.*), 1 ♀ ; Geelvink Bay, Coast District, xi.1914 (*Pratt Bros.*), 1 ♀ ; Mt. Goliath, iii.1911 (*A. S. Meek*), 1 ♂.

***Holochila grandissima* (Bethune-Baker) comb. n.**(i) ***H. grandissima grandissima* (Bethune-Baker)**

(Text-figs. 38, 39)

Candalides grandis Bethune-Baker, 1906 : 102, Owgarrá (Type !).*Candalides grandissima* Bethune-Baker ; Bethune-Baker, 1908 : 121, Owgarrá, n. n. for *C. grandis*.*Candalides grandissima* Bethune-Baker ; Grünberg (in Seitz), 1921 : 851 [nec fig. 1458].The figures in Seitz of *grandissima* represent *Philiris griseldis gisella* (Staudinger).

Distribution, BRITISH and MANDATED NEW GUINEA.

(ii) ***H. grandissima morobea* (Wind & Clench) comb. n.***Candalides grandissima morobea* Wind & Clench, 1947 : 4, Morobe District, Mandated New Guinea.

There are no specimens available for study in the B.M. (N.H.).

***Holochila absimilis* Felder**

(Text-figs. 8, 36, and 37)

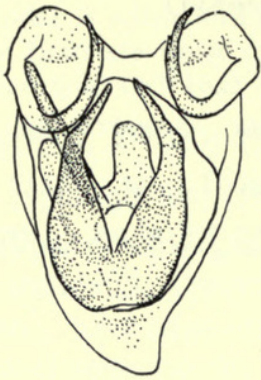
Holochila absimilis Felder, 1862 : 490, Ash I. (Type !).*Candalides absimilis* (Felder) Waterhouse, 1932 : pl. 19, figs. 1-1a.*Candalides absimilis* (Felder) ; Waterhouse, 1942 : 123.

With the material in the B.M. (N.H.) it has not been found possible to separate this species from *persimilis* Waterhouse. Waterhouse founded *persimilis* on a slight difference in the male clasps, some slight differences in the male wing colour, and the appearance of the sex marks on the fore wing.

The examination of a large number of preparations leads to the conclusion that the difference he observed in the clasps, if not individual variations, may have been the result of the varying positions of the organs concerned, or of cover glass pressure ; this is borne out by the fact that in more than one of the preparations made, one of the clasps appears to represent *absimilis* (*sec.* Waterhouse), while the other represents *persimilis*. External geographical differences are observable : males from the Cooktown, Cairns, Kuranda area in Northern Queensland are more blue above, and the black tornal spot on the hind wing beneath shows a tendency to increased size : females from this area exhibit a much greater expanse of white on the upperside of the hind wing, extending from vein 2 to vein 7, whereas that of examples from Brisbane and New South Wales extends only from halfway between veins 3 and 4 to vein 7. Males from Mackay are like the more northern ones from Cooktown, but Mackay females resemble more closely those from Brisbane.

Further elucidation of the problem would best be conducted by a worker in the field who could study the live insects and their early stages. For the time being, therefore, it is proposed to treat all the material as *absimilis*, and to leave the question of the status and identity of *persimilis* until further evidence is available.

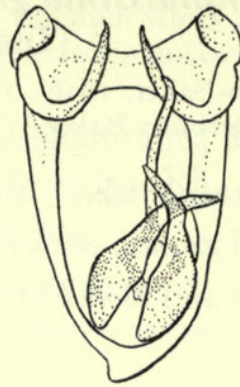
Distribution, AUSTRALIA : Queensland, and New South Wales.



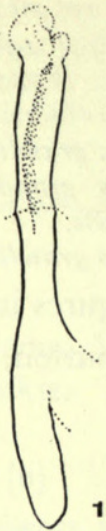
15



16



17



18



19



20



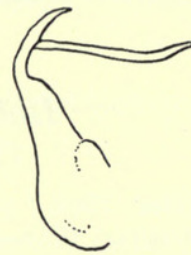
21



22



23



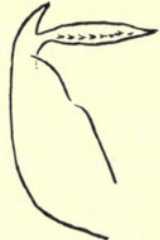
24



25



26



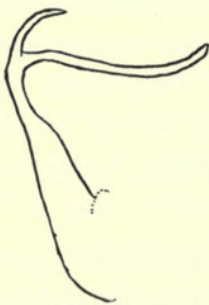
27



28



29



30



31

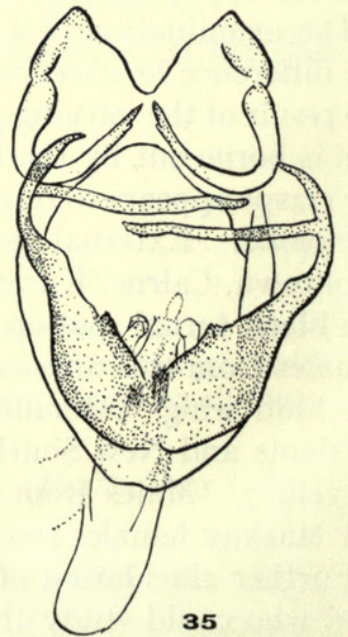


32

33



34



35

***Holochila persimilis* (Waterhouse) comb. n.**

Candalides persimilis Waterhouse, 1942 : 123, Mackay, Queensland.

The identity of this species is uncertain. (See *absimilis*.)

***Holochila consimilis* (Waterhouse) comb. n.**

(Text-figs. 40, 41, and 42)

Candalides consimilis Waterhouse, 1942 : 124, Sydney.

Candalides consimilis Waterhouse ; Smales & Ledward, 1943 : 48, early stages.

Besides the characters mentioned in the key, this insect may be recognized in both sexes by the produced and somewhat pointed anal angle of the hind wing.

Distribution, AUSTRALIA : Sydney and Brisbane.

CYPROTIDES gen. n.

(From *cyprotus*, name of type species with suffix ides masc.)

Type : *Chrysophanus cyprotus* Olliff.

The terminal segment of the labial palp is approximately half the length of the middle segment and is of even width throughout, whereas that of *Holochila* is constricted below its centre and very much shorter. The fore wing distal margin is not scalloped, but is slightly angled at vein 4. Veins 7 and 9 arise from a common stalk which is under half but much more than one third the distance between the origin of the stalk and the end of vein 7. Vein 12 is straighter than that of *Holochila* and does not approach vein 11 so closely. In the male, the hind wing is distinctly produced and pointed at the anal angle. Androconial scales are present on the median and submedian veins of the fore wing, as in most *Holochila* species.

***Cyprotides cyprotus* (Olliff) comb. n.**

(i) ***C. cyprotus cyprotus* (Olliff) comb. n.**

(Text-figs. 2, 9, 48, 49 and 50)

Chrysophanus cyprotus Olliff, 1886 : 716, New South Wales.

Holochila purpurea Grose-Smith & Kirby, 1897 : 7, pl. 10, figs. 11-12, Sydney (Type !).

Holochila purpurea Grose-Smith & Kirby ; (as synonym of *C. cyprotus* Olliff) Waterhouse 1902 : 333.

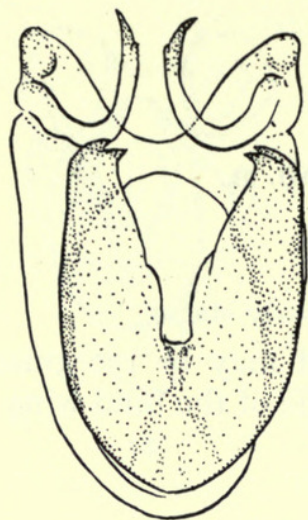
Waterhouse (1928) records that *cyprotus* from Sydney is single brooded.

Distribution, AUSTRALIA : New South Wales.

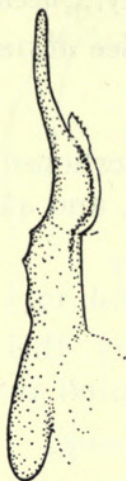
FIGS. 15, 17, 35. ♂ genital armature : 15, *Holochila margarita* ; 17, *H. tringa* ; 35, *H. dimorpha*.

FIGS. 16 and 18. aedeagus : 16, *Holochila margarita* ; 18, *H. tringa*.

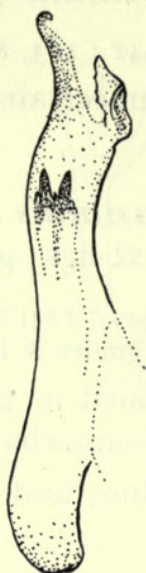
FIGS. 19-34. ♂ clasper : 19, *Holochila margarita* ; 20, *H. maria* ; 21, *H. gilberti* ; 22, *H. tringa* ; 23, *H. biaka* ; 24, *H. helenita* ; 25, *H. cuprea* ; 26, *H. ardosiaacea* ; 27, *H. limbata* ; 28, *H. silicea* ; 29, *H. meforensis* ; 30, *H. riuensis* ; 31, *H. pruina* ; 32, *H. lamia* ; 33, *H. viriditincta* ; 34, *H. neurapacuna*.



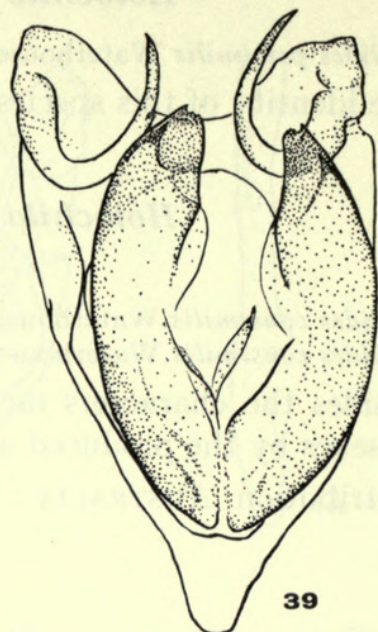
36



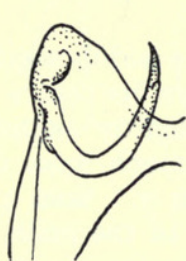
37



38



39



40



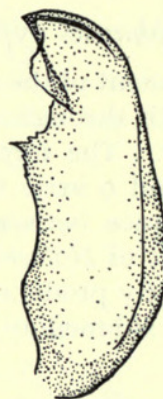
41



42



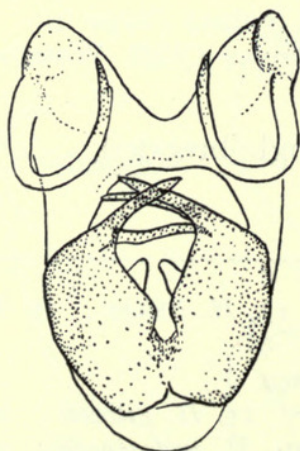
43



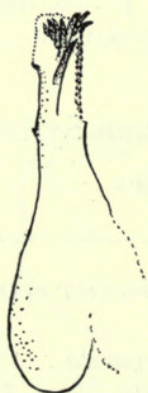
44



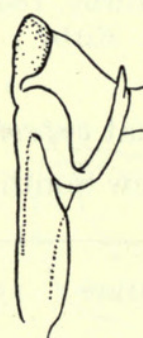
45



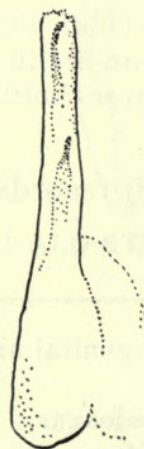
46



47



48



49



50

(ii) *C. cyprotus pallescens* ssp. n.

Generally larger than the preceding, the male fore wing measuring 16 to 20 mm. as compared with 15–17 mm. of *c. cyprotus*. The male ground colour is of a softer, more rosaceous hue. The female does not differ above from that of the nominate race. Beneath, both sexes have a dusty ochraceous ground, much paler than that of *c. cyprotus*; the submarginal and discal markings are fine, but the pattern is usually complete, whereas that of *cyprotus* has a marked tendency to obsolescence.

Waterhouse (1928) states that at Brisbane the species produces two broods in the year.

Holotype ♂, AUSTRALIA : Queensland : Brisbane, Taylor Range (*P. P. Dodd*), B.M. Type No. Rh. 16807.

Allotype ♀, AUSTRALIA : Queensland : Emu Park Coast (23° 13' S., 150° 51' E.) (*Barnard Coll.*), B.M. Type No. Rh. 16808.

Other material, AUSTRALIA : Queensland ; Brisbane ; Duaringa.

CANDALIDES Hübner

Candalides Hübner, 1819 : 73.

Type : *Rusticus adolescens xanthospilos* Hübner.

The terminal segment of the labial palp is almost two-thirds the length of the middle segment. The wing margins are entire, not scalloped or emarginated. Veins 7 and 9 on the fore wing arise from a short stalk, which extends for less than half the distance between its base and the end of vein 7; vein 11 runs almost parallel with 12.

Candalides xanthospilos (Hübner)

(Text-figs. 3, 10, 43, 44 and 45)

Rusticus xanthospilos Hübner, 1817 : pl. 99.

Polyommatus hubnerii Godart, 1824 : 677, Timor ?

Erina pulchella Swainson, 1833 : 134.

Candalides xanthospilos (Hübner) ; Grünberg in Seitz, 1921 : 853, pl. 145f, Australia.

Distribution, AUSTRALIA : Queensland, New South Wales, and South Australia.

Candalides bysos (Boisduval)

Lycaena bysos Boisduval, 1832 : 81, Port Jackson.

This name was given by Waterhouse (1903 : 177) as a synonym of *xanthospilos*, but Boisduval's description mentions a yellow band on the hind wing, and his

FIGS. 36, 39, 46. ♂ genital armature : 36, *Holochila absimilis* ; 39, *H. grandissima* ; 46, *H. subrosea*.

FIGS. 37, 38, 42, 45, 47, 49. aedeagus : 37, *H. absimilis* ; 38, *H. grandissima* ; 42, *H. consimilis* ; 45, *Candalides xanthospilos* ; 47, *Holochila subrosea* ; 49, *Cyprotides cyprotus*.

FIGS. 41, 44, 50. ♂ clasper : 41, *Holochila consimilis* ; 44, *Candalides xanthospilos* ; 50, *Cyprotides cyprotus*.

FIGS. 40, 43, 48. uncus : 40, *Holochila consimilis* ; 43, *Candalides xanthospilos* ; 48, *Cyprotides cyprotus*.

description of the underside does not quite apply to that species. In view of this uncertainty, and as there are no specimens in the B.M. (N.H.) identifiable with *bysos*, the name is placed here tentatively.

ERINA Swainson

Erina Swainson, 1833 : 134.

Type : *Hesperia erinus* Fabricius.

The terminal segment of the labial palp is well over half the length of the penultimate segment, it is long and spike-like. Veins 7 and 9 arise from a stalk, which extends to half the distance from its point of origin and the end of vein 7. Vein 12 is not distinctly angled like that of *Holochila*, but it does diverge from vein 11 as it nears the costa.

Under the heading "*Erina pulchella*" Swainson designated *Erina* as a subgenus of *Polyommatus* as follows : "Wings obtuse, very entire : palpi covered only with compact scales, the last joint lengthened, slender, and very naked. Club of the antenna short, broad, and spatulate. Colour, dark blue, spotted beneath. Typical. *Hesp. erinus* Fab. Aberrant. *Lycaena ignita* Leach". He then went on to describe and figure *Erina pulchella* (= *Candalides xanthospilos*). To avoid confusion, and as no type has so far been selected, I hereby designate *Hesperia erinus* Fabricius as the type of the genus.

KEY TO THE SPECIES OF *ERINA*

- 1 Both sexes on the upper surface are blue ***hyacinthina simplex*** (p. 216)
- Both sexes on the upper surface are brown, with a purple reflection in the males ; this reflection is sometimes present in the females also 2
- 2 Large, the male fore wing measuring 14–17 mm.; the female 15–17 mm. ***hyacinthina hyacinthina*** (p. 217) and ***h. eugenia*** (p. 217)
- Small, the male fore wing measuring 10–13 mm.; the female 10–14 mm. 3
- 3 Underside, dull grey, the three lower submarginal spots on the fore wing are large, diffuse, and blackish brown in colour ***acasta*** (p. 217)
- Underside, whitish grey, the two lower submarginal spots on the fore wing are intense black and clearly defined ***erina*** (p. 217)

Erina hyacinthina (Semper) **comb. n.**

- (i) ***E. hyacinthina simplex*** (Tepper) **comb. n.**
(Text-fig. 52)

Cupido simplex Tepper, 1882 : 30, pl. 2, fig. 10, S. Australia.

Polyommatus cyanites Meyrick, 1888 : 823, W. Australia (Type !).

Waterhouse (1914 : 81) says : "This is the western race of *C. hyacinthina*. It occurs in the northwestern areas of Victoria, in South Australia, and in West Australia".

The male genitalia are indistinguishable from those of the nominate race, and notwithstanding the marked external difference mentioned in the key, it would seem that Waterhouse's statement is correct.

Distribution, AUSTRALIA : NW. Victoria ; South Australia ; West Australia.

(ii) *E. hyacinthina eugenia* (Waterhouse & Lyell) **comb. n.***Candalides hyacinthina eugenia* Waterhouse & Lyell, 1914 : 80, Kuranda.

Distribution, AUSTRALIA : Queensland.

(iii) *E. hyacinthina hyacinthina* (Semper) **comb. n.**
(Text-fig. 51)*Holochila hyacinthina* Semper, 1879 : 162, Sydney.

Distribution, AUSTRALIA : New South Wales and Victoria.

(iv) *E. hyacinthina josephina* (Harris)*Candalides hyacinthina josephina* Harris, 1952 : 33, Victoria (Stawell).Distribution, AUSTRALIA : Victoria : Fern Tree Gully, xii.1956 (*H. Borch*), 2 ♂ ; Tecoma, xii.1956 (*H. Borch*), 1 ♂, 1 ♀ ; Birchip, 1 ♀ ; Emerald (*Jarvis*), 1 ♂.*Erina acasta* (Cox) **comb. n.**
(Text-fig. 53)*Lycaena acasta* Cox, 1873 : 402, Bremer, R., S. Australia (Type !).*Holochila anita* Semper, 1879 : 163, Sydney and Cape York (Type !).*Lycaena moerens* Rosenstock, 1885 : 377, S. Australia (Type !).*Lycaena canescens* Miskin, 1890 : 35, Tasmania.*Candalides acasta* (Cox) Waterhouse, 1932 : 133, pl. 19, figs. 11-11A.

Distribution, AUSTRALIA: Brisbane southwards to New South Wales, Victoria, South Australia, and West Australia.

Erina erina (Fabricius)(i) *E. erina erina* Fabricius
(Text-fig. 4, 11 and 54)*Papilio erinus* Fabricius, 1775 : 525, Nova Hollandia.*Polyommatus subpallidus* Lucas, 1890 : 117, Queensland.*Candalides erinus* (Fabricius) Grünberg in Seitz, 1921 : 852, North and Northwest Australia.*Candalides erinus* (Fabricius) ; Waterhouse, 1932 : 133, pl. 19, figs. 10-10A.

In the male, the upperside is brown with a reddish violet reflection, and the fore wings are widely margined with a black band that increases in width towards the apex. A similar but much narrower band is present on the hind wing. Because of a slight sheen on the surface of the wings, these bands are indistinct in certain lights. The female is completely dull brown above, and the fringes in both sexes are whitish. The length of the fore wing in both sexes varies between 10 and 13 mm. The male armature is remarkable in having two lateral shield-like extensions of the vinculum, apparently protecting the lower part of the valves ; these extensions are densely covered with tiny points and nodules near and along their outer edges. The valves have a bulbous base, which is produced apically into a long pointed ribbon-like process, occupying quite four-fifths of the total length of the valve. No subspecific differences can be observed in the genitalia.

Distribution, AUSTRALIA : Queensland and Northwest Australia.

(ii) *E. erina sumbensis* ssp. n.

