NEW OR LITTLE KNOWN BUTTERFLIES FROM MALAYA

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THE present paper is an attempt to bring up to date the Synonymic List of Malayan Butterflies in Corbet's & Pendlebury's *The Butterflies of the Malay Peninsula*, 2nd Edition, 1956.

Certain additions and amendments to the Malayan list have already been, or are

being, published in the following papers:

Howarth, T. G. (1956). A new species of butterfly of the genus *Niphanda* (Lep. Lycaenidae) from Malaya. *Entom.* 89: 161–162.

Evans, W. H. (1956). Revisional Notes on the Hesperiidae of Europe, Asia and Australia. Ann. Mag. nat. Hist. 12 (IX): 749-752.

—— (1957). A Revision of the Arhopala group of Oriental Lycaenidae. Bull. Brit. Mus. (nat. Hist.) Entomology 5 (3): 85-141.

Eliot, J. N. (1956). New and little known Rhopalocera from the Oriental Region.

Bull. Raffles Mus. 27: 32-37.

— (1957). Notes on the genus Poritia Moore. Entom. 90: 70-74.

—— (1958). An analysis of the genus *Miletus* (Hübner). *Bull. Raffles Mus.* **29** (in press).

Cowan, C. F. Some new and interesting butterflies recorded from Malaya. *Malayan Nat. J.* (in press).

The further records which follow result partly from an examination of the collections of Messrs. G. C. Stubbs, J. A. Hislop and C. K. Kemp, and I am most grateful to these gentlemen for allowing me to extract interesting specimens for presentation to the British Museum (Natural History)—referred to hereafter as B.M. I have not attempted to include any butterflies from Tioman Island, whence Mr. Stubbs has recently been amassing a large and most interesting collection which certainly contains a few species and many subspecies new to the Malayan list.

I am also grateful to the authorities of the B.M. for facilities, including the loan of material, and to Major C. F. Cowan, R.A. for advice and taking the photographs

in the plate.

Corbet & Pendlebury listed 898 species reliably recorded from Malaya. The present additions (including those recorded in the papers above) bring the total to 947. It is certain that many more species, especially among the Lycaenidae and Hesperiidae, still await discovery.

The types of all new species, subspecies and forms described below have been

deposited in the B.M.

The following abbreviations have been used: F = fore wing, H = hind wing, Up = upperside, Un = underside, V = vein.

PAPILIONIDAE

1. Trogonoptera brookiana trogon (Voll., 1860)

I have recently been shown a series of both sexes taken in Western Trengganu by Mr. Leonard of the Game Department. This Sumatran subsp. also occurs in Johore. The subsp. albescens Rothsch., 1895, does not appear to have been taken anywhere away from the central range of mountains.

2. Chilasa paradoxa aenigma Q f. leucothoides (Honr., 1891) (= penomimus (Mart., 1895))

This form, which is a passable mimic of *Euploea eyndhovii* Feld., has already been recorded from Singapore by Morrell (*Malayan Nat. J.* 11 (4):96). I have seen a further example from the mainland: Trengganu, Jerangau, 16.iii.1956 (*G.C. Stubbs*).

SATYRIDAE

3. Ypthima pandocus tahanensis Pend., 1933

This insect, in its small size and reddish-brown colour of the striations of the Un, shows a remarkable similarity to *Ypthima nigricans* Snell. an apparently distinct species occurring in Java and Bali and also in Celebes (subsp. ancus Fruh.). Examination of the 3 genitalia of a small number of nigricans from Bali and Celebes and I 3 tahanensis kindly given me by Mr. J. A. Hislop reveal further similarities—namely all have a slightly thinner and longer uncus and broader clasp than the corresponding pandocus subspecies.

I have recently heard from Mr. G. C. Stubbs, who writes: "I have a short series of tahanensis collected on 28 and 29 May this year. There are 8 specimens of normal tahanensis, and in addition there are 3 quite normal but rather small Y. pandocus corticaria from the same locality, the padang area, about 5500 ft, on Gunong Tahan. There are no intermediates. Another difference not mentioned in Cbt. & Pend. is the different shape of the wings. This is very noticeable; pandocus has round wings, and those of tahanensis are quite angular in comparison. This, I think, confirms your suggestion that tahanensis should be referred to nigricans, or at least not to pandocus."

In the only two examples of *tahanensis* available to me the apex F is more acute, the tornus more obtuse and the termen straighter than in *corticaria*. These differences are, however, hardly noticeable in examples of *pandocus* and *nigricans* from Java and Celebes, where both species have more the wing shape of *tahanensis*. In the circumstances I think it is reasonable to detach *tahanensis* from *pandocus* and to refer it as a subsp. to *nigricans*.

It may be significant that the only other apparently isolated mountain population of pandocus known to me, namely that occurring at the summit of Mt. Ophir in Johore, is distinguished by very large size though not otherwise differing from corticaria.

NYMPHALIDAE

4. Argyreus hyperbius sumatrensis (Fruh., 1912)

3 Pahang, Tanah Rata, 4,500 ft., 4.vii.1957 (J. N. Eliot). New to Malaya. I believe that another example of this species was caught in the Cameron Highlands by Mr. M. J. V. Miller at an earlier date.

5. Chersonesia nicévillei Mart., 1895

The record and fig. of "C. intermedia" in Cbt. & Pend., 1956 (Note 20 on p. 477, and pl. 41, fig. 109) are in fact of this very rare species, which is not otherwise known to occur outside Sumatra.

6. Chersonesia intermedia intermedia Mart., 1895

(Pl. 10, fig. 5)

Cbt. & Pend. failed to recognize this species, which is by no means rare in Malaya. Superficially it is rather similar to the common *C. rahria* Mre., from which it differs in the following respects: it is smaller (F usually 15–19 mm. against 19–22 mm.); on Up the sub-basal bands are broader and contrast more strongly with the ground colour; at the apex UpF there is no diffuse dark line, as in *rahria*, running from the submarginal dark line at a point about 2 mm. below the apex almost to a point on the costa about the same distance from the apex. The 3 genitalia show considerable differences (see Text-fig. 1).

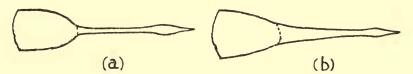


Fig. 1. Uncus and tegumen (dorsal view) of: (a) Chersonesia intermedia Mart. (Malaya), (b) C. rahria (Mre.) (Malaya).

C. intermedia, both in its nominotypical subsp. and the Burmese subsp. rahrioides Mre., is remarkable for the frequency with which