Slightly smaller than *E. erina*, the fore wing in both sexes measuring from 9 to 11 mm. On all wings in the male, the marginal bands are much wider, quite twice the width of those of the nominate subspecies. The dull brown female does not differ above from that race. On the underside in both sexes, the two lower submarginal spots on the fore wing are slightly smaller.

Holotype ♂, LESSER SUNDA ISLANDS : Sumba, ii.1896 (*W. Doherty*), B.M. Type No. Rh. 16809.

Allotype ♀, as holotype, B.M. Type No. Rh. 16810.

Other material, LESSER SUNDA ISLANDS : as holotype, 3 ♂, 2 ♀ ; Savu Island, viii.1896, (*Everett*), 1 ♀.

(iii) *E. erina timorensis* ssp. n.

Larger than the preceding, wing measurements varying from : males 10–12 mm.; females 12–14 mm. The black margins in the male are as wide as or wider than those of *sumbensis*. The female is like the preceding race on the upperside. Beneath, in both sexes, the two lower submarginal spots are decidedly larger than those of any other subspecies.

Holotype ♂, TIMOR : Oinainisa, xi–xii.1891 (*W. Doherty*), B.M. Type No. Rh. 16811.

Allotype ♀, as holotype, B.M. Type No. Rh. 16812.

Other material, TIMOR AND NEIGHBOURING ISLANDS : as holotype, 7 ♂, 3 ♀ ; Atapupu, viii.1897 (*Everett*), 1 ♂ ; Semaos Island (*J. J. Walker*), 1 ♂ ; Kisser Island, 5 ♂, 3 ♀ ; Letti Island, vii.1892 (*W. Doherty*), 1 ♂, 1 ♀ ; Wettar Island, v.1892 (*W. Doherty*), 2 ♀.

(iv) *E. erina tualensis* (Röber) comb. n.

Plebeius tualensis Röber, 1886 : 61, pl. 5, fig. 26, Key Islands.

Fore wing measurements : males 10.5–13 mm.; females 11–14 mm. The dark margins are not so wide as those of the two preceding subspecies ; that of the fore wing is of more even width throughout than is that of the nominate race. The female is not distinguishable above from that of the preceding race. The underside in both sexes is like that of *e. erina*.

Distribution, KEY ISLANDS.

(v) *E. erina taamensis* ssp. n.

Fore wing measurements : males 10–12 mm.; females 12–13 mm. The male above is light brown, with a faint golden tint in the red-violet gloss ; the dusky margins are much reduced. In the female the ground is pale reddish mauve, the veins on all wings are darkened with dusky scales, and there is a wide dusky margin on each wing. Beneath, both sexes are like the nominate race.

Holotype ♂, WESTERN KEY ISLANDS : Taam, vii.1898 (*H. Kuhn*), B.M. Type No. Rh. 16813.

Allotype ♀, as holotype, B.M. Type No. Rh. 16814.

Other material, WESTERN KEY ISLANDS : as holotype, 8 ♂, 1 ♀ ; Koer Islands, vi.1898 (*H. Kuhn*), 3 ♂.

(vi) *E. erina tenimberensis* ssp. n.

Fore wing measurements : males 11 mm.; females 12–13 mm. The male is above very like that of *taamensis*, but the dark margins though shadowy and obscure are usually wider. The female is pale earth-brown with on the hind wing a clouding of mauve tinted whitish grey between the veins. The under surface has a slightly more ochreous tint than in the preceding race.

Holotype ♂, TENIMBER : vi–vii.1892 (*W. Doherty*), B.M. Type No. Rh. 16815.

Allotype, ♀, as holotype, B.M. Type No. Rh. 16816.

Other material, TENIMBER : as holotype, 4 ♂, 8 ♀ ; South Yamdena, 20 miles S. of Saumlakki, vi–ix.1918 (*W. J. C. Frost*), 1 ♂ ; Larat Island, Ritabel, 1897 (*Doherty*), 1 ♂, 1 ♀ ; Selaru Island, 19.xii.1929 (*Miss Longfield*), 1 ♀.

(vii) *E. erina stevensi* (Wind & Clench) comb. n.

Candalides erinus stevensi Wind & Clench, 1947 : 1, Wau, Morobe District.

Fore wing measurements : males 10–10.5 mm.; females 11–13 mm. On the upperside, the male is very like *timorensis* ; it has the same wide dark margins, and lacks the pale golden tinge of the Key Island race. The female is completely dull brown above. Beneath the two lower submarginal spots are obsolete or tend to obsolescence ; they are never so large or clearly marked as those of the other subspecies.

Distribution, DUTCH NEW GUINEA : Humboldt Bay, ix–x.1892 (*W. Doherty*), 1 ♂, 2 ♀ ; Cyclops Mountains, Sabron Camp, iv–vii.1936 (*L. E. Cheesman*), 11 ♂, 1 ♀.

(viii) *E. erina sudesta* ssp. n.

Fore wing measurements : males 10–12 mm.; females 11–12 mm. The male is above not distinguishable from the preceding race, but close examination of the otherwise brown female reveals a thin scattering of blue scales on all wings ; to the naked eye, these scales are only observable as a faint bluish shade in the area below the cell of the fore wing ; under a microscope however, they can be seen to extend—sparsely scattered—over the greater part of the basal halves of the wings. The under surface in both sexes is ochreous grey, much darker than the whitish grey of other races ; all the markings are distinct, and with the exception of the two black submarginal spots, are ochreous brown in colour.

Holotype ♂, LOUISIADE ARCHIPELAGO : Sudest Island (*A. S. Meek*), B.M. Type No. Rh. 16817.

Allotype ♀, as holotype, B.M. Type No. Rh. 16818.

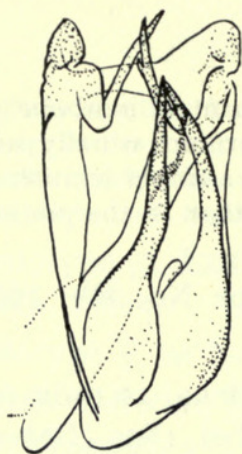
Other material, as holotype, 6 ♂, 6 ♀.

MICROSCENA gen. n.

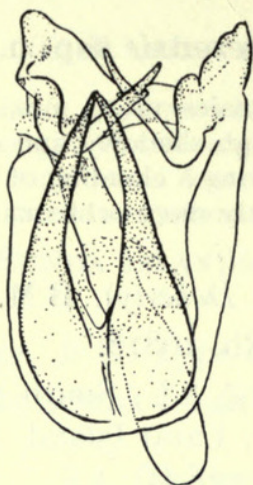
(Gr. μικρός, small, σκηνή, cell, fem.)

Type species : *Lycaena heathi* Cox.

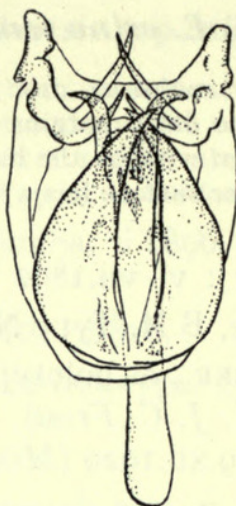
Differs from *Candalides* by the following characters : the terminal segment of the labial palp is only approximately half the length of the middle segment. The fore wing cell is short, being less in length than vein 6, and the stalk of veins 7 and 9 is less than half the distance from its base to the end of vein 7. Vein 12 turns in an even curve towards the costa, it does not run parallel to vein 11.



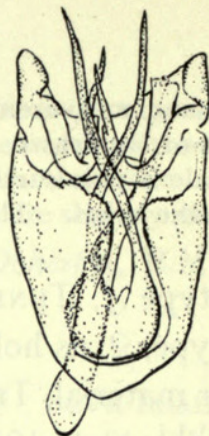
51



52



53



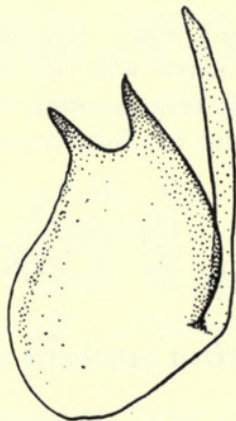
54



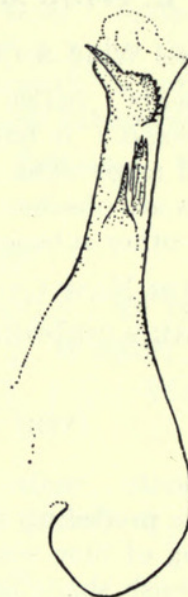
55



56



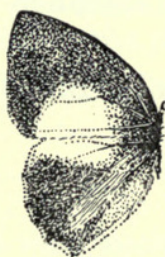
57



58



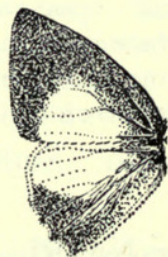
59



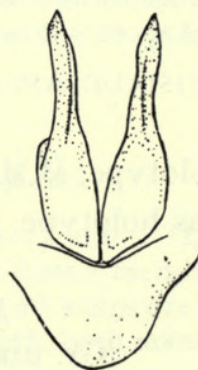
63



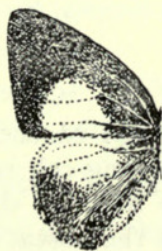
64



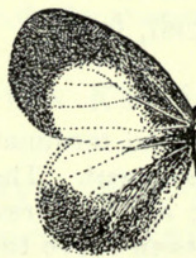
65



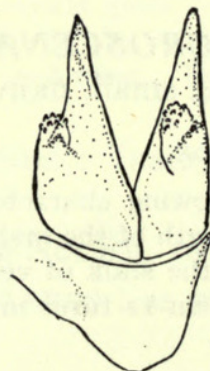
61



66



67



60



62

***Microscena heathi* (Cox) comb. n.**

(Text-figs. 5, 12, 55, 56 and 57)

(i) ***M. heathi heathi* (Cox) comb. n.***Lycaena heathi* Cox 1873 : 402, South Australia (Type !).*Lycaena paradoxa* Guest 1882 : 36, Balhannah Co., Adelaide.*Candalides heathi* (Cox) Waterhouse 1932 : 130, pl. 19, fig. 4.

The male is bronze-brown with a purple reflection and dusky margins ; in some examples, the veins have a tendency to form yellowish rays. The female is duller brown, with the basal portions of all wings dusky mauve. On the underside, both sexes are silky grey-white, with an interneural series of submarginal black dots.

Distribution, AUSTRALIA : Western Australia, South Australia, New South Wales and Queensland.

(ii) ***M. heathi alpina* (Waterhouse) comb. n.***Candalides heathi* ssp. *alpina* Waterhouse 1928 : 402, Mt. Kosciusko.

This is a high altitude race, with distinctly paler veins, and a bronze-grey underside.

Distribution, AUSTRALIA : Mt. Kosciusko.

(iii) ***M. heathi aerata* (Montague) comb. n.***Holochila heathi aerata* Montague 1914 : 645, Monte Bello Islands.(iv) ***M. heathi doddi* (Burns) comb. n.***Candalides heathi doddi* Burns, 1947 : 95, New South Wales (Barrington Tops).

Not represented in B.M. (N.H.).

ADALUMA Tindale*Adaluma* Tindale, 1922 : 537.

Type species : *Adaluma urumelia* Tindale.

Distinguished from *Candalides* and other allied genera by the extremely short antennae, which are well under half the length of the costa. The terminal segment of the labial palp is just over half the length of the middle segment. The wings are short, the fore wing costa and distal margin rounded, and the apex obtuse. Veins 7 and 9 of the fore wing arise from a short

FIGS. 51–54. ♂ genital armature : 51, *Erina hyacinthina hyacinthina* ; 52, *E. hyacinthina simplex* ; 53, *E. acasta* ; 54, *E. erina*.

FIG. 55. uncus : *Microscena heathi*.

FIGS. 56, 58, 62. aedeagus : 56, *Microscena heathi* ; 58, *Adaluma urumelia* ; 62, *Philiris harterti*.

FIGS. 57, 59, 60, 61. claspers : 57, *Microscena heathi* ; 59, *Adaluma urumelia* ; 60, *Philiris albiplaga* ; 61, *P. harterti*.

FIGS. 63–67. wings : 63, *Philiris albiplaga* ♂ ; 64, *P. harterti melanoma* ♂ ; 65, *P. harterti leucoma* ♂ ; 66, *P. harterti harterti* ♂ ; 67, *P. harterti harterti* ♀.

stalk, which only extends to one-third of the distance from its point of origin and the end of vein 7. Vein 12 is strongly turned towards the costa, where it nears the origin of vein 11. This last named character obtains throughout the series in the B.M. (N.H.), although Tindale states that these veins run parallel.

***Adaluma urumelia* Tindale**
(Text-figs. 6, 13, 58 and 59)

Adaluma urumelia Tindale, 1922 : 537, pl. 31, Northern Territory.

Candalides wilkinsi Riley, 1928 : 187, Groote Eylandt (Type !).

Candalides wilkinsi Riley ; Riley, 1930 : 211.

The male is silky white with a blue tinge, the centre of the fore wing is rayed with specialized dark scales along the veins ; the margins are grey-black. Beneath, both sexes are whitish with 6 interneural submarginal black spots on the hind wing, and similar spots in areas 2 and 3 of the fore wing.

Distribution, AUSTRALIA : Northern Territory : Groote Eylandt, iii.1925 (G. H. Wilkins), 7 ♂, 2 ♀ (including holotype and allotype of *wilkinsi*).

PHILIRIS Röber

Philiris Röber, 1891 : 317.

Type species : *Thecla ilias* Felder.

The distal margin of the hind wing is emarginate. The terminal segment of the labial palp is slightly less than half the length of the central segment. On the fore wing, the stalk of veins 7 and 9 is very long, extending well over half the distance between its point of origin and the end of vein 7 ; vein 12 approaches vein 11 more closely than is the case in *Candalides* or *Holochila*.

KEY TO THE SPECIES OF *PHILIRIS*

MALES ONLY

- | | | |
|---|--|----------------------------|
| 1 | Underside, yellow or orange-red | 2 |
| – | Underside, some shade of buff, grey, or white | 5 |
| 2 | Underside, with metallic submarginal spots | 3 |
| – | Underside, without metallic submarginal spots | 4 |
| 3 | Upperside, basal two-thirds of fore wing brilliant green-blue. Underside, yellow ; series of metallic spots complete | <i>sublutea</i> (p. 225) |
| – | Upperside, shining blue. Underside, orange-red ; series of metallic spots incomplete | <i>caerulea</i> (p. 226) |
| 4 | Upperside, fore wing dark brown, hind wing cream with a dusky basal area. Underside, creamy yellow | <i>hemileuca</i> (p. 226) |
| – | Upperside, all wings brown. Underside, clear yellow | <i>hypoxantha</i> (p. 226) |
| 5 | Underside, some shade of buff or grey | 6 |
| – | Underside, white or near-white | 12 |
| 6 | Upperside, purple or violet | 7 |
| – | Upperside, bright shining blue | 11 |
| 7 | Antennae, clubs tipped with yellow-brown | 8 |
| – | Antennae, clubs entirely black | 10 |
| 8 | Fore wing, apex acute | <i>apicalis</i> (p. 227) |
| – | Fore wing, apex obtuse | 9 |
| 9 | Upperside, dark margins wide or very wide | <i>griseldis</i> (p. 227) |
| – | Upperside, dark margins narrow | <i>philotas</i> (p. 229) |

- 10 Upperside, dusky brown-purple, margins narrow *philotoides* (p. 229)
 - Upperside, violet, margins wide *ianthina* (p. 229)
- 11 Upperside, light shining blue. Underside, cream-buff *agatha* (p. 230)
 - Upperside, intense lustrous blue. Underside, brown-buff *montigena* (p. 230)
- 12 Underside, never with a small black dot near the hind margin of the hind wing 13
 - Underside, always with a small black dot near the hind margin of the hind wing 21
- 13 Upperside, black and white 14
 - Upperside, blue or purple 15
- 14 Frons, tufted with rust-red hair. Upperside, white areas extensive . . . *harterti* (p. 230)
 - Frons, tufted with dusky brown hair. Upperside, white areas restricted *albiplaga* (p. 231)
- 15 Upperside, blue 16
 - Upperside, purple 18
- 16 Upperside fore wing, dark margin at apex is twice its width at tornus *praeclara* (p. 232)
 - Upperside fore wing, dark margin at apex is three times its width at tornus 17
- 17 Upperside, shining blue with a refractive red-purple lustre *gloriosa* (p. 232)
 - Upperside, glittering blue without noticeable refractive qualities *elegans* (p. 234)
- 18 Upperside fore wing, apex black to a depth of 5 mm. *lavendula* (p. 234)
 - Upperside fore wing, apex not widely black 19
- 19 Upperside fore wing, white cloud in disc *diana diana* (p. 235)
 - Upperside fore wing, no white cloud in disc 20
- 20 Fore wing, apex acute *diana papuanus* (p. 235)
 - Fore wing, apex obtuse *ariadne* (p. 235)
- 21 Upperside, predominantly black and white 22
 - Upperside, blue or purple, if white is present it never predominates 23
- 22 Underside all wings, with large quadrate discoidal spots *unipunctata* (p. 235)
 - Underside all wings, without discoidal spots *refusa* (p. 236)
- 23 Upperside, all wings blue or blue with whitish disc on fore wing 24
 - Upperside, all wings or at least fore wings purple 31
- 24 Upperside, shining metallic blue 25
 - Upperside, blue, but never metallic blue 26
- 25 Upperside hind wing, inner edge of junction of marginal and costal black bands forms
 an even arc *intensa* (p. 237)
 - Underside hind wing, inner edge of junction of marginal and costal black bands
 shows an irregularity *regina* (p. 237)
- 26 Antennae, clubs black 27
 - Antennae, clubs tipped with yellow 29
- 27 Fore wings, long and pointed. Upperside, feebly shining light blue, margins of
 hind wings narrow *zadne* (p. 239)
 - Fore wings short and broad. Upperside, dark margins very wide, restricted blue
 areas slightly tinged with green 28
- 28 Upperside fore wing, blue area extends into the lower half of the cell
 *kumusiensis* (p. 239)
 - Upperside fore wing, blue area extends into almost all of the cell
 *argenteus* (p. 239)
- 29 Upperside, light blue with a white discal patch on the fore wing *kamerungae* (p. 240)
 - Upperside, light blue without a white discal patch on the fore wing 30
- 30 Upperside, light blue *nitens* (p. 240)
 - Upperside, blue with a refractive purple lustre *azula* (p. 241)
- 31 Underside, a clearly defined black discoidal spot on each wing *angabunga* (p. 241)
 - Underside, without a black discoidal spot on each wing 32
- 32 Upperside, fore wing purple, hind wing blue *fulgens* (p. 242)
 - Upperside, fore and hind wings purple 33

- 33 Genitalia, lobes of uncus have a narrow cleft in them, in some cases the lobes are produced 34
 - Genitalia, uncus between the lobes is straight or widely concave, lobes not produced 47
- 34 Upperside hind wings, margins wide, at least 2 mm. in width 35
 - Upperside hind wings, margins narrow, less than 2 mm. in width 36
- 35 Fore wings, acute, dark margins clearly defined *remissa* (p. 242)
 - Fore wings, obtuse, dark margins ill defined inwardly *moluccana* (p. 242)
- 36 Upperside hind wing, costa broadly white 37
 - Upperside hind wing, costa fuscous 38
- 37 Upperside fore wing, veins in disc of wing bearing scattered white scales *mayri* (p. 243)
 - Upperside fore wing, veins in disc of wing not bearing scattered white scales *ziska* (p. 243)
- 38 Underside, pearly grey-white with a white discocellular streak on each wing *misimensis* (p. 244)
 - Underside, white or near white without a discocellular streak on each wing 39
- 39 Antennae, clubs completely black *tombara* (p. 244)
 - Antennae, clubs tipped with fulvous 40
- 40 Upperside hind wing, black margin not noticeably widened in cellule 6 41
 - Upperside hind wing, black margin noticeably widened in cellule 6 44
- 41 Fore wing, apex rounded, only narrowly black on upperside *phengotes* (p. 244)
 - Fore wing, apex not rounded, widely black on upperside 42
- 42 Fore wing, length 13 mm. *dinawa* (p. 245)
 - Fore wing, length 15-16 mm. 43
- 43 Upperside, dull purple *melanacra* (p. 245)
 - Upperside, purple with strong blue refraction *lucescens* (p. 247)
- 44 Fore wings, acuminate Upperside, pale mauve-purple *innotatus* (p. 247)
 - Fore wings, not acuminate. Upperside, blue-purple 45
- 45 Upperside, blue-purple with strong reddish refraction *riuensis* (p. 248)
 - Upperside, purple without reddish refraction 46
- 46 Upperside hind wing, distal margin less than 1 mm. in width *moira* (p. 248)
 - Upperside hind wing, distal margin 1-2 mm. in width *ignobilis* (p. 249)
- 47 Upperside hind wing, costa broadly white 48
 - Upperside hind wing, costa not white 50
- 48 Upperside hind wing, costal white extends to vein 6 *albicostalis* (p. 249)
 - Upperside hind wing, costal white does not extend beyond vein 7 49
- 49 Upperside, reddish purple, fore wing costa and apex broadly black *marginata* (p. 249)
 - Upperside, bluish purple, fore wing costa and apex narrowly black *doreia* (p. 249)
- 50 Thorax, stout (3-4 mm.). Fore wing, strong, its apex subacuminate 51
 - Thorax, slender (less than 3 mm.). Fore wing weak, its apex obtuse 52
- 51 Upperside fore wing, apical black extensive, reaching discocellular in area 5 *goliathensis* (p. 250)
 - Upperside fore wing, apical black narrow, not approaching discocellular *vicina* (p. 250)
- 52 Cilia hind wings, not spotted at the ends of veins 5, 6 and 7 *albi humerata* (p. 252)
 - Cilia hind wing, spotted at the ends of all veins 53
- 53 Upperside, black margins wide, and of approximately even width throughout *satis* (p. 252)
 - Upperside, black margins not so wide, and not of even width, being always broadened at the apex of the fore wing 54
- 54 Upperside, black margins less than 1 mm. in width 55
 - Upperside, black margins are more than 1 mm. in width 56
- 55 From the Moluccas *ilias* (p. 252)
 - From New Guinea *subovata* (p. 253)

- 56 Upperside, black margins on hind wing are over 2 mm. in width . . . *oreas* (p. 253)
 – Upperside, black margins on hind wing are less than 2 mm. in width *kapaura* (p. 253)

The two following names are not included in the above key, or in the pages that follow ; both were described from females, and no males have so far been identified. Therefore it has not been possible to assign them to a definite position in the genus.

***Philiris cyana* (Bethune-Baker) comb. n.**

Candalides cyana Bethune-Baker, 1908 : 122, pl. 8, Owgarra (Type !).

Only represented by the holotype in the B.M. (N.H.).

***Philiris? violetta* (Röber)**

Candalides violetta Röber, 1926 : 376, S.W. New Guinea.

Not identified, the description makes the inclusion of the species in *Philiris* appear probable.

***Philiris sublutea* (Bethune-Baker)**

(i) ***P. sublutea sublutea* (Bethune-Baker) comb. n.**

(Pl. 3, fig. 143. Text-fig. 68)

Candalides sublutea Bethune-Baker, 1906 : 101, Owgarra (Type !).

Candalides sublutea Bethune-Baker ; Bethune-Baker, 1908 : pl. 8, fig. 9.

In the male, the brilliant refractive blue-green colour in the basal portions of the fore wing extends subcostally to two-thirds the length of the costa ; from the cell it does not proceed beyond the discocellulars ; below this, it just enters the bases of cellules 2 and 3, and then extends distally to include the basal two-thirds of cellule 1, receding from there to a point at less than half the length of the hind margin. The costa and the remaining distal part of the wing are black. The brown-black hind wings bear a scattering of blue-green scales below the cell, and in most examples, a submarginal series of spots of the same colour. On the underside, the uniform chrome-yellow colour, and the series of metallic submarginal spots on all wings, make this a readily identifiable species.

The hitherto undescribed female differs from the male as follows : the paler blue-green colour extends beyond the discocellulars of the fore wing, its boundary forming an even curve from above the cell to its distal limit in cellule 1 ; the costa is more widely black, and bears a scattering of blue-green scales in the subcostal region, just above the end of the cell ; on the hind wing, blue-green scales cover the area between vein 1 to beyond vein 3, and extend into the lower part of the cell ; the submarginal parts of this area are somewhat clouded by a dusting of blackish scales, and enlivened in most individuals by clear blue-green submarginal spots. The underside is paler yellow, but is otherwise similar to that of the male.

Neallotype ♀, BRITISH NEW GUINEA : Angabunga River, 6000', xi-ii.1904-5 (A. S. Meek), B.M. Type No. Rh. 16871.

Other material, BRITISH NEW GUINEA : as neallotype, 5♂, 3♀ ; Owgarra (A. S. Meek), 5 ♂ (including holotype), 1 ♀. MANDATED NEW GUINEA : West side of Herzog Mountains, Eidie Creek, 6100', 1928 (A. F. Eichhorn), 1 ♂. DUTCH NEW GUINEA : Weyland Mountains, Menoo Valley, Mount Kunupi, 6000', xi-xii.1920 (Pratt Bros.), 1 ♀.

(ii) *P. sublutea extensa* ssp. n.

(Pl. 3, fig. 142. Text-fig. 69)

The blue-green colour on the fore wing in the male extends farther subcostally than in the nominate subspecies, extending to within only two millimetres of the apex ; in some individuals, this colour also extends beyond the discocellulars. On the hind wing, the blue-green colour is more extensive, covering the lower half of the cell, and the area from vein 1 to vein 4 or beyond ; the blue-green submarginal series of spots is absent. The under surface is exactly as in *sublutea*. In the female, the blue-green areas are more extensive, especially those of the hind wing.

Holotype ♂, DUTCH NEW GUINEA : Arfak Mountains, Angi Lakes, 6000', ii.1914 (*Pratt Bros.*), B.M. Type No. Rh. 16819.

Allotype ♀, as holotype, i-ii.1914, B.M. Type No. Rh. 16820.

Other material, DUTCH NEW GUINEA : as holotype, 4 ♂, 1 ♀ ; Arfak, Dohunsehik, 1400 m., vi.1928 (*E. Mayr*), 1 ♂.

Philiris caerulea sp. n.

(Text-fig. 70)

Larger than the preceding species, the male fore wing measures 14 mm. The wings are shining blue above, with wide black distal and costal margins, which encroach narrowly along the veins well into the blue area. In areas 4 and 5 of the fore wing, the distal marginal band projects inwards towards the discocellulars. The anal fold of the hind wing is dusky brown. On the underside, the colour is fiery orange-red, with a drab patch below vein 1 of the fore wing ; the metallic submarginal spots are represented on that wing by a rounded spot in the apex, and a tiny point below it in cellule 5 ; the hind wings of the only specimen have suffered considerable damage, and the left-hand wing is partly crippled ; two metallic spots are however observable on the right hind wing—one each in areas 1 and 2.

Holotype ♂, MANDATED NEW GUINEA : Rawlinson Mountains (*Keysser*), B.M. Type No. Rh. 16821.

Philiris hemileuca (Jordan) comb. n.

Candalides hemileuca Jordan, 1930 : 282, Herzog Mountains (Type !).

Candalides hemileuca Jordan ; Jordan, 1930a : 60, pl. 3, fig. 13.

Distribution, MANDATED NEW GUINEA : Herzog Mountains, 6100', 1928 (*A. F. Eichhorn*), 2 ♂, (including holotype).

Philiris hypoxantha (Röber) comb. n.

(Text-fig. 72)

Candalides hypoxantha Röber, 1926 : 375, S.W. New Guinea.

The female is rather lighter brown than the male ; its fore wing distal margin is more convex, and the costal region of the hind wing in the example from Mount Goliath is pale ochreous brown. The Oetakwa River female exhibits an obscure whitish smear in the centre of the fore wing, and a dull cream-white area on the hind wing, covering the costa, the apex, and extending downwards as far as vein 5 in the outer two-thirds of the wing ; this cream-white area is sullied submarginally by a scattering of brown scales. On the underside, both females are identical with the

male. The significance of these two female forms cannot be assessed until more material is available.

Distribution, DUTCH NEW GUINEA : Snow Mountains, near Oetakwa River, up to 3500', 1910 (*A. S. Meek*), 1 ♂, 1 ♀ ; Mount Goliath, 5000', iii.1911 (*A. S. Meek*), 1 ♂, 1 ♀ ; Sabang, 14.vii.1907, 1 ♂.

***Philiris apicalis* sp. n.**

(Pl. 3, fig. 144. Text-fig. 71)

Fore wing length 17 mm., the apex is acute, and the distal margin almost straight ; the anal angle of the hind wing is somewhat produced. All wings are deep purple-blue ; the fore wing with the costal, apical and distal regions widely black. On the hind wing, the costa is pale earth-brown, the wide distal margin is black, and the anal fold fuscous, being further obscured by the presence of long red-brown hairs. The underside is satiny brown-grey, and entirely without markings. The fringes in the only example are missing.

Holotype ♂, NEW BRITAIN : Talesea, iii-iv.1925 (*A. F. Eichhorn*), B.M. Type No. Rh. 16822.

***Philiris griseldis* (Staudinger) comb. n.**

(i) ***P. griseldis gisella* (Staudinger) comb. n.**

(Text-fig. 73)

Lycaena griseldis gisella Staudinger, 1888 : 272, Northern Moluccas.

Philiris mneia Druce, 1897 : 15, Batchian (Type !).

Holochila grandis Grose-Smith, 1899 : 14, pl. 7, figs. 12-14, Batchian.

Candalides grandissima Bethune-Baker ; Grünberg (in Seitz), 1921 : fig. 145g.

The heavily black checkered fringes of the hind wing beneath, together with the characters mentioned in the key, ensure ready identification of this insect. Its relationship with *griseldis* is not at first sight obvious ; however, the fact that the two forms are geographically isolated, the identical male genitalia, and the apparently parallel relationship existing between *P. butleri* and *P. intensa*, all point to a sub-specific alliance. The female is deep brown-black above, some examples exhibiting a scattering of blue scales in the disc of the fore wing ; two females in the B.M. have a large and definite blue patch in this area.

Distribution, MOLUCCAS : Batchian ; Halmaheira ; Ternate ; Bouru ; Amboina.

(ii) ***P. griseldis aurelia* (Grose-Smith) stat. n.**

Holochila aurelia Grose-Smith, 1899 : 13, pl. 18, figs. 1-3, Aru (Type !).

Very similar in both sexes to the nominate race. The dark marginal band on all wings in the male is always wider ; it attains a width of approximately 2 mm. on the distal margin, and widens still more as it approaches the apex of the fore wing. The female is dull brown, with the central and basal portions of the fore wing, and the base of the hind wing, shining blue.

Distribution, ARU.

(iii) *P. griseldis griseldis* (Staudinger) **comb. n.**

Lycaena griseldis Staudinger, 1888 : 272, T. 94, Waigeu.

Candalides parvifascia Rothschild, 1915a : 393, Vulcan Island, (Type !), **syn. n.**

Candalides philotas cineraceus Joicey & Talbot, 1917 : 220, Waigeu (Type !), **syn. n.**

Candalides amblypodina Röber, 1926 : 375, S.E. and S.W. New Guinea, **syn. n.**

The distal margins of the male upperside vary in width, but are never so wide as those of the preceding. In the female the blue area of the fore wing is individually variable in extent, and in some cases exceeds that of any specimen of *aurelia* examined.

Male Genitalia : the uncus is only slightly concave between the lobes, the clasps are roughly triangular, broad at the base, and rounded at the apex.

Distribution, NEW GUINEA : Northern Dutch New Guinea ; the islands in Geelvink Bay ; Mandated New Guinea to British New Guinea north of the Owen Stanley Range ; Rook I. ; Dampier I. ; Vulcan I. BISMARCKS : Specimens from New Britain, New Hanover, and New Ireland, are doubtfully placed here until more material for study is available.

(iv) *P. griseldis dubitata* (Grose-Smith) **comb. n.**

Holochila dubitata Grose-Smith, 1899 : 13, pl. 18, figs. 4-6, Milne Bay (Type !).

The male upperside is of a lighter and brighter shade of purple than any of the preceding races ; the clear-cut dark margins are conspicuously widened in the apical areas of all wings. In the female, the blue area of the fore wing is paler and more extensive.

Distribution, BRITISH NEW GUINEA : South of Owen Stanley Range eastwards to Milne Bay.

(v) *P. griseldis aurelioides* (Rothschild) **stat. n.**

Philiris aurelioides Rothschild, 1915 : 30, Snow Mountains (Type !).

On the average slightly larger than the nominate race ; the male with wider dark margins above (still not so wide as in *aurelia*), and beneath in both sexes the colour is distinctly darker. The differences in wing shape and male colour mentioned by Rothschild are not obvious. The specimens listed by that author as *P. aurelia* and *P. dubitata* are also referable to this race.

Distribution, DUTCH NEW GUINEA : Snow Mountains.

(vi) *P. griseldis speirion* Druce **stat. n.**

Philiris speirion Druce, 1897 : 15, Fergusson Island (Type !).

On the upperside, the male is brighter and lighter blue than that of *dubitata* ; in certain lights it has a frosted appearance. All the dark margins are very wide. The blue colour in the female is widely spread over the fore wing, and covers at least the cell and basal half of the hind wing.

Distribution, BRITISH NEW GUINEA and LOUISIADES : Sariba Island ; Goodenough Island ; Fergusson Island.

Philiris philotas* (Felder)*(i) *P. philotas obiana* ssp. n.**

Male. Rather brighter purple than in the nominate race, the dusky margins always wider, and though not so wide as those of *griseldis gisella*, they do suggest a relationship with *p. philotas* similar to that between *gisella* and *griseldis*. The fore wing fringes are dingy brown, those of the hind wings white with black checkers at the vein-ends.

Female. Dingy brown-black, with a shining light blue area on the fore wing covering the lower part of the cell, and the basal portions of areas 1, 2, and 3; there is a scattering of blue scales in the basal parts of the hind wing. The fringes are similar to those of the male.

Holotype ♂, MOLUCCAS : Obi, Laiwui, ix.1897 (*W. Doherty*), B.M. Type No. Rh. 16823.

Allotype ♀, as holotype B.M. Type No. Rh. 16824.

Other Material, MOLUCCAS : Obi, vii-ix (*W. J. C. Frost*), 4 ♂, 3 ♀; Obi, (*Fruhstorfer*), 1 ♂.

(ii) *P. philotas philotas* (Felder)

(Pl. 4, fig. 164. Text-fig. 74)

Thecla philotas Felder, 1860 : 454, Amboina (Type !).

Philiris theleos Druce, 1897 : 15, Amboina (Type !), **syn. n.**

Shining brown-purple in the male, margined with a brown-black border of over 1 mm. in width on the hind wing, and widening on the fore wing to approximately 3 mm. at the apex. The fringes are fuscous on the fore wing with some lightening in colour outwardly; on the hind wing they are whitish, with a marked dusky checkering at the vein-ends. The female is like that of the preceding race. The male genitalia differ from those of *griseldis* by the shorter and more rounded clasp.

Distribution, MOLUCCAS : Amboina ; Ceram ; Goram Laut ; Watubela ; Buru.

***Philiris philotoides* sp. n.**

(Pl. 3, fig. 146. Text-fig. 75)

The male is very similar in appearance to *philotas*, but the distal margin of the fore wing is more convex and has a slight angle at the end of vein 3. The ground colour is of a duller purple, somewhat smoky in appearance and the veins are slightly darkened. The dusky margins and fringes are as in *philotas*. Beneath the colour is deep buff with a dull sheen, and the fore wing bears a triangular patch of darker scales below the median vein near the base. The male genitalia show no marked differences from the preceding species.

Holotype ♂, BRITISH NEW GUINEA : Aroa River, 4-5600', v.1905 (*A. S. Meek*), B.M. Type No. Rh. 16825.

Other Material, NEW GUINEA : Aroa River (*Meek*), 3 ♂; Angabunga River, xi-ii.1904-5 (*Meek*), 1 ♂; Mambare River, Biagi, 5000', ii.1906 (*A. S. Meek*), 1 ♂; Kratke Mountains, Buntibasa District, 4-5000', vii.1932 (*F. Shaw Mayer*), 1 ♂.

***Philiris ianthina* sp. n.**

(Pl. 3, fig. 145. Text-fig. 76)

Closely allied to *agatha*, but differs as follows : the colour above is bright mauve-violet, enlivened on the hind wing by a broad indeterminate streak of shining blue running from the

base, above the cell, and attaining the submarginal area between veins 6 and 7 ; isolated blue scales are present on the discal portions of the veins on all wings ; the dark margins on the fore wings are narrower ; those of the hind wings are only half as wide.

The cilia of all wings, the colour of the underside, and the structure of the male genitalia, are all the same as in *agatha*.

Holotype ♂, DUTCH NEW GUINEA : Arfak Mountains, Mt. Siwi, 800 m., 13.v.1928 (*E. Mayr*), B.M. Type No. Rh. 16826.

***Philiris agatha* (Grose-Smith) comb. n.**

(Text-fig. 77)

Holochila agatha Grose-Smith, 1899 : 14, pl. 18, figs. 7-8, Milne Bay.

Candalides aroa Bethune-Baker, 1908 : 122, pl. 8, fig. 7, Aroa River (Type !), **syn. n.**

Candalides gloriosa Bethune-Baker (♀ allotype ! nec. ♂ holotype !), 1908 : 121, Angabunga River.

Candalides agatha (Grose-Smith) Grünberg (in Seitz), 1921, pl. 145h.

Bethune-Baker mistakenly described male *aroa* as a female, and the true *agatha* female as the female of his *Candalides gloriosa*. Examination of the types leaves no doubt that the above synonymy is correct.

Distribution, BRITISH NEW GUINEA : Aroa River (*Meek*), 4 ♂ (including type of *aroa*) ; Hydrographer Mountains, 1918 (*Eichhorn Bros.*), 3 ♀ ; Angabunga River, 6000', 1904-5 (*A. S. Meek*), 1 ♀.

***Philiris montigena* sp. n.**

(Pl. 3, fig. 151. Text-fig. 78)

The male has a marked superficial resemblance to that sex of *P. agatha* ; the blue colour above is slightly more intense, and definitely more lustrous than in that species. All the margins are deeper black-brown, and whereas the distal margin of the fore wing in *agatha* is of equal width, that of *montigena* widens from 2 mm. at the tornus to 6 mm. at its junction with the costal band at the apex. On the hind wing, the costal region above vein 6 is broadly black-brown, and the distal margin measures at least 2 mm. The cilia of all wings are brown basally, but outwardly lightened interneurally with fulvous white. On the underside, the colour is buff with a nacreous lustre, with at the base of area 1 on the fore wing a nebulous brownish patch. The fore wing measures 15 mm.

Holotype ♂, NEW GUINEA : Mt. Goliath, 5-7000', ii.1911 (*A. S. Meek*), B.M. Type No. Rh. 16827.

Other Material, NEW GUINEA : as holotype, 3 ♂ ; Mambare River, Biagi, 5000', ii.1906 (*A. S. Meek*), 1 ♂.

***Philiris harterti* (Grose-Smith) comb. n.**

(i) ***P. harterti harterti* (Grose-Smith) comb. n.**

(Text-fig. 61, 66 and 67)

Holochila harterti Grose-Smith, 1894 : 579, Humboldt Bay (Type !).

Holochila harterti Grose-Smith ; Grose-Smith & Kirby, 1897, pl. 10 (Or. Lyc.) figs. 4 and 5.

Candalides harterti (Grose-Smith) Grünberg (in Seitz), 1921 : 856, pl. 145h.

In the hitherto undescribed female, the apex of the fore wing is blunt, the costa and distal margins of all wings are strongly convex, and the tornus of the hind wing is rounded. The coloration and pattern are like those of the male, but the white patch on each wing is larger and rounder. In the distal area of the hind wing, the dusky portion extends towards the apex, terminating just beyond vein 6.

Neallotype ♀, DUTCH NEW GUINEA : Mt. Goliath, 4°.40" S., 139°.50" E., 5000', iii.1911 (*A. S. Meek*), B.M. Type No. Rh. 16828.

Other material, DUTCH NEW GUINEA : Humboldt Bay, 1892 (*W. Doherty*), 1 ♂ ; (holotype) ; Coast between Geelvink Bay and Humboldt Bay, 1896 (*W. Doherty*), 1 ♂ ; Cyclops Mountains, Sabron, Camp 2, 2000', v.1936 (*L. E. Cheesman*), 1 ♂ ; Snow Mountains, Near Utkwa River, up to 3500', x-xii.1910 (*A. S. Meek*), 2 ♂.

(ii) *P. harterti leucoma* ssp. n.

(Text-fig. 65)

Male. As in the nominate subspecies, but the white portion of the hind wing is more extensive, covering the greater part of the cell, the central part of the wing above vein 3, reaching the distal margin at vein 5, and embracing the whole of the apical and costal areas. The female also exhibits an extension of the white areas, but in that sex, the dusky portion of the hind wing reaches almost to vein 6.

Holotype ♂, BRITISH NEW GUINEA : Upper Aroa River, iii.1903 (*A. S. Meek*), B.M. Type No. Rh. 16829.

Allotype ♀, as holotype, B.M. Type No. Rh. 16830.

Other material, BRITISH NEW GUINEA : Aroa River (*A. S. Meek*), 13 ♂ ; Milne Bay (*A. S. Meek*), 2 ♂, 1 ♀ ; Hydrographer Mountains, 2500', 1918 (*Eichhorn Bros.*), 7 ♂, 2 ♀ ; Kumusi River, viii.1907 (*A. S. Meek*), 1 ♂, 1 ♀.

(iii) *P. harterti melanoma* ssp. n.

(Text-fig. 64)

In contrast to the preceding, this shows a reduction of the white areas on the hind wings ; in both sexes, the dusky area extends over the inner half of the cell, along the basal third of vein 4, bending upward and reaching the distal margin at vein 7. In all other characters the race conforms with the nominate subspecies.

Holotype ♂, DUTCH NEW GUINEA : Island of Jobi, 1892 (*W. Doherty*), B.M. Type No. Rh. 16831.

Allotype ♀, DUTCH NEW GUINEA : Island of Jobi, 1897 (*W. Doherty*), B.M. Type No. Rh. 16832.

Other material, DUTCH NEW GUINEA : Jobi (*W. Doherty*), 2 ♂, 6 ♀ ; Wandesi, (*W. Doherty*), 2 ♂.

Philiris albiplaga (Joicey & Talbot) comb. n.

(Text-figs. 60 and 63)

Candalides albiplaga Joicey & Talbot, 1916 : 75, pl. 3, fig. 6, Schouten Islands (Type !).

This species has close affinities with *P. harterti*, but in view of the distinctive characters—both superficial and genitalic—indicated below, it is deemed advisable

to treat the insect as a separate species. The frons in both sexes is coated with dusky brown hair, in distinct contrast with the rust-red pubescence to be found in *harterti*.

In the hitherto undescribed male, the fore wing is more square, and has a blunt apex ; the hind wing distal margin is well rounded. The white areas on all wings are even more restricted than in *P. harterti melanoma* ; that on the hind wing scarcely penetrating the cell, or anywhere below vein 5, or reaching basewards beyond the juncture of veins 6 and 7. The female has a less convex distal margin and a less rounded apex than does that sex of *harterti* ; in other respects it is very similar to the male.

The male genitalia are similar to those of *harterti*, but differ in the shape of the claspers ; which are very broad at the base, decreasing progressively and evenly in width to their pointed apices ; on their inner surface, each has a bulbous lobe bearing a large number of obtusely pointed protuberances. No such lobe is present on the clasper of *harterti*.

Neallotype ♂, DUTCH NEW GUINEA : Mefor Island, viii.1920 (C., F. & J. Pratt), B.M. Type No. Rh. 16833.

Other material, DUTCH NEW GUINEA : Schouten Islands, Biak, vi.1914 (A., C. & F. Pratt), 1 ♀ (holotype) ; as neallotype, 1 ♂, 2 ♀ ; Mefor, Suer, v-vi. 1897 (W. Doherty), 1 ♀.

***Philiris praeclara* sp. n.**

(Pl. 3, fig. 150. Text-fig. 79)

The fore wing measures : in the male 17 mm.; in the female 18 mm. The upperside is above smalt blue with, in certain lights, an underlying hint of purple ; it is not however a strongly opalescent colour. A black margin 1.5 mm. wide runs from the base along the costa to join the wider distal band in the apex of the wing. The latter increases in width progressively from 1 mm. at the tornus to 3 mm. at the apex. On the hind wing the costal area above vein 7, and the anal fold, are both dingy fuscous, the distal marginal band is 1 mm. in width from the tornus to vein 6, where it joins the blackish smear which occupies the upper two-thirds of area 6, and merges with the fuscous costal area. The above details refer to the holotype only ; in the male from Mambare River, all the dark marginal bands are distinctly wider. All the nervures, especially those of the hind wing are darkened with blackish scales.

The female is similar to the male, but the blue colour is distinctly paler, the fore wing distal margin is of even width throughout, and the costal margin is doubled in width from the base to just beyond the cell-end. The cilia in both sexes are white, darkened with fuscous at the vein-ends and at the base. The underside is creamy white, and is without a hind marginal black spot on the hind wing. In general appearance both sexes are similar to the female of *P. fulgens*.

Holotype ♂, BRITISH NEW GUINEA : Hydrographer Mountains, 2500', iv.1918 (*Eichhorn Bros.*), B.M. Type No. Rh. 16834.

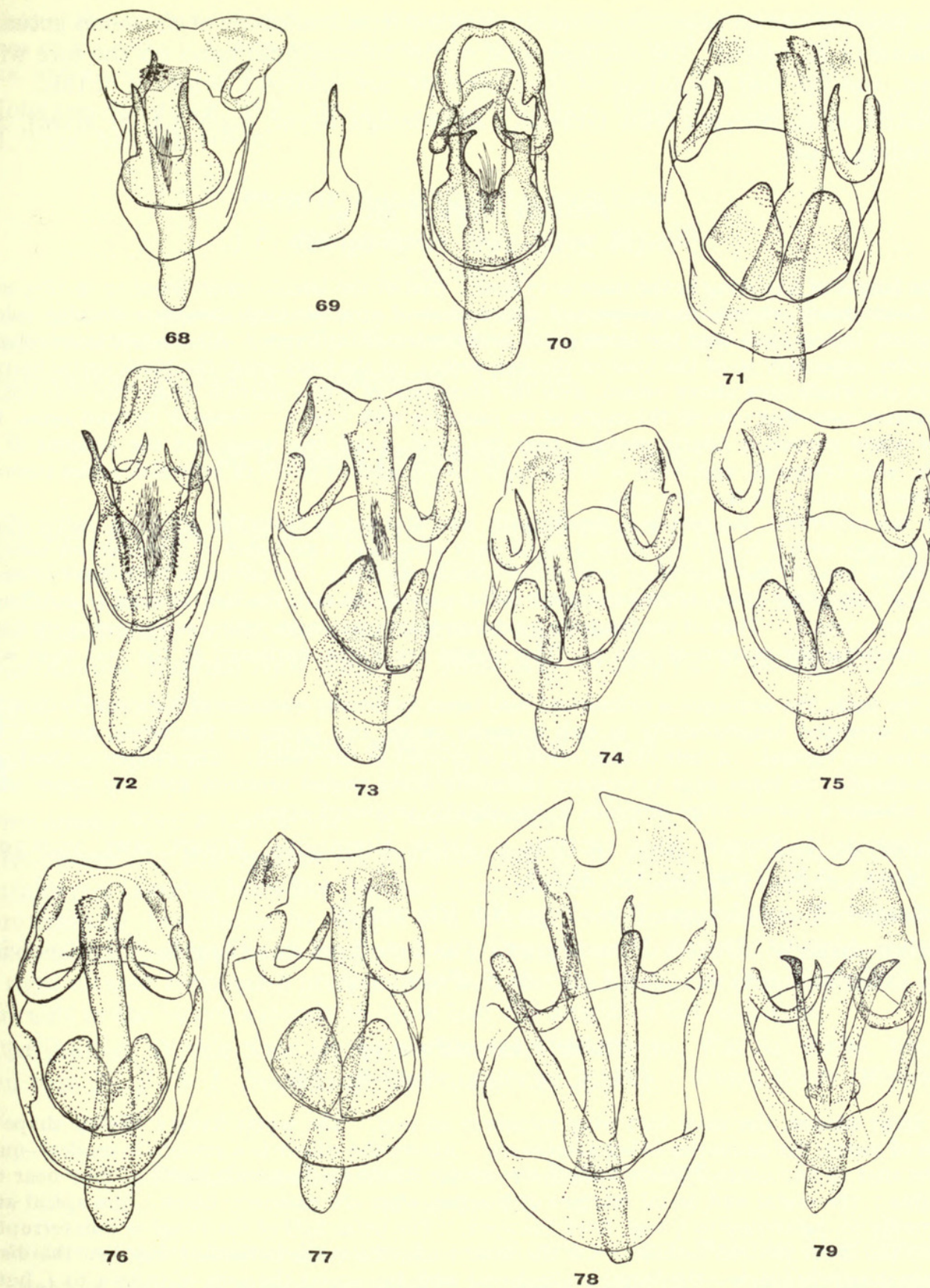
Allotype ♀, as holotype, B.M. Type No. Rh. 16835.

Other material, NEW GUINEA : 2 days north of Fak Fak, 1700', xii.1907 (A.E. Pratt), 1 ♀ ; Lower Mambare River, v.1906 (A. S. Meek), 1 ♂.

***Philiris gloriosa* (Bethune-Baker) comb. n.**

(Text-fig. 80)

Candalides gloriosa Bethune-Baker, 1908 : 121 pl. 8, fig. 3, Angabunga River (Type !) (♂ holotype nec ♀ allotype).



FIGS. 68–79. ♂ genital armature : 68, *Philiris sublutea sublutea* ; 69, *P. sublutea extensa* (claspers only) ; 70, *P. caerulea* ; 71, *P. apicalis* ; 72, *P. hypoxantha* ; 73, *P. griseldis gisella* ; 74, *P. philotas* ; 75, *P. philotoides* ; 76, *P. ianthina* ; 77, *P. agatha* ; 78, *P. montigena* ; 79, *P. praeclara*.

As pointed out on page 230, Bethune-Baker's female allotype of *gloriosa* is actually a female of *P. agatha*; the configuration of the submarginal band on the fore wing above, and the buff coloration of the underside, are sufficient evidence of this.

Distribution, BRITISH NEW GUINEA: Angabunga River, 6000' (A. S. Meek), 2 ♂ (including type).

***Philiris elegans* sp. n.**

(Pl. 3, fig. 148. Text-fig. 81)

The length of fore wing in the male is 17 mm.; that of the female varies from 17 to 18.5 mm. The male above presents the shape and appearance of a rather large *intensa*; its blue colour is slightly lighter, but is of the same shade and degree of brilliance. All the blackish margins are wider, especially so at the apex of the fore wing; on the hind wing, the black costal margin covers the whole area above vein 6, with the exception of a tiny portion where the blue colour penetrates over that vein in the angle of its juncture with vein 7. Beneath in both sexes, the shiny white ground is faintly clouded near the apex of the fore wing, and the margins of all wings, with brownish, and there is in the male a well marked patch of brownish scales towards the base of area 1 on the fore wing.

On the upperside, the female is superficially like that sex of *Holochila absimilis*, being dingy brown-black with a large oval white area on each wing, and a suffusion of bluish scales basally. The white area of the fore wing is situated almost centrally; it covers a large part of areas 2 and 3, extending upwards into the more distal part of the cell, the base of area 4, and downwards into area 2. That of the hind wing extends from just above vein 4 to the costa, its lower edge reaching the margin of vein 7. The fringes are white, darkened at the vein-ends with fuscous.

In the male, the aedeagus is cylindrical, and bears externally numbers of backwardly directed points, arranged longitudinally in two irregular series, one series on the dorsal surface, the other on the ventral. A tuft of long cornuti is present in the vesica. The clasper is short and spoon-shaped, its inner edge is concave before its acute angled junction with the upper edge, from whence a curved ridge proceeds to the slightly produced apex.

Holotype ♂, DUTCH NEW GUINEA: Arfak Mountains, Mount Siwi, 15.v.1928 (E. Mayr), B.M. Type No. Rh. 16837.

Allotype ♀, as holotype, B.M. Type No. Rh. 16838.

Other material, DUTCH NEW GUINEA: as holotype, iv.-vi.1928, 3 ♀; Geelvink Bay, Coast District, xi.1914 (A., E. & F. Pratt), 1 ♀.

***Philiris lavendula* sp. n.**

(Pl. 3, fig. 149. Text-fig. 82)

A large species, the male fore wing measures 20 mm. The wings have a similar shape to those of *diana*, the primaries being acuminate. Above the colour is a smooth lavender—quite unlike that of any other *Philiris*; all the veins are finely marked with black as they near the margins; the costal and distal margins of the fore wing are narrowly black; the apical area is broadly so, extending to 5 mm. from the apex. The outer half of the fringe is uninterrupted white, the inner portion fuscous. On the hind wing, the costa is broadly fuscous, the distal margin narrowly black; the fringe is checkered with fuscous at the ends of veins 1 to 4, but is otherwise like that of the fore wing. Beneath, all wings are satin-white, unmarked except for a dusky shade in the base of cellule 1 on the primaries.

The aedeagus bears some resemblance to that of *fulgens*, but the outward pointing spur at the apex is much smaller; it is accompanied by a series of smaller points as in that species,

the lateral row however is replaced by a scattering of points situated more ventrally on the surface of the organ. A large patch of strong cornuti occupies most of the inner half of the vesica, and a subsidiary elongate series reaches outwards from it towards the orifice.

Holotype ♂, DUTCH NEW GUINEA : Geelvink Bay, Wandesi, 1892 (*W. Doherty*), B.M. Type No. Rh. 16839.

Philiris diana Waterhouse & Lyell

(i) ***P. diana diana*** Waterhouse & Lyell
(Text-fig. 83)

Philiris diana Waterhouse & Lyell, 1914 : 76, figs. 183, 270 and 271, Kuranda, Queensland.

Philiris diana Waterhouse & Lyell ; Waterhouse, 1932 : 138, pl. 20, figs. 4, 4A.

Distribution, AUSTRALIA : Queensland : Kuranda.

(ii) ***P. diana papuanus*** Wind & Clench
(Text-fig. 84)

Philiris diana papuanus Wind & Clench, 1947 : 6, Morobe District (Type !).

This race is entirely without a white cloud in the disc of the fore wing. The male genitalia are basically the same as those of the nominate race ; the claspers though larger and stouter, exhibit the same degree of asymmetry.

Distribution, BRITISH NEW GUINEA : Milne Bay, xi.1899 (*A. S. Meek*), 1 ♂.

Philiris ariadne Wind & Clench
(Text-fig. 85)

Philiris ariadne Wind & Clench, 1947 : 7, Morobe District (Type !).

The claspers of this species are asymmetrical as in *diana* ; the left one viewed ventrally is a tapering horn-like (bovine) structure with a sweeping turn outwards at approximately two-thirds its length ; a lateral view reveals that the terminal portion is flattened and bears finally a tooth-like projection directed at right angles ; the right clasper terminates prematurely in a clavate knob. A long snake-like line of cornuti in the vesica extends to quite half the length of the aedeagus.

Distribution, DUTCH NEW GUINEA : Weyland Mountains, Wai Sai River, 1000', vi-vii.1920 (*C. F. & J. Pratt*), 1 ♂ ; BRITISH NEW GUINEA : Welsh River (*Weiske*), 1 ♂.

Philiris unipunctata (Bethune-Baker) **comb. n.**
(Text-fig. 86)

Candalides unipunctata Bethune-Baker, 1908 : 123, pl. 8, fig. 14, Biagi, Mambare River (Type !).

Closely related to *P. refusa*, but readily separated by its narrow dusky borders on the underside, and by the presence of distinct discoidal spots on that surface of all wings. The male genitalia do not differ from those of that species. Bethune-Baker does not mention the sex in his description, but the type is a female. The male

upperside is suffused with blue metallic scaling over the white areas ; such a specimen is mentioned by that author, but he does not point out that it was a male character.

Distribution, NEW GUINEA : Mambare River, Biagi, 5000' i-vi.1906 (*A. S. Meek*), 1 ♀ (holotype) ; Angabunga River, above 6000', xi-ii.1904-5 (*A. S. Meek*), 2 ♂, 3 ♀ ; as holotype, 1 ♂, 1 ♀ ; Aroa River (*A. S. Meek*), 3 ♂ ; Hydrographer Mountains, 2000', i.1918 (*Eichhorn Bros.*), 1 ♀ ; Mafalu, 4000', i.1934 (*L. E. Cheesman*), 1 ♀ ; Snow Mountains, near Oetakwa River, up to 3500', x-xii.1910 (*A. S. Meek*), 1 ♂.

***Philiris refusa* (Grose-Smith) comb. n.**

(i) ***P. refusa refusa* (Grose-Smith)**

Holochila refusa Grose-Smith, 1894 : 580, Humboldt Bay (Type !).

Candalides refusa (Grose-Smith) Grünberg (in Seitz), 1921 : pl. 145f.

Distribution, DUTCH NEW GUINEA : Humboldt Bay, ix-x.1892, 3 ♂, 1 ♀ (including holotype and allotype) ; Coast between Geelvink Bay and Humboldt Bay, 1886 (*W. Doherty*), 2 ♂ ; North New Guinea, 1 ♀.

(ii) ***P. refusa aequalis* (Grose-Smith) stat. n.**

Holochila aequalis Grose-Smith, 1897a : 517, Kapaur (Type !).

Distinguished from the nominate race by the dark borders on the underside of the wings being quite twice as wide.

Distribution, DUTCH NEW GUINEA : Kapaur, 24 ♂, 10 ♀ (including holotype and allotype) ; Dorey Bay, 1892 (*W. Doherty*), 5 ♂, 1 ♀ ; Fak Fak, 1905-7 (*A. E. Pratt*), 2 ♂ ; Arfak Mountains, Mount Siwi, v-vi. 1928 (*E. Mayr*), 3 ♂, 1 ♀ ; Wandammen Mountains, 3-4000', xi. 1914 (*A., C. & F. Pratt*), 4 ♂ ; Snow Mountains, near Oetakwa River, up to 3500', x-xii.1910 (*A. S. Meek*), 1 ♀ ; Upper Setekwa River, 2-3000', viii.1910 (*A. S. Meek*), 1 ♀.

***Philiris intensa* (Butler)**

(i) ***P. intensa butleri* (Grose-Smith & Kirby) stat. n.**

Holochila butleri Grose-Smith & Kirby, 1897 : 8, pl. 10, fig. 13, Halmaheira, Gilolo.

The male differs from that sex of the nominate race by the great extension of the black apical portion of the fore wing, which covers approximately one-third of the wing area, and by the wider black margin on the hind wing. The female is dingy brown-black above, with an indeterminate blue smear covering the bases of areas 2 and 3 on the fore wing. The cilia are white with black spots at the vein-ends.

Distribution, MOLUCCAS : Batchian, 3 ♂, 1 ♀ ; Halmaheira, 1 ♀ ; Gilolo, 1 ♂.

(ii) *P. intensa intensa* (Butler)
(Text-fig. 87)

Holochila intensa Butler, 1876 : 245, Aru (Type !).

Holochila intensa Butler ; Grose-Smith & Kirby, 1897 : pl. 10, figs. 8-10.

In the male, the upperside is slightly lighter blue than that of the preceding, but the difference in tint is by no means as great as could be inferred from Grose-Smith & Kirby's figures. Aru females show a tendency for the blue and white on the upperside of the fore wing to be restricted, those from New Guinea exhibiting a marked extension of this area ; whereas those from the Louisiades and Trobriand Islands have on the hind wing a blue basal area, which extends well beyond the cell end and reveals a faint fuscous discoidal bar. In females from New Hanover and New Ireland there are pale areas on all wings, these areas being mostly white, with their more basal portions more silvery blue. These marked geographical differences in this species, and the next, suggest subspecific segregation, but in view of the uncertain correlation of the sexes in this genus, it is deemed inadvisable to provide them with names until their relationships can be corroborated.

Distribution, ARU, NEW GUINEA, LOUISIADES, and BISMARCKS.

(iii) *P. intensa birou* Wind & Clench

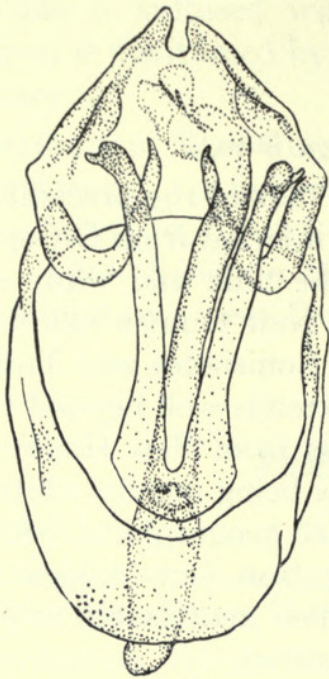
Philiris intensa birou Wind & Clench, 1947 : 10, Morobe District.

Philiris regina (Butler) **comb. n.**
(Text-fig. 88)

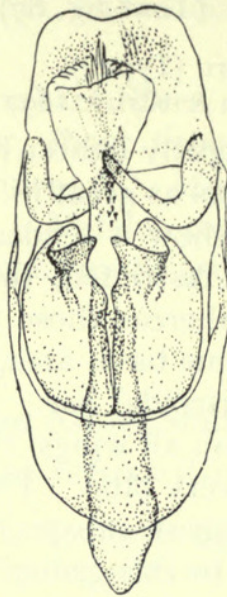
Holochila regina Butler, 1882 : 150, Duke of York Island (Type !).

The male is extremely like that of *intensa* ; it can be distinguished by the more restricted dark margins on all wings ; this is most noticeable in the apical area of the fore wing. On the hind wing, there is an irregularity on the inner edge of the juncture between the marginal and costal bands in cellule 6 ; whereas in *intensa* the marginal band joins the costal band in an even arc. The females exhibit a good deal of geographical variation. Those from Key, Mefor, Schouten Islands, Dorey and Snow Mountains, have all wings largely lavender-blue, without a suspicion of white. Those from Humboldt Bay and Mandated New Guinea have a whitish patch in the disc of the fore wing. British New Guinea females are without the whitish patches, the lavender-blue area is restricted on the fore wing and absent on the hind wing. The allotype from Duke of York Island is like this. Two females from New Britain are similar to those from Humboldt Bay, but have even larger white areas. A dusky cell-end bar is observable in females throughout the entire range. The duct of the bursa copulatrix is of approximately even width throughout its length ; whereas that of *intensa* is decidedly wider at its orifice.

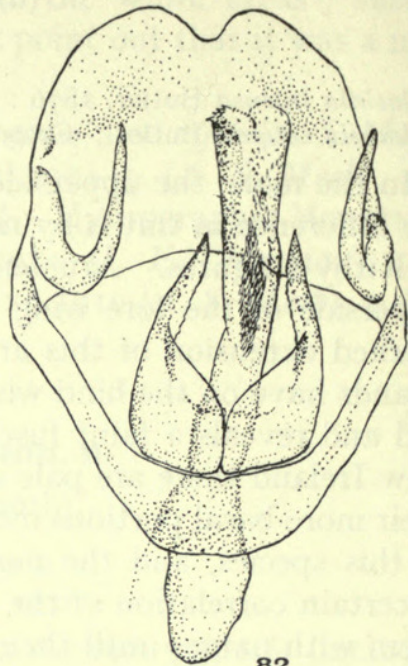
Distribution, KEY ISLANDS, NEW GUINEA and NEW BRITAIN.



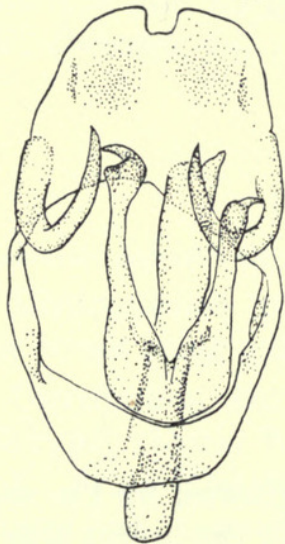
80



81



82



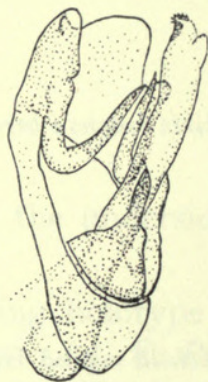
83



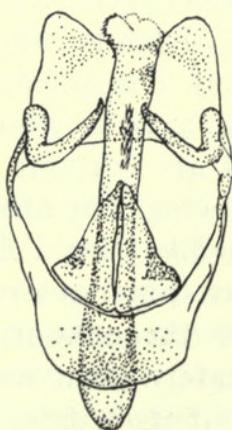
84



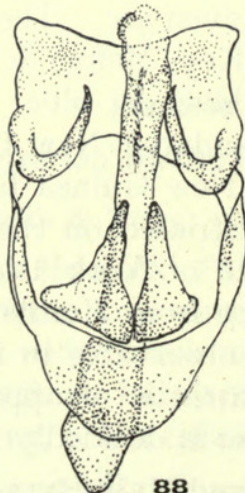
85



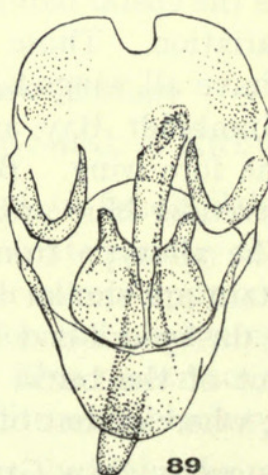
86



87



88



89



90

***Philiris zadne* (Grose-Smith) comb. n.**
(Text-fig. 89)

Holochila zadne Grose-Smith, 1898a : 107, Mailu, British New Guinea (Type !).

Holochila zadne Grose-Smith ; Grose-Smith, 1899, pl. (Or. Lyc.) 20, figs. 8, 9 and 10.

The acuminate fore wings, light blue ground colour, and narrow distal margin on the hind wings, render the male easily recognizable. Grose-Smith's figure 10 purports to be the female of this species. The specimen in the B. M. (N. H.) from which it was made is without antennae or abdomen, and is not distinguishable from the female of *intensa*. There is a strong probability that it is not the true female of *zadne*.

Distribution, BRITISH NEW GUINEA : Mailu, vii.1895 (*Anthony*), 1 ♂, 1 ♀, (holotype and allotype).

***Philiris kumusiensis* sp. n.**
(Pl. 4, fig. 152. Text-fig. 90)

Length of fore wing ; male, 11–13 mm. ; female, 13 mm. The upperside of the male is a much paler and softer shade of blue than that of *intensa*, its gloss being less intense ; this colour occupies only the basal two-thirds of the wings, the remainder being taken up with the wide black margins. On the fore wing the dark margin extends along the whole of the costa and upper part of the cell. The hind wing costa is whitish, and the cilia are whitish, checkered with fuscous at the vein-ends. The female is dusky earth-brown above ; on the fore wing, a nebulous grey patch is situated at the base of areas 1 and 2, and a streak of scattered blue scales runs from the base midway between veins 1 and 2.

The male aedeagus bears near its free end a strongly sclerotized structure, rather like a parrot's beak in profile, and directed towards the left ; to the right of this, there extends a wide irregular band of small points, all directed to the right, and reaching across the whole dorsal surface of the organ. An attenuated column of cornuti extends from the base of the vesica to quite near the orifice. The claspers are only one-third the length of the aedeagus ; they are bulbous at the base, but taper sharply towards the blunt apex, giving a somewhat pear-like appearance.

Holotype ♂, BRITISH NEW GUINEA : Kumusi River, viii.1907 (*A. S. Meek*), B.M. Type No. Rh. 16840.

Allotype ♀, as holotype, vi.1907, B.M. Type No. Rh. 16841.

Other material, as holotype, 1 ♂.

***Philiris argenteus* (Rothschild) comb. n.**
(Pl. 3, fig. 147. Text-fig. 91)

Candalides argenteus Rothschild, 1915 : 30, Utaqua River (Type !).

Similar in both sexes to *kumusiensis*, the male only differing by the extension of the blue colour over the fore wing cell, and by its rather narrower dusky margins.

FIGS. 80–90. ♂ genital armature : 80, *Philiris gloriosa* ; 81, *P. elegans* ; 82, *P. lavendula* ; 83, *P. diana* ; 84, *P. papuanus* ; 85, *P. ariadne* ; 86, *P. unipunctata* ; 87, *P. intensa* ; 88, *P. regina* ; 89, *P. zadne* ; 90, *P. kumusiensis*.

The male claspers are roughly triangular and terminate in a point. The longer and more slender aedeagus bears a number of back directed points below the apex, and there are no cornuti in the vesica.

The hitherto undescribed female differs from *kumusiensis* in that the nebulous grey-blue patch on the fore wing is more extensive and is produced towards the base of the wing, covering the basal portion of area 1.

Neallotype ♀, DUTCH NEW GUINEA : Snow Mountains, Upper Setekwa River, 2-3000', vii.1910 (*A. S. Meek*), B.M. Type No. Rh. 16842.

Other material, DUTCH NEW GUINEA : Utakwa River, ii.1913 (*A. F. R. Wollaston*), 1 ♂ (holotype).

Philiris kamerungae Waterhouse

(i) *P. kamerungae kamerungae* Waterhouse

Philiris kamerungae Waterhouse, 1902 : 650, Queensland.

Philiris kamerungae Waterhouse ; Waterhouse, 1914 : 77, figs. 171-172.

Philiris kamerungae Waterhouse ; Waterhouse, 1932 : 137, pl. 20, figs. 2-2A.

The male is lighter blue above than *nitens* ; it has a white area in the disc of the fore wing, and another in the apical portion of the hind wing.

Distribution, AUSTRALIA : Queensland : Cairns ; Kuranda ; Mulgrave River.

(ii) *P. kamerungae lucina* Waterhouse & Lyell

Philiris kamerungae lucina Waterhouse & Lyell, 1914 : 77, Cape York.

Said to have the blue colour replaced by green in both sexes. This insect is not represented in the B.M. (N.H.).

Philiris nitens (Grose-Smith) **comb. n.**

(i) *P. nitens nitens* (Grose-Smith) (Text-fig. 92)

Holochila nitens Grose-Smith, 1898a : 107, North Queensland (Type !).

Holochila nitens Grose-Smith ; Grose-Smith, 1899, pl. (Or. Lyc.) 20, figs. 3-4.

Waterhouse (1902: 653) considered that *nitens* was synonymic with *innotatus* and *ilias* ; apparently he had no first-hand knowledge of the insect, and he does not mention the species in his subsequent publications. Examination of the male genitalia of the type shows affinity with those of *kamerungae*, and when more material is available for study, the two may prove to be conspecific forms or races.

The male *nitens* has a rather more purple tinge to the blue ground colour, a much wider (2 mm.) marginal band on the hind wing, and is entirely without a discal white patch on the fore wing. All the fringes are white.

Distribution, AUSTRALIA : Queensland : without further data, 1 ♂ (holotype) ; Mulgrave River, ii-iv.1907, 1 ♂.

(ii) *P. nitens restricta* ssp. n.

In the male fore wing the blue ground colour is restricted, whereas, in *nitens nitens* this colour extends widely over the lower half of the cell, and the base of cellule 2 ; in *restricta*, it only crosses the median vein at the basal end, and barely protrudes over the base of vein 2, these areas being separated by a wedge of dusky brown reaching downward to the junction of the median vein and vein 2. On the hind wing the costal region is whitish ochreous shading to fuscous, the remainder of the wing is like that of the nominate race.

The female, on all wings, is dusky brown, brightened on the fore wing by an individually variable amount of blue scaling at the base of areas 1 and 2. The costa of the hind wing is broadly white extending to vein 7 ; in one example, this extends over vein 7 as a nebulous pale spot, peppered with brown scales.

Holotype ♂, AUSTRALIA : Queensland : Cedar Bay (*A. S. Meek*), B.M. Type No. Rh. 16843. Allotype ♀, as holotype, B.M. Type No. Rh. 16844.

Other material, as holotype, 2 ♂, 2 ♀.

Philiris azula Wind & Clench
(Text-fig. 93)

Philiris azula Wind & Clench, 1947 : 8, Morobe District (Type !).

It may be permitted to amplify the terms of the original colour description "slightly purplish blue" by noting that the colour is distinctly blue, only acquiring a slight purple tinge when the light falls obliquely. The exact blue shade is not repeated in any other *Philiris* species.

The cylindrical aedeagus exhibits terminally a strongly sclerotic sausage-shaped structure, bearing a number of small blunt points. A compact bunch of long cornuti are present in the vesica. The claspers are short, bulbous at the base, with a distinct shoulder on the outer margin ; they terminate in a blunt point.

The species is not represented in the B.M. (N.H.).

Philiris angabunga (Bethune-Baker) comb. n.
(Text-fig. 94)

Candalides angabunga Bethune-Baker, 1908 : 123, pl. 9, fig. 5, Angabunga River (Type !).

Bethune-Baker was mistaken when he described the type as a female ; examination of the genitalia reveals that it is an undoubted male. The discovery of a female having similar discoidal markings on the underside serves to confirm this.

The female is brown-black above, with a large rounded white spot in the submedian area of the fore wing, and a strong blue suffusion extending from the base, below the median vein, to the inner edge of the white spot ; below vein 1, the same colour extends along the hind margin to merge with the brown-black in the distal region. The hind wings are less intensely blue basally ; they bear a large white spot covering most of the outer half of the wing, and extending from the costa to vein 4. All the fringes are white, strongly checkered with fuscous at the vein-ends. The underside is like that of the male.

Neallotype ♀, BRITISH NEW GUINEA : Angabunga River, 6000', xi-ii.1904-5 (*A. S. Meek*), B.M. Type No. Rh. 16845.

Other material, as neallotype, 1 ♂ (holotype).

***Philiris fulgens* (Grose-Smith & Kirby) comb. n.**

- (i) ***P. fulgens fulgens*** (Grose-Smith & Kirby)
(Text-fig. 95)

Holochila fulgens Grose-Smith & Kirby, 1897 : 8, pl. 10, figs. 14-15, Amboina (Type !).

Candalides fulgens (Grose-Smith & Kirby) Grünberg (in Seitz), 1921 : 854, pl. 145g.

Distribution, MOLUCCAS : Amboina (*Wallace*), 1 ♂ (holotype) ; Amboina (*Hewitson*), 1 ♂ ; Central Ceram, 3000', xii.1919 (*C., F. & J. Pratt*), 1 ♂.

- (ii) ***P. fulgens bicolorata*** Wind & Clench

Philiris fulgens bicolorata Wind & Clench, 1947 : 9, Aru Islands.

Not represented in B.M. (N.H.).

- (iii) ***P. fulgens septentrionalis*** Joicey & Talbot

Philiris fulgens septentrionalis Joicey & Talbot, 1916 : 76, Biak (Type !).

Distribution, DUTCH NEW GUINEA : Schouten Islands, Biak, vi.1914 (*A., C. & F. Pratt*), 1 ♂, (holotype) ; Kapaur, 1 ♂.

- (iv) ***P. fulgens kurandae*** Waterhouse stat. n.

Philiris kurandae Waterhouse, 1902 : 651, Cairns District.

Philiris kurandae Waterhouse ; Waterhouse, 1932 : 138, pl. 20, figs. 3-3A.

Distribution, AUSTRALIA : Queensland : Kuranda ; Cedar Bay.

***Philiris remissa* sp. n.**

(Pl. 4, fig. 153)

Length of fore wing in the male : 16 mm. The fore wing apex is somewhat acute, despite a slight prominence at vein 4 in the distal margin. All wings are shining purple ; their blackish margins are 1 to 2 mm. wide, widening at vein 3 into the blackish apical area. Beneath, the ground colour has a slightly cream tinge, which is not found in the previous species. There is a brown smear at the base of cellule 1 of the fore wing.

Holotype ♂, BRITISH NEW GUINEA : Kumusi River, vii.1907 (*A. S. Meek*), B.M. Type No. Rh. 16846.

Although this species is closely related to *fulgens*, and the male genitalia of the two cannot be differentiated, in view of the obvious macroscopical characters and the shortage of material, it is thought advisable to treat *remissa* as a good species.

***Philiris moluccana* sp. n.**

(Text-fig. 96)

The fore wing in both sexes measures 15-16 mm.; its apex is obtuse. In the male, on all wings the colour changes by light refraction from rose-brown to bright bluish purple ; the wide margins are dusky brown, and so merge with the ground colour, especially the rose-brown tint, that their inner limits are difficult to determine. Above vein 6 on the hind wing, there is a wide longitudinal streak of bluish purple, extending almost to the apex, and quite unaffected by refraction. The fringes are somewhat tattered but appear to be mainly fuscous, those of

the hind wing however showing traces of whitish scales between the vein-ends. In the female the wings are dusky earth-brown, with on the fore wing a wide grey-blue smear extending below the median vein from the base to within 4 mm. of the distal margin.

Beneath, both sexes are satin-white with a faint greyish tinge, only marked by the hind marginal black spot on the hind wing, and the black fringe spots at the vein-ends.

Holotype ♂, MOLUCCAS : Obi, Laiwui, ix.1897 (*W. Doherty*), B.M. Type No. Rh. 16847.

Allotype ♀, as holotype, B.M. Type No. Rh. 16848.

Other material, as holotype, 1 ♀.

Philiris mayri Wind & Clench
(Text-fig. 97)

Philiris mayri Wind & Clench, 1947 : 14, Arfak Mountains (Type !).

In the B.M. (N.H.) is a short series of both sexes, which were evidently taken by Dr. Mayr with the type ; their identity has now been established by careful comparison with the type.

A trifling but unique character not mentioned in the original description is observable in the male fore wings ; it consists of a scattering of white scales along the veins in the disc of the wing, obvious under a lens, and just visible to the naked eye.

The hitherto undescribed female is similar to that of *subovata*; the ground colour above is dingy brown-black, and the central rounded white spot on the fore wing is even larger than in that species, extending from vein 1 to vein 4, and from the median vein to within 3 mm. of the margin. Scattered blue scales are present at the base of the wing. On the hind wing the costa is whitish to below vein 7. In contrast to the ochreous tipped antennal knobs of *subovata*, those of *mayri* are completely black.

Neallotype ♀, DUTCH NEW GUINEA : Arfak Mountains, Mount Siwi, 800 m., 15.v.1928 (*E. Mayr*), B.M. Type No. Rh. 16849.

Other material, DUTCH NEW GUINEA : as neallotype, iv-vi.1928, 4 ♂, 3 ♀ ; Momi, 2500', iii.1910 (*C. & F. Pratt*), 1 ♀.

Philiris ziska (Grose-Smith) **comb. n.**
(Text-fig. 98)

Holochila ziska Grose-Smith, 1898 : 11, pl. 13, figs. 11-12, Kapaur (Type !), ♂ nec ♀.

Candalides pratti Bethune-Baker, 1908 : 122, pl. 8, fig. 13, Dutch New Guinea (Type !), **syn. n.**

The female described and figured by Grose-Smith cannot be the true female of this species, as its hind wing beneath bears no indication of a black hind-marginal dot. It bears some resemblance to that sex of *P. praeclara*, but is more heavily bordered with blackish, and the bordering of the hind wing extends in wide rays along the submedian veins. Its true identity cannot be ascertained until more material is available.

Distribution, NEW GUINEA : Waigeu (*Wallace*), 1 ♂ ; Kapaur (*W. Doherty*), 4 ♂ (including type) ; Dorey (*W. Doherty*), 1 ♂ ; Fak Fak, v-vi.1905 (*A. E. Pratt*), 1 ♂

(type of *pratti*) ; Ninay Valley (*A. E. Pratt*), 1 ♂ ; Astrolabe Range (*Dodd*), 1 ♂ ; Humboldt Bay, ix-x.1892 (*W. Doherty*), 1 ♂ ; Snow Mountains, near Oetakwa River, x-xii.1910 (*A. S. Meek*), 1 ♂ ; Utakwa River, Base Camp, i.1913 (*A. F. R. Wollaston*), 1 ♂ ; Hydrographer Mountains (*A. S. Meek*), 1 ♂ ; Milne Bay (*A. S. Meek*), 1 ♂ ; Welsh River (*Weiske*), 1 ♂.

***Philiris misimensis* Wind & Clench**
(Text-fig. 99)

Philiris misimensis Wind & Clench, 1947 : 15, Morobe District (Type !).

Only known from the male holotype, this species is similar on the upperside to the male of *P. philotoides*, its shape, dusky purple colour, and size, all being as in that species. The dark margins of the fore wing are decidedly wider, especially so at the apex. As indicated in the key the distinctive underside is a ready means of identification.

The aedeagus is widened towards its extremity, and exhibits on the left side of this widening a densely sclerotised structure, bearing a series of outwardly directed teeth of various sizes. The vesica contains an elongate patch of stout cornuti. The claspers are short and curved, each terminates in an inwardly directed point.

The species is not represented in the B.M. (N.H.).

***Philiris tombara* sp. n.**
(Pl. 4, fig. 165. Text-fig. 100)

Both sexes are like *lucescens* in appearance and size. In the male, the fore wing apex is more widely black, extending from 6 mm. at the apex, and tapering sharply to 1.5 mm. at the tornus. The black margin of the hind wing is also wider, more than 1 mm., expanding in cellule 6 to 2.5 mm. The costa is dingy fuscous. On the fore wing of the female, the basal blue scarcely extends beyond the origin of vein 2 ; the white discal half-band is clear white, spreading from the hind margin over the central third of area 1, and the bases of areas 2, 3 and 4. The hind wing is mainly dusky brown, of a paler tint than the fore wing, with a few scattered blue scales toward the base, and the costa laved with white. Both sexes are like *lucescens* beneath.

The male claspers are roughly triangular, with a rounded apex ; the aedeagus is long and slender, with only one elongate patch of rather weak cornuti.

Holotype ♂, BISMARCK ARCHIPELAGO : New Ireland, ii-iii. (*A. F. Eichhorn*), B.M. Type No. Rh. 16850.

Allotype ♀, as holotype, B.M. Type No. Rh. 16851.

Other material, BISMARCK ARCHIPELAGO : New Ireland, xii-ii.1923-4 (*A. F. Eichhorn*), 3 ♀ ; New Britain, Talesea, iii-iv.1923 (*A. F. Eichhorn*), 1 ♂, 2 ♀ ; Rook Island, viii.1913 (*A. S. Meek*), 1 ♂, 1 ♀.

***Philiris phengotes* sp. n.**
(Pl. 4, fig. 160. Text-fig. 101)

As compared with *moira*, the male has broader wings ; the fore wing apex is even more obtuse, and its distal margin more convex. All the wings above are an intense blue-purple, which from a side view reveals a refractive reddish lustre ; the margins are narrowly black,

only widening to approximately 2 mm. at the fore wing apex. The cilia are dusky brown, those of the hind wing being distinctly lighter in colour between the vein-ends. In the female, the colour is dusky brown; a wash of light blue scales covers the basal part of area 1 on the fore wing, and merges with the rounded white spot occupying the bases of areas 2 and 3; the hind wing costa is broadly white. Beneath, both sexes are rather soiled white, with only a dim lustre. The black spot is present near the hind margin of the hind wing.

The male claspers viewed ventrally are roughly oval, twice as long as broad, and with an inconspicuous and very obtuse angle at the apex. In the vesica, the innermost patch of cornuti is larger than that of *innotatus*, and the central patch also is greater in extent, and consists of more closely packed spines. The outermost series is similar to that of *innotatus*.

Holotype ♂, BRITISH NEW GUINEA: Kokoda, 1200', iv.1933 (*L. E. Cheesman*), B.M. Type No. Rh. 16852.

Allotype ♀, as holotype, B.M. Type No. Rh. 16853.

Other material, as holotype, 1 ♂, 1 ♀.

***Philiris dinawa* (Bethune-Baker) comb. n.**

(Text-fig. 102)

Candalides dinawa Bethune-Baker, 1908: 122, Dinawa (Type !).

The male scarcely differs from *moira* above; but whereas the white underside of that species has a matt surface that of *dinawa* glistens, and in certain lights shows a subtle suspicion of shining bronze.

Distribution, BRITISH NEW GUINEA: Dinawa, 4000' (*A. E. Pratt*), 1 ♂, 1 ♀ (holotype and allotype); Upper Aroa River (*A. S. Meek*), 1 ♀; Hydrographer Mountains (*Eichhorn Bros.*), 1 ♀.

***Philiris melanacra* sp. n.**

(Pl. 4, fig. 154. Text-fig. 103)

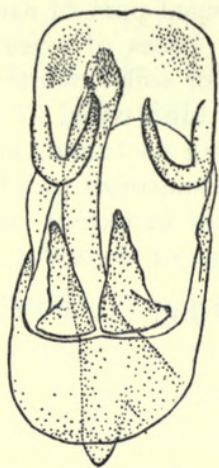
Both sexes are of the same shape, size and appearance as *lucescens*. In the male above, the ground colour is dull purple, without the strong blue refraction of that species. In the female, the blue areas are more restricted than in that sex of *lucescens*, and the white discal area on the fore wing is only represented by a lightening of the blue. A dusky discocellular lunule closes the hind wing cell. The underside and fringes are as in the species mentioned above.

The male genitalia are quite distinct, and differ from those of *lucescens* as follows: the uncus lobes are produced to form two horn-like structures; the sub-unci are shorter; the claspers are bifid, each terminating in two lobes, the ventral lobe being more strongly sclerotized; in the aedeagus, the vesical cornuti are much longer.

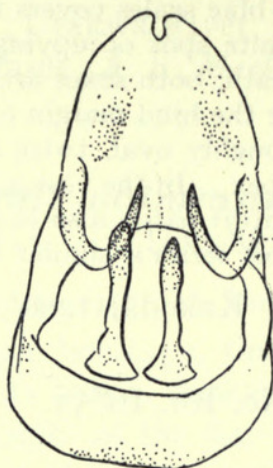
Holotype ♂, BISMARCK ARCHIPELAGO: Witu or French Islands, vi.1925 (*A. F. Eichhorn*), B.M. Type No. Rh. 16854.

Allotype ♀, as holotype, B.M. Type No. Rh. 16855.

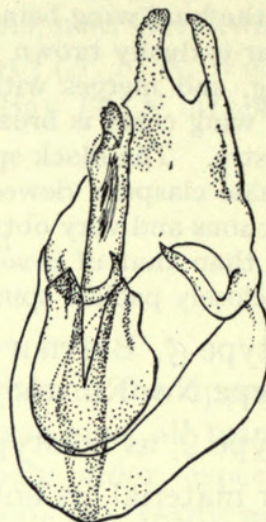
Other material, BISMARCK ARCHIPELAGO: as holotype, vi-viii.1925, 4 ♂, 4 ♀; New Ireland, xi-xii.1923 (*A. F. Eichhorn*), 1 ♀; Neupommern, Herbertshöhe (*Hagen*), 2 ♂; New Britain, 1 ♀; Rook Island, vii-viii.1913 (*A. S. Meek*), 1 ♂, 3 ♀.



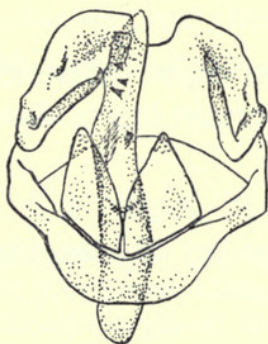
91



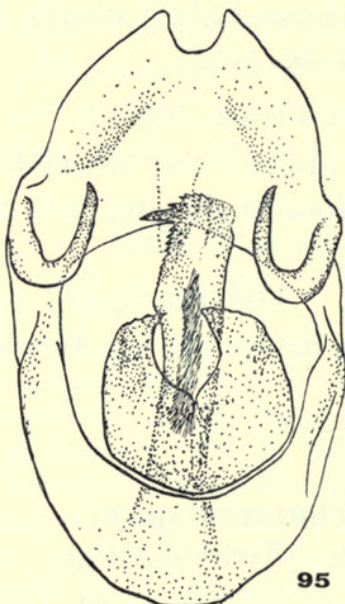
92



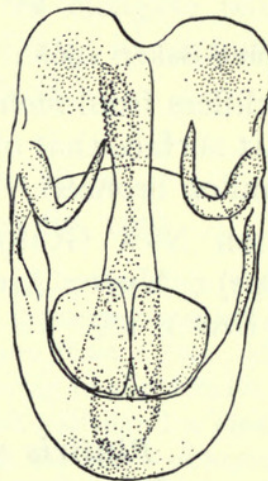
93



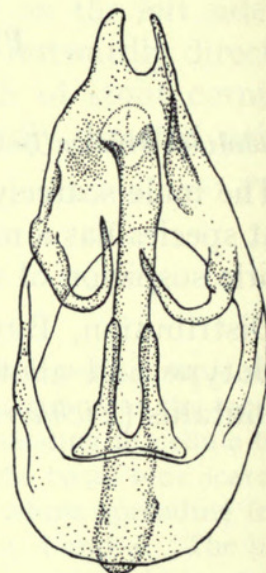
94



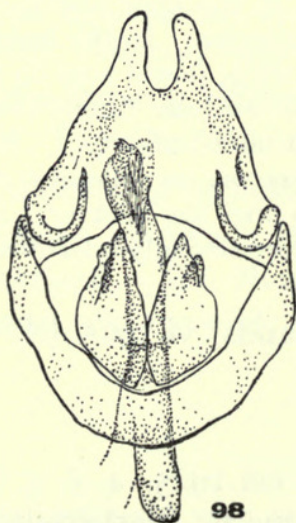
95



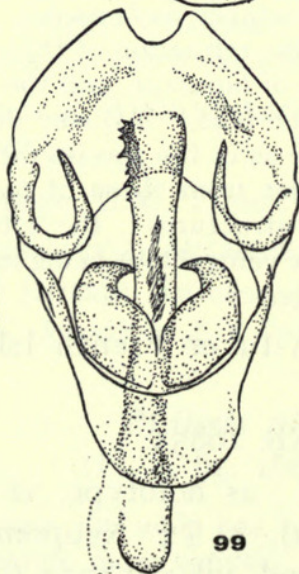
96



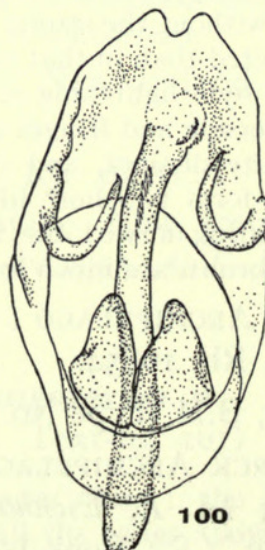
97



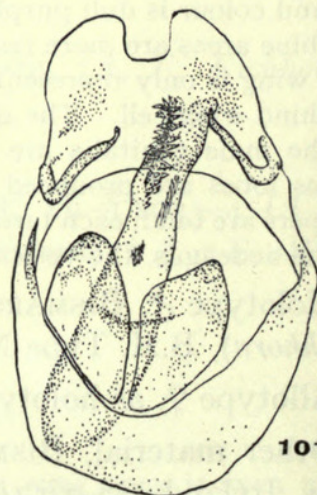
98



99



100



101

***Philiris lucescens* sp. n.**

(Pl. 4, fig. 156. Text-fig. 104)

The fore wing measures 14 to 15 mm.; its apex is acute, and its distal margin only slightly rounded. On all wings, the purple ground is the same colour as that of *moira*, exhibiting a distinctly blue refractive lustre. The black margin of the fore wing commences narrowly at the tornus, widening rapidly towards the apex to a width of 5 mm., and then narrowing again to 2 mm. along the costa. On the hind wing, the distal margin is narrowly black; it is not widened below the apex as is that of *moira*; the costal margin is widely pale fawn but this colour is usually hidden by the fore wing. In the female, the basal blue scaling on the fore wing extends over area 1 and the lower half of the cell, and gradually merges with the dusky margins; it encloses a white area situated in the base of areas 2 and 3. The hind wing is blue at the base, becoming lighter, and intermixed with some fuscous scaling as it approaches the wide dusky brown margin. In both sexes, the fringes are brown basally, and at the vein-ends, the intervals being filled in with white. The slightly lustrous white underside is relieved only by the black spot near the hind margin of the hind wing, and the darkened bases of the fringes.

In all the males dissected, the claspers are asymmetrical, the left one being outwardly concave, and terminating in a blunt point; in each case the right clasper has this point depressed, appearing as if distorted by pressure. The innermost patch of cornuti in the vesica is not observable; it is either absent or united with the middle patch. This middle patch is very densely spined, and is at least four times the extent of that of *phengotes*. The final series of cornuti is scattered, and merges with the small points on the terminal lobe.

Holotype ♂, BISMARCK ARCHIPELAGO: Rook Island, vi-vii.1913 (*A. S. Meek*), B.M. Type No. Rh. 16856.

Allotype ♀, as holotype, B.M. Type No. Rh. 16857.

Other material, BISMARCK ARCHIPELAGO: as holotype, 1 ♂; New Britain, Talesea, i-iv.1925 (*A. F. Eichhorn*), 3 ♂.

***Philiris innotatus* (Miskin)**(i) ***P. innotatus innotatus* (Miskin)**

(Text-fig. 105)

Pseudodipsas innotatus Miskin, 1874: 165, Brisbane.

Philiris ilias innotatus (Miskin) Waterhouse, 1932: 137, pl. 20, figs. 1-1A.

Philiris innotatus (Miskin); Wind & Clench, 1947: 11.

Viewed ventrally the male claspers are concave, and terminate in an inwardly directed subrectangular apex; their outer margin is straight, but the appearance of these organs is greatly influenced by the angle from which they are viewed. The cylindrical aedeagus contains within the vesica three separate clusters of cornuti: the first is an oval patch, consisting of a dense mass of short strong points, and is situated deep in the vesica; above this, a number of much longer and paler spines run upwards in series; finally, a line of stout strongly sclerotic points, diminishing in size, extend to the orifice, spreading over on to the external surface of the aedeagus.

Distribution, AUSTRALIA: Brisbane.

FIGS. 91-101. ♂ genital armature: 91, *Philiris argenteus*; 92, *P. nitens*; 93, *P. azula*; 94, *P. angabunga*; 95, *P. fulgens*; 96, *P. moluccana*; 97, *P. mayri*; 98, *P. ziska*; 99, *P. misimensis*; 100, *P. tombara*; 101, *P. phengotes*.

(ii) *P. innotatus evinculis* Wind & Clench*Philiris innotatus evinculis* Wind & Clench, 1947 : 11, N. Queensland.

Distribution, AUSTRALIA : Northern Queensland.

Philiris riuensis sp. n.

(Pl. 4, fig. 163. Text-fig. 106)

In the male very similar to *phengotes*, it has the same size, wing shape, and reddish refractive lustre ; it can be differentiated by the decidedly wider dark margins on all wings, that of the fore wing attaining a width of 3 mm. at the apex. The dusky brown female bears some resemblance to that sex of *innotatus* ; it has an even greater expanse of light shining blue on the fore wing, which colour covers the lower half of the cell, and extends broadly over the base and disc of the wing, to within 2 mm. of the margin in area 2. A blue wash spreads from the base of the hind wing in most individuals, and in some spreads over most of the cell, with an additional streak running outwards below the median vein and vein 2. The fringes are white, checkered with black in both sexes.

The male claspers terminate in an acute point, and the cornuti of the central patch in the vesica are more feeble and less closely arranged than in *philotes*.

Holotype ♂, LOUISIADE ARCHIPELAGO : Sudest Island, Mt. Riu, 2000', v.1916 (*Eichhorn Bros.*), B.M. Type No. Rh. 16858.

Allotype ♀, as holotype, iii.1916, B.M. Type No. Rh. 16859.

Other material, LOUISIADE ARCHIPELAGO: as holotype, ii-v. 1916, 1 ♂, 8 ♀; St. Aignan, viii-xi.1897 (*A. S. Meek*), 2 ♂, 4 ♀.

Philiris moira (Grose-Smith)(i) *P. moira moira* (Grose-Smith)

(Text-fig. 107)

Holochila moira Grose-Smith, 1899 : 18, pl. (Or. Lyc.) 18, figs. 9-11, Fergusson Island (Type !), ♂ nec ♀.

The wings of the male are more intensely purple on the upperside, and the fore wings are less pointed than in the preceding species. The female allotype is probably misplaced here. In the male, only the extreme tip of the antennal club is touched with yellow, whereas in the allotype the club is covered with that colour to the extent of the terminal half above, and two-thirds below. The insect in question is most probably an *intensa* female. Females with antennae similar to those of the male, and with a large pale blue patch on the fore wing may prove to be true *moira* females.

The male genitalia are similar to those of *innotatus* ; they differ in the shape of the clasper, which appears from a ventral view-point as an inverted pear, with a blunt projection on its distal edge. In the vesica, the series of strong points running towards the orifice are almost twice as large as those of that species.

Distribution, NEW GUINEA : Dorey ; Kapaur ; Weyland Mountains ; Humboldt Bay ; Erina ; Snow Mountains ; Dampier Island ; Vulcan Island ; Fergusson Island.

(ii) *P. moira putih* Wind & Clench

Philiris moira putih Wind & Clench, 1947 : 12, Port Moresby, British New Guinea.

It has not been possible to see the type, or to identify specimens of this subspecies.

***Philiris ignobilis* (Joicey & Talbot) comb. n.**
(Text-fig. 108)

Candalides ignobilis Joicey & Talbot, 1916a : 81, Wandammen Mountains (Type !).

The male claspers show considerable variation in length ; the figure depicts those of the type.

Distribution, ARU-NEW GUINEA : Dobo, 1 ♂ ; Aru, 1 ♂ ; Kapaur, 1 ♂ ; Wandammen Mountains 3000-4000', xi.1914 (*Pratt Bros.*), 1 ♂ (holotype) ; Mt. Goliath, 5000', iii.1911 (*A. S. Meek*), 1 ♂ ; Mambare River, Biagi, 5000', iv.1906 (*A. S. Meek*), 1 ♂ ; Owgarra, v.1903 (*A. S. Meek*), 1 ♂ ; Kumusi River, vi.1907 (*A. S. Meek*), 1 ♂ ; Goodenough Island, 2500-4000', v.1913 (*A. S. Meek*), 1 ♂.

***Philiris albicostalis* sp. n.**
(Pl. 4, fig. 159. Text-fig. 109)

The male fore wing measures 15 mm. The colour above shades by refraction from brownish purple to bright blue-purple ; all wing margins are broadly brown black ; that of the fore wing measuring 2 mm. at the hind angle, increasing slightly to vein 4, from whence it broadens rapidly to 6 mm. at the apex. On the hind wing, the margin is rather narrower, and only reaches vein 7 ; the costa is broadly white as far as vein 6. The underside is like that of *ilias*.

Holotype ♂, MANDATED NEW GUINEA : Astrolabe Bay (*C. Wahnes*), B.M. Type No. Rh. 16860.

***Philiris marginata* (Grose-Smith)**
(Text-fig. 110)

Holochila marginata Grose-Smith, 1894 : 579, Humboldt Bay (Type !).

Holochila marginata Grose-Smith ; Grose-Smith, 1898, pl. (Or. Lyc.) 13, figs. 9-10.

The male claspers are triangular, with sharply pointed apices ; the aedeagus is cylindrical, reduced in width before the apex, and contains in the vesica a single bunch of strong cornuti.

Distribution, DUTCH NEW GUINEA : Humboldt Bay, ix-x.1892 (*W. Doherty*), 1 ♂ (holotype).

***Philiris doreia* sp. n.**
(Text-fig. 111)

Of the same size and appearance as *P. ilias*, but can be readily recognized by the much broader black apex on the fore wing, and by the costal margin of the hind wing being widely washed with tawny white. The purple ground colour is more intense, and shows a distinct reddish glow in certain lights.

The male claspers are very like those of *oreas*, but their apices are more produced. The aedeagus is long and slender ; its vesica is without cornuti.

Holotype ♂, DUTCH NEW GUINEA : Dorey, vi.1897 (*W. Doherty*), B.M. Type No. Rh. 16861.

Other material, DUTCH NEW GUINEA : Kapaur (*Crowley Bequest*), 1 ♂.

***Philiris goliathensis* sp. n.**

(Pl. 4, fig. 166. Text-fig. 112)

The male has a fore wing measurement of 15 mm. On the upperside, the purple colour has a bright violet reflection, which separates the insect at once from the dusky purple *vicina* which follows. On the fore wing, the blackish margin is narrow in the basal half of the costa, never penetrating into the cell; beyond this it widens, filling the whole apical region, including cellule 5, and all but the basal portion of cellule 4, from whence its inner edge swings in an even arc to meet the hind margin 2 mm. from the hind angle. Black scales darken the distal parts of the submedian veins. The veins of the hind wing are similarly darkened, and the dark margins are narrow, being about 1 mm. in width. The costa is pale brownish buff. All the fringes are checkered at the vein-ends, this is especially noticeable on the hind wing. Beneath, all wings are shining pearly white; there is a well marked brownish patch at the base of cellule 1 on the fore wing. The hind wing is unmarked except for the small black dot near the hind margin.

The male claspers are triangular as in the previous species, but their much sharper apices are slightly curved. The short stout aedeagus contains within the vesica a small bunch of short cornuti, lying in the withdrawn organ, opposite a much larger bunch of longer ones.

Holotype ♂, DUTCH NEW GUINEA : Mt. Goliath, 5000', iii.1911 (*A. S. Meek*), B.M. Type No. Rh. 16862.

***Philiris vicina* (Grose-Smith) comb. n.**

(Text-fig. 113)

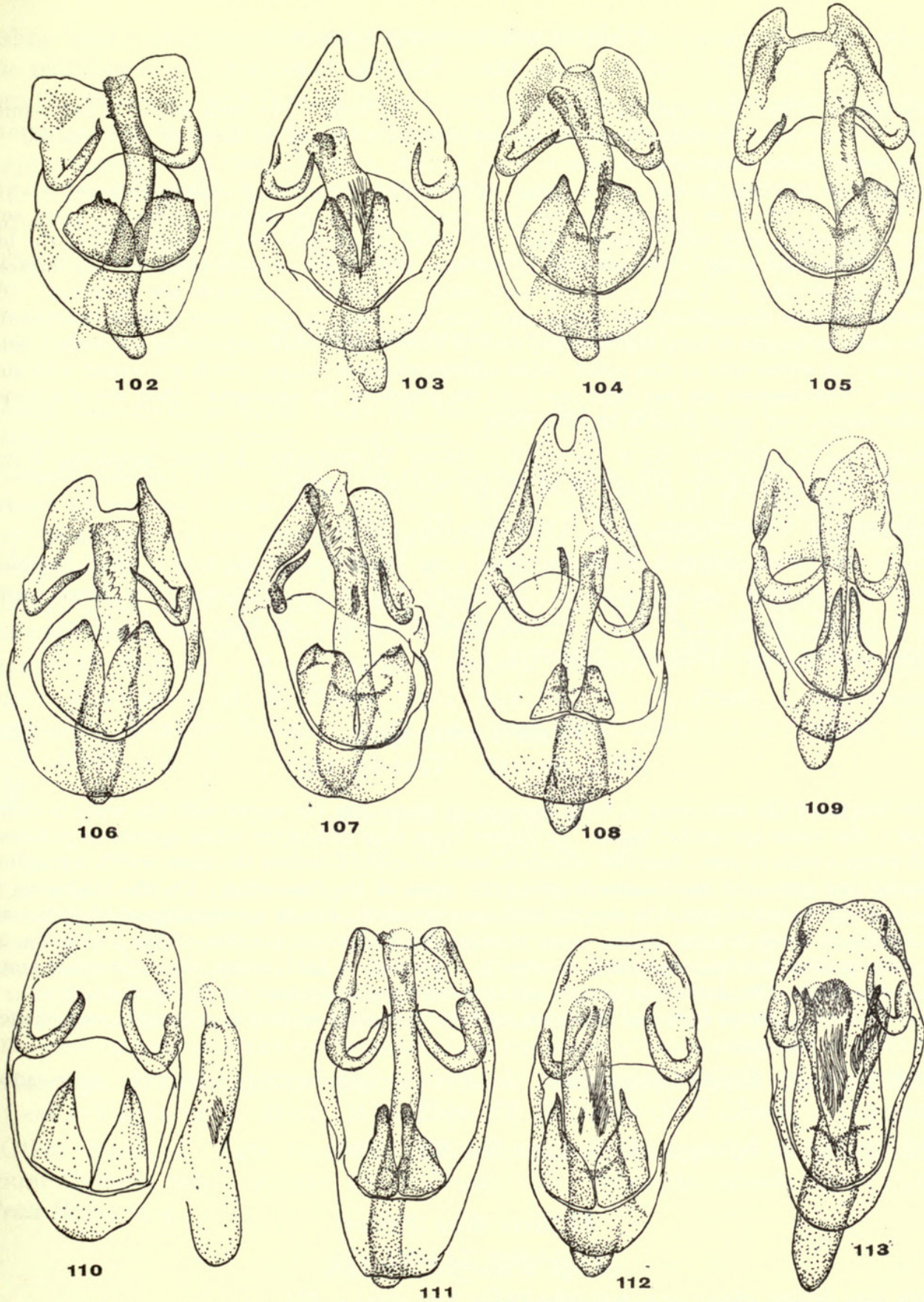
Holochila vicina Grose-Smith, 1898a : 107, Mailu, British New Guinea (Type !).

Holochila vicina Grose-Smith; Grose-Smith, 1899 : pl. (Or. Lyc.) 20, figs. 5-6 (nec female fig. 7).

A female with the same data as that of the male holotype is in the B.M. (N.H.); it bears Grose-Smith's label "*vicina* Gr.-Sm., Type ♀", and is presumably the original of that author's fig. 7; there is no description of that sex. Examination of the specimen precludes its acceptance as the true *vicina* female. The yellow colour on the ends of the antennae is brighter and more extensive than in the holotype, even on the upper surface; the white underside of the wings has none of the pearly gloss to be seen in the male. It may prove to be an *extensa* or *regina* female.

The conformation of the aedeagus in the male is most distinctive; it is contracted at just below half its length, and from there bells out in a trumpet-like formation, terminating in two lobular lips, one dorsal the other ventral. The dorsal lip is strongly sclerotized, saddle-shaped, and hinged at its base, both are covered with tiny spicules. In the vesica, there are two opposing groups of very large cornuti, those in the more ventral group being much the larger, measuring 3 to 4 mm. The clasper is elongate, with a finger-like apex, and an outwardly directed shoulder.

Distribution, NEW GUINEA : Mailu, vii.1895 (*Anthony*), 1 ♂ (holotype); Hydrographer Mountains, 2500', iv.1918 (*Eichhorn Bros.*), 1 ♂; Eilanden River, xii.1910 (*A. S. Meek*), 2 ♂; Mount Goliath, 5000', iii.1911 (*A. S. Meek*), 2 ♂.



FIGS. 102–113. ♂ genital armature : 102, *Philiris dinawa* ; 103, *P. melanacra* ; 104, *P. lucescens* ; 105, *P. innotatus* ; 106, *P. riuensis* ; 107, *P. moira* ; 108, *P. ignobilis* ; 109, *P. albicostalis* ; 110, *P. marginata* ; 111, *P. doreia* ; 112, *P. goliathensis* ; 113, *P. vicina*.

***Philiris albihumerata* sp. n.**

(Pl. 4, fig. 161. Text-fig. 114)

The length of the fore wing in both sexes is 14 to 15 mm. The male above is very similar to *ilias* Felder, but the dusky margins are quite twice as broad as those of that species. Its purple colour has a bright violet tone.

The female is dusky brown on all wings, with on the fore wing, a diffuse blue patch at the base of area 1, which is continued into the base of area 2 as grey-blue smear. Both sexes beneath are white with only a feeble lustre, the small black spot being present above the hind margin of the hind wing. As indicated in the key, the fringes in both sexes are not darkened at the ends of veins 5, 6 and 7, on the hind wing; the other vein-ends are darkened. This character obtains throughout the series, and does not occur in any other species examined.

The male aedeagus is long and slender, and of even width, only expanding somewhat before the apex; on either side at this point, there arises a rounded flange, which is covered with small spicules. The claspers are less than one-third the length of the aedeagus; they are of a smooth leaf-like shape, and arise from a broader base.

Holotype ♂, DUTCH NEW GUINEA: Snow Mountains, Upper Setekwa River, 2-3000', vii.1910 (*A. S. Meek*), B.M. Type No. Rh. 16863.

Allotype ♀, as holotype, B.M. Type No. Rh. 16864.

Other material, DUTCH NEW GUINEA: as holotype, 2 ♂, 1 ♀; Near Oetakwa River, up to 3500', x-xii.1910 (*A. S. Meek*), 1 ♂, 3 ♀; Utakwa river, Base Camp, i.1913 (*A. S. Meek*), 1 ♂, 1 ♀; Mount Goliath, 5000', iii.1911 (*A. S. Meek*), 1 ♀; Andai, Dorey Bay, 1882 (*W. Doherty*), 1 ♂.

***Philiris satis* sp. n.**

(Pl. 4, fig. 158. Text-fig. 115)

The length of the fore wing in both sexes is 15 mm. On the upper side the male is shining purple; the veins are scaled black. It differs from *ilias* and other allied species in possessing on all wings a wide (2 mm.) blackish marginal band of approximately the same width throughout. A similar but narrower band extends along the costa of the fore wing. On the hind wing the costa and outer part of area 6 is clouded with greyish white, due to a scattering of whitish scales. The female is sooty brown, with a large rounded white spot in the disc of the fore wing, and grey-blue scaling in the basal third of area 1. Beneath in both sexes, the satin white ground is only broken by the darkened fringes, and the hind marginal spot on the hind wing.

The male claspers are broad at the base, narrowing sharply to half their length, and styliform from there to the apex.

Holotype ♂, D'ENTRECASTEAUX ISLANDS: Goodenough Island, 2500-4000', v.1913 (*A. S. Meek*), B.M. Type No. Rh. 16865.

Allotype ♀, as holotype, B.M. Type No. Rh. 16866.

***Philiris ilias* (Felder)**

(Text-figs. 14 and 116)

Thecla ilias Felder, 1860: 454, Amboina (Type!).

Candalides ilias (Felder) Grünberg (in Seitz), 1921: 853 (part).

Grünberg when he gave the distribution "Amboina, Aru, Bismarck Archipelago (New Pomerania, New Lauenburg), Queensland, New South Wales," was undoubtedly

dealing with a mixture of several species, his reference to variation in the whitish blue marking in the females tending to confirm this. The B.M. series comes only from the Moluccas, and it must be presumed that the range of the species does not extend beyond those islands. In this restricted sense, the females show conformity in appearance, being dingy brown, with a large metallic blue area on the fore wing, and a bluish smear basally on the hind wing. In the male the aedeagus is characterized by the long line of strong cornuti in the vesica.

Distribution, MOLUCCAS : Amboina ; Ceram ; Buru ; Saparoea ; Watubela.

Philiris subovata (Grose-Smith)
(Text-fig. 117)

Holochila subovata Grose-Smith, 1894 : 579, Humboldt Bay (Type !).

Holochila subovata Grose-Smith ; Grose-Smith, 1899, pl. (Or. Lyc.) 20, figs. 10-13.

Closely related to *P. ilias*, but the male claspers are distinctly shorter ; the cornuti within the vesica are weak, and form a compact bunch ; whereas those of *ilias* are strong and are arranged longitudinally in an extended line. The female is distinguished by the fore wing discal spot being distinctly whitish.

Distribution, NEW GUINEA : Humboldt Bay, ix-x.1892 (*W. Doherty*), 1 ♂, 1 ♀ (holotype and allotype) ; Dorey (*W. Doherty*), 7 ♂, 1 ♀ ; Dorey (*Pratt Bros.*), 1 ♂ ; Kapaur (*W. Doherty*), 4 ♂, 3 ♀ ; Arfak Mountains, Mount Siwi (*E. Mayr*), 1 ♂ ; Ninay Valley, xi-i.1908-9 (*A. E. Pratt*), 1 ♂ ; Fak Fak (*E. H. Pratt*), 1 ♂ ; Weyland Mountains, Dewaro Village, 3500', vi.1920 (*Pratt Bros.*), 2 ♀ ; Aroa River (*A. S. Meek*), 2 ♂.

***Philiris oreas* sp. n.**
(Pl. 4, fig. 162. Text-fig. 118)

The length of the male fore wing is 15 mm. That sex is above very like *ilias* and *subovata*, but can be distinguished by the much wider dark margins on all wings, that of the fore wing extending to 4 mm. at the apex, and tapering to 1 mm. at the hind angle. Greyish white scaling brightens the costa on the hind wing. A further distinguishing character is furnished by an additional spot in the fuscous spotted fringe of the hind wing ; this spot is situated between those at the terminations of veins 1 and 2. The underside is like that of *ilias*.

The male claspers are short and triangular, and the vesica is without cornuti.

Holotype ♂, DUTCH NEW GUINEA : Snow Mountains, Upper Setekwa River, 2-3000', vii.1910 (*A. S. Meek*), B.M. Type No. Rh. 16867.

Other material, NEW GUINEA : Eilanden River, xii.1910 (*A. S. Meek*), 2 ♂ ; Mount Goliath, 5000', iii.1911 (*A. S. Meek*), 1 ♂ ; Schouten Islands, Biak, vi.1914 (*Pratt Bros.*), 1 ♂.

***Philiris kapaura* sp. n.**
(Pl. 4, fig. 157. Text-fig. 119)

The male is above mauve-purple with a faint lustre ; the costa of the fore wing, and the distal margins of all wings are widely (1-2 mm.) brown-black, except in the apical area of the fore wing, where the black extends to a width of 5 mm. In length, the fore wing in both sexes

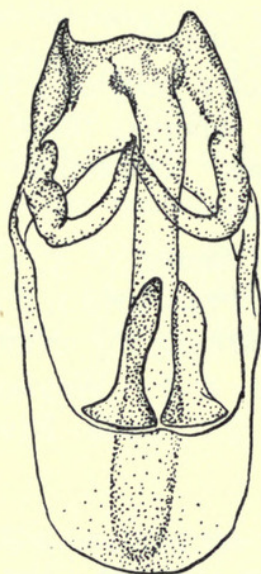
measures from 12 to 13 mm. In the female the ground colour is dusky brown with, on the fore wing, a white central spot, and a bluish area in the base of cellule 1, as in *subovata*; the hind wing is dusky brown with a whitish shade along the costa. Beneath, the ground is creamy white, with a faint brownish tone, quite unlike the more definite white of *ilias*.

The male claspers are short and triangular; the vesica is without cornuti.

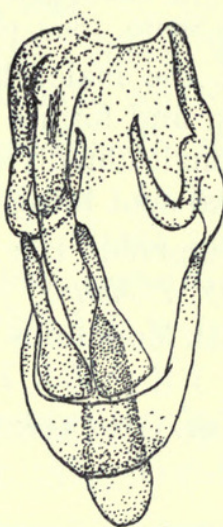
Holotype ♂, DUTCH NEW GUINEA: Kapaur, 1897 (*W. Doherty*), B.M. Type No. Rh. 16868.

Allotype ♀, as holotype, 1896, B.M. Type No. Rh. 16869.

Other material, DUTCH NEW GUINEA: Kapaur (*W. Doherty*), 2 ♂, 2 ♀; Arfak Mountains, Mount Siwi, v.1928 (*E. Mayr*), 1 ♂, 1 ♀.



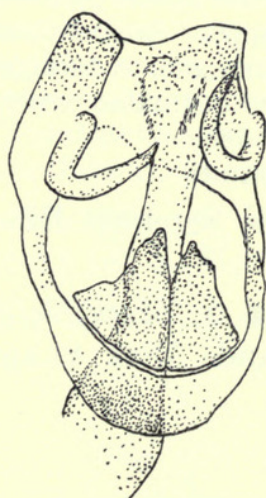
114



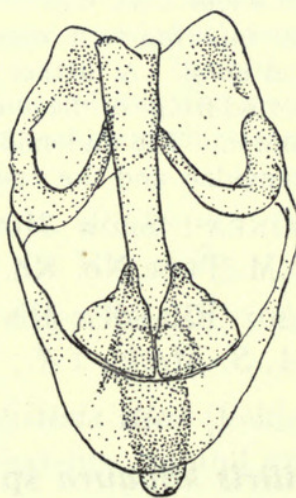
115



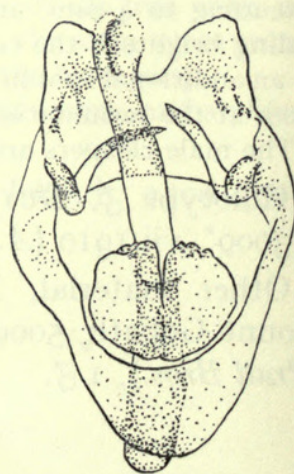
116



117



118



119

FIGS. 114-119. ♂ genital armature: 114, *Philiris albihumerata*; 115, *P. satis*; 116, *P. ilias*; 117, *P. subovata*; 118, *P. oreas*; 119, *P. kapaura*.

The species listed below were included in *Candalides* by Grünberg (in Seitz) and by some subsequent authors. All possess hairy eyes, and their male genitalia exhibit a simple uncus without subuncal hooks, whereas the *Candalides* group have smooth eyes and well developed subunci. *Holochila blackburni* Tuely has already been removed to the genus *Vaga* Zimmerman; the others cannot be retained in the group, and the following assignment is suggested:

***Vaga blackburni* (Tuely)**

Holochila blackburni Tuely, 1878 : 9, Sandwich Islands.

Vaga blackburni (Tuely) Zimmerman, 1958 : 491.

***Celastrina owgarra* (Bethune-Baker) comb. n.**

Holochila owgarra Bethune-Baker, 1906 : 100, Owgarra (Type !).

Parelodina mima Joicey & Talbot, 1916 : 81, Wandammen Mountains (Type !), **syn. n.**

***Celastrina meeki* (Bethune-Baker) comb. n.**

(i) ***C. meeki meeki* (Bethune-Baker)**

Candalides meeki Bethune-Baker, 1906 : 101, Owgarra (Type !).

(ii) ***C. meeki arfaki* (Bethune-Baker) comb. n.**

Candalides arfaki Bethune-Baker, 1909 : 184, North New Guinea (Type !).

(iii) ***C. meeki kunupiensis* (Wind & Clench) comb. n.**

Candalides meeki kunupiensis Wind & Clench, 1947 : 3, Weyland Mountains.

Genus? ***zita*** Grose-Smith

Holochila zita Grose-Smith, 1895 : 511, Tenimber (Type !).

Since the only four known specimens of this species are females, it is deemed inadvisable to place them in any known genus at present. Their hairy eyes, and the formation of vein 12 of the fore wing which anastomoses with vein 11 for a short distance, preclude their inclusion in the *Candalides* group of genera.

REFERENCES

- BETHUNE-BAKER, G. T. 1904. New Lepidoptera from British New Guinea. *Novit. Zool.* **11** : 367-329, 3 pls.
 — 1906. New Species of Lycaenidae from British New Guinea. *Ann. Mag. nat. Hist.* (7) **17** : 100-104.
 — 1908. Descriptions of New Species of Butterflies of the Division Rhopalocera from Africa and from New Guinea. *Proc. zool. Soc. Lond.* **1908** : 110-126, 2 pls.
 — 1909. Descriptions of three new Species of Rhopalocera from North New Guinea. *Ann. Mag. nat. Hist.* (8) **4** : 183-185, 2 figs.

- BOISDUVAL, J. B. A. 1832. *Voyage de découvertes de l'Astrolabe*, Entomologie, **1**, 716 pp. Paris.
- BURNS, A. N. 1947. New Geographical Races of Australian Butterflies . . . *Mem. nat. Mus., Melb.* No. **15** : 86-102, 6 pls., 5 maps.
- BUTLER, A. G. 1882. Descriptions of new Species of Lepidoptera chiefly from Duke of York Island and New Britain. *Ann. Mag. nat. Hist.* (5) **10** : 149-160.
- COX, H. R. 1873. Entomological Notes from South Australia. *Entomologist* **6** : 401-402.
- DRUCE, HAMILTON H. 1897. Descriptions of four new species of Lycaenidae from the Eastern Archipelago. *Ann. Mag. nat. Hist.* (6) **19** : 14-16.
- 1904. Descriptions of new Species of Lycaenidae from Borneo and New Guinea. *Ann. Mag. nat. Hist.* (7) **13** : 140-142.
- FABRICIUS, C. 1775. *Systema Entomologiae*, 832 pp. Flensburgi et Lipsiae.
- FELDER, C. 1860. Lepidopterorum Amboinensium. *S. B. Akad. Wiss. Wien* **12** : 473-496.
- 1862. Verzeichniss der von den Naturforschern der k. k. Fregatte Novara (Macrolep.) *Verh. zool.-bot. Ges. Wien* **12** : 473-496.
- GODART, J. B. 1819. *Encyclopédie Méthodique* **9**, 828 pp. Paris.
- GROSE-SMITH, H. 1894. An Account of a Collection of Diurnal Lepidoptera made by Mr. Doherty . . . pt. 3. *Novit. Zool.* **1** : 571-583.
- 1895. Descriptions of new Species of Butterflies, captured by Mr. Doherty in the Islands of the Eastern Archipelago . . . pt. 2. *Novit. Zool.* **2** : 505-514.
- 1897-1902. *Rhopalocera Exotica* **3**, 206 pp., 60 pls. London.
- 1897a. Descriptions of new Species of Butterflies from the Pacific Islands. *Ann. Mag. nat. Hist.* (6) **20** : 515-518.
- 1898a. Descriptions of new Species of Oriental Butterflies. *Novit. Zool.* **5** : 103-110.
- GROSE-SMITH, H. & KIRBY, W. H. 1892-1897. *Rhopalocera Exotica* **2**, 252 pp., 60 pls. London.
- GRÜNBERG, K. 1908-1927. In Seitz, *The Macrolepidoptera of the World* **9**, 1197 pp., 177 pls. Stuttgart.
- GUEST, E. 1882. List of Diurnal Lepidoptera about Balhannah, Co. Adelaide, with descriptions of new or little-known Species. *Trans. roy. Soc. S. Aust.* **5** : 34-37.
- HARRIS, E. J. W. 1952. A new race of the Butterfly, *Candalides josephina* Semper. *N. Qd Nat.* **20** : 33.
- HÜBNER, J. 1806-1819. *Sammlung exotischer Schmetterlinge*. **1**, 213 pls. Augsburg.
- 1816-1826. *Verzeichniss bekannter Schmetterlinge*, 431 pp. Augsburg.
- JOICEY, J. J. & TALBOT, G. 1916. New Lepidoptera from the Schouten Islands. *Trans. ent. Soc. Lond.* **1916** : 65-83, 4 pls.
- 1916a. New Lepidoptera from Dutch New Guinea. *Ann. Mag. nat. Hist.* (8) **17** : 68-90, 4 pls.
- 1917. New Lepidoptera from Waigeu, Dutch New Guinea and Biak. *Ann. Mag. nat. Hist.* (8) **20** : 216-229.
- JORDAN, K. 1930. Some new Butterflies and Moths from Eastern New Guinea. *Novit. Zool.* **35** : 277-287.
- 1930a. Butterflies from the Herzog Mountains, Eastern New Guinea. *Proc. ent. Soc. Lond.* **5** : 56-60.
- LUCAS, T. P. 1890. New Species of Queensland Butterflies. *Proc. roy. Soc. Qd* (1889) **6** : 117-119.
- MEYRICK, E. 1888. Descriptions of new Australian Rhopalocera. *Proc. Linn. Soc. N.S.W.* (2) **2** : 827-834.
- MISKIN, W. H. 1890. Descriptions of hitherto undescribed Australian Lepidoptera (Rhopalocera). *Proc. Linn. Soc. N.S.W.* **5** : 29-43.
- MONTAGUE, P. D. 1914. A report on the Fauna of the Monte Bello Islands. *Proc. zool. Soc. Lond.* **1914** : 625-652.

- OLLIFF, A. S. 1886. A new Butterfly of the Family Lycaenidae from the Blue Mountains. *Proc. Linn. Soc. N.S.W.* **10** : 716-717.
- RILEY, N. D. 1928. Descriptions of two new Lycaenidae in the British Museum. *Entomologist* **61** : 187-188.
- 1930. *Adaluma urumelia* Tindale (1922) = *Candalides wilkinsi* Riley (1928). *Entomologist* **63** : 211-212.
- RÖBER, J. 1886. Neue Tagschmetterlinge der Indo-Australischen Fauna. *Iris* **1** : 45-72.
- 1891. Beitrag zur Kenntniss der Indo-Australischen Lepidopterenfauna. *Tijdschr. Ent.* **34** : 261-334.
- 1926. Lepidopterologisches. *Ent. Mitt.* **15** : 372-377.
- ROSENSTOCK, R. 1885. Notes on Australian Lepidoptera, with Descriptions of new Species. *Ann. Mag. nat. Hist.* (5) **16** : 376-385.
- ROTHSCHILD, HON. W. 1915. *Lepidoptera of the British Ornithologists' Union and Wollaston Expeditions in the Snow Mountains, Southern Dutch New Guinea. Macrolepidoptera*, 182 pp., 2 pls. Tring.
- ROTHSCHILD, LORD. 1915a. On the Lepidoptera in the Tring Museum sent by Mr. A. S. Meek from the Admiralty Islands, Dampier, and Vulcan Islands (continued). *Novit. Zool.* **22** : 387-402.
- SEMPER, G. 1879. Beitrag zur Rhopalocerenfauna von Australien. *J. Mus. Godeffroy*, **5** : 138-194, 2 pls.
- SMALES, M. & LEDWARD, C. P. 1943. Notes on the life Histories of some Lycaenid Butterflies, pt. 2. *Qd Nat.* **12** : 47-52.
- STAUDINGER, O. 1888. *Exotische Schmetterlinge* **1**, 333 pp., 100 pls., Fürth, Bayern.
- SWAINSON, W. 1831-1833. *Zoological Illustrations, or original Figures and Descriptions of new, rare, or interesting Animals . . . 2*. London.
- TEPPER, J. G. O. 1882. The Papilionidae of South Australia. *Trans. roy. Soc. S. Aust.* **4** : 25-36, 2 pls.
- TINDALE, N. B. 1922. On a new Genus and species of Australian Lycaeninae. *Trans. roy. Soc. S. Aust.* **46** : 537-538, 1 pl.
- TUELY, N. C. 1878. Description of a new Species of Butterfly from the Sandwich Islands. *Ent. mon. Mag.* **15** : 9-10.
- WATERHOUSE, G. A. 1902. Notes on Australian Rhopalocera : Lycaenidae. *Proc Linn. Soc. N.S.W.* **27** : 331-342 ; 648-653.
- 1903. Notes on Australian Rhopalocera : Lycaenidae pt. 3. *Proc. Linn. Soc. N.S.W.* **28** : 132-275, 2 pls.
- 1928. Notes on Australian Lycaenidae pt. 6. *Proc. Linn. Soc. N.S.W.* **53** : 401-412.
- 1932. *What Butterfly is That?* 291 pp., 34 pls. Sydney.
- 1942. Notes on Australian Butterflies in the Australian Museum No. 2. *Rec. Aust. Mus.* **21** : 123-125, fig. 1.
- WIND, R. G. & CLENCH, H. K. 1947. New Indo-Australian Lycaenidae (Lepidoptera). *Bull. Brooklyn ent. Soc.* **42** : 1-16.
- ZIMMERMAN, E. C. 1958. *Insects of Hawaii*, **7**, Macrolepidoptera. 542 pp., 423 figs. Honolulu.

INDEX

(Synonyms are shown in *italics*)

- absimilis Felder, *Holochila*, 211
 acasta (Cox), *Erina*, 217
 ADULUMA Tindale, 221
 aequalis (Gross-Smith), *Philiris* *refusa* ssp., 236
 aerata (Montague), *Microscena* *heathi* ssp., 221
 agatha (Gross-Smith), *Philiris*, 230
 albicostalis sp. n. *Philiris*, 249
 albihumerata sp. n. *Philiris*, 252
 albiplaga (Joicey and Talbot), *Philiris*, 231
 alpina (Waterhouse), *Microscena* *heathi* ssp., 221
 amblypodina (Röber), *Philiris* *griseldis* *griseldis* syn., 228
 androdus Miskin, *Holochila* *helenita* syn., 206
 angabunga (Bethune-Baker), *Philiris*, 241
 anita (Semper), *Erina* *acasta* syn., 217
 apicalis sp. n. *Philiris*, 227
 ardosiaea sp. n. *Holochila*, 206
 arfaki (Bethune-Baker), *Celastrina* *meeki* ssp., 255
 ariadne Wind & Clench, *Philiris*, 235
 argenteus (Rothschild), *Philiris*, 239
 aroa (Bethune-Baker), *Philiris* *agatha* syn., 230
 aurelia (Grose-Smith), *Philiris* *griseldis* ssp., 227
 aurelioides Rothschild, *Philiris* *griseldis* ssp., 228
 azula Wind & Clench, *Philiris*, 241
 biaka sp. n. *Holochila*, 205
 bicolorata Wind & Clench, *Philiris* *fulgens* ssp., 242
 birou Wind & Clench, *Philiris* *intensa* ssp., 237
 blackburni (Tuely), *Vaga*, 255
 butleri (Smith & Kirby), *Philiris* *intensa* ssp., 236
 bysos (Boisduval), *Candalides*, 215
 caerulea sp. n., *Philiris*, 226
 CANDALIDES Hübner, 215
 canescens (Miskin), *Erina* *acasta* syn., 217
 cineraceus (Joicey & Talbot), *Philiris* *griseldis* syn., 228
 coerulea (Röber), *Holochila*, 210
 consimilis (Waterhouse), *Holochila*, 213
 cuprea (Röber), *Holochila*, 206
 cyana (Bethune-Baker), *Philiris*, 225
 cyanites (Meyrick), *Erina* *hyacinthina* syn., 216
 CYPROTIDES Gen. n., 213
 cyprotus (Oliff), *Cyprotides*, 213
 diana Waterhouse & Lyell, *Philiris*, 235
 dimorpha (Röber), *Holochila*, 206
 dinawa (Bethune-Baker), *Philiris*, 245
 doddi (Burns), *Microscena* *heathi* ssp., 221
 doreia sp. n., *Holochila* *coerulea*, 210
 doreia sp. n., *Philiris*, 249
 dubitata (Smith & Kirby), *Philiris* *griseldis* ssp., 228
 elegans sp. n., *Philiris*, 234
 ERINA Swainson, 216
 erina (Fabricius), *Erina*, 217
 eugenia (Waterhouse & Lyell), *Erina* *hyacinthina* ssp., 217
 evinculis Wind & Clench, *Philiris* *innotatus* ssp., 248
 extensa ssp. n., *Philiris* *sublutea*, 226
 fulgens (Smith & Kirby), 242
 gilberti (Waterhouse), *Holochila*, 205
 gisella (Staudinger), *Philiris* *griseldis* ssp., 227
 gloriosa (Bethune-Baker), *Philiris*, 232
 goliathensis sp. n., *Philiris*, 250
 grandis (Grose-Smith), *Philiris* *griseldis* *gisella* syn., 227
 grandis (Bethune-Baker), *Holochila* *grandissima* syn., 211
 grandissima (Bethune-Baker), *Holochila*, 211
 griseldis (Staudinger), *Philiris*, 227, 228
 harterti (Grose-Smith), *Philiris*, 230
 heathi (Cox), *Microscena*, 221
 helenita Semper, *Holochila*, 206
 hemileuca Jordan, *Philiris*, 226
 HOLOCHILA Felder, 202
 hubnerii (Godart), *Candalides* *xanthospilos* syn., 215
 hyacinthina (Semper), *Erina*, 217
 hypoxantha (Röber), *Philiris*, 226
 ianthina sp. n., *Philiris*, 229
 ignobilis (Joicey & Talbot), *Philiris*, 249
 ilias Felder, *Philiris*, 252
 innotatus (Miskin), *Philiris*, 247
 intensa (Butler), *Philiris*, 237
 josephina (Harris), *Erina* *hyacinthina* var., 217
 kamerungae Waterhouse, *Philiris*, 240
 kapaura sp. n., *Philiris*, 253

- kumusiensis* sp. n., *Philiris*, 239
kunupiensis (Wind & Clench), *Celastrina*
meeki ssp., 255
kurandae Waterhouse, *Philiris fulgens* ssp.,
 242
lamia Grose-Smith, *Holochila*, 208
lavendula sp. n., *Philiris*, 234
leucoma ssp. n., *Philiris harterti*, 231
limbata sp. n., *Holochila*, 207
lucescens sp. n., *Philiris*, 247
lucina Waterhouse & Lyell, *Philiris*
kamerungae ssp., 240
margarita Semper, *Holochila*, 204
marginata (Grose-Smith), *Philiris*, 249
maria (Bethune-Baker), *Holochila*, 205
mayri Wind & Clench, *Philiris*, 243
meeki (Bethune-Baker), *Celastrina*, 255
meforensis sp. n., *Holochila*, 207
melanacra ssp. n., *Philiris ziska*, 245
melanoma ssp. n., *Philiris harterti*, 231
MICROSCENA gen. n., 219
mima (Joicey & Talbot), *Celastrina owgarra*
 syn., 255
misimensis Wind & Clench, *Philiris*, 244
mneia Druce, *Philiris griseldis* *gisella* syn.,
 227
moerens (Rosenstock), *Erina acasta* syn., 217
moira Grose-Smith, *Philiris*, 248
moluccana sp. n., *Philiris*, 242
montigena sp. n., *Philiris*, 230
morobea (Wind & Clench), *Holochila*
grandissima ssp., 211
neurapacuna (Bethune-Baker), *Holochila*,
 209
nitens (Grose-Smith), *Philiris*, 240
obiana sp. n., *Philiris*, 229
oreas sp. n., *Philiris*, 253
owgarra (Bethune-Baker), *Celastrina*, 255
pallescens ssp. n., *Cyprotides cyprotus*, 215
papuanus Wind & Clench, *Philiris diana* ssp.,
 235
paradoxa (Guest), *Microscena heathi* syn.,
 221
parvifascia (Rothschild), *Philiris griseldis*
 syn., 228
persimilis (Waterhouse), *Holochila*, 213
phengotes sp. n., *Philiris*, 244
PHILIRIS Röber, 222
philotas (Felder), *Philiris*, 229
philotoides sp. n., *Philiris*, 229
praeclara sp. n., *Philiris*, 232
pratti (Bethune-Baker), *Philiris ziska* syn.,
 243
pruina (Druce), *Holochila*, 208
pulchella (Swainson), *Candalides xanthospilos*
 syn., 215
purpurea (Grose-Smith & Kirby), *Cyprotides*
cyprotus syn., 213
putih Wind & Clench, *Philiris moira* ssp., 249
refusa (Grose-Smith), *Philiris*, 236
regina (Butler), 237
remissa sp. n., *Philiris*, 242
restricta ssp. n., *Philiris nitens*, 241
riuensis sp. n., *Philiris*, 248
riuensis sp. n., *Holochila*, 208
satis sp. n., *Philiris*, 252
septentrionalis Joicey & Talbot, *Philiris*
fulgens ssp., 242
silicea Grose-Smith, *Holochila*, 207
simplexa (Tepper), *Erina hyacinthina* ssp.,
 216
speirion Druce, *Philiris griseldis* ssp., 228
stevensi Wind & Clench, *Erina erina*
 ssp., 219
subargentea Smith & Kirby, *Holochila*
helenita syn., 206
sublutea (Bethune-Baker), *Philiris*, 225
subovata (Grose-Smith), *Philiris*, 253
subpallidus Lucas, *Erina erina* syn., 217
subrosea Grose-Smith, *Holochila coerulea*
 ssp., 210
sudesta ssp. n., *Erina erina*, 219
sumbensis ssp. n., *Erina erina*, 218
taamensis ssp. n., *Erina erina*, 218
tenimberensis ssp. n., *Erina erina*, 219
theleos Druce, *Philiris philotas* syn., 229
timorensis ssp. n., *Erina erina*, 218
tombara sp. n., *Philiris*, 244
tringa Grose-Smith, *Holochila*, 205
tualensis (Röber), *Erina erina* ssp., 218
unipunctata (Bethune-Baker), *Philiris*, 235
urumelia Tindale, *Adaluma*, 222
vicina (Grose-Smith), *Philiris*, 250
violetta (Röber), *Philiris*, 225
viriditincta sp. n., *Holochila*, 209
wilkinsi Riley, *Adaluma urumelia* syn., 222
xanthospilos (Hübner), *Candalides*, 215
zadne (Grose-Smith), *Philiris*, 239
ziska (Smith & Kirby), *Philiris*, 243
zita (Grose-Smith), gen. n., 255



Tite, Gerald Edward. 1963. "A revision of the genus *Candalides* and allied genera (Lepidoptera; Lycaenidae)." *Bulletin of the British Museum (Natural History) Entomology* 14, 199–259. <https://doi.org/10.5962/bhl.part.8783>.

View This Item Online: <https://www.biodiversitylibrary.org/item/19401>

DOI: <https://doi.org/10.5962/bhl.part.8783>

Permalink: <https://www.biodiversitylibrary.org/partpdf/8783>

Holding Institution

Natural History Museum Library, London

Sponsored by

Natural History Museum Library, London

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: The Trustees of the Natural History Museum, London

License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <http://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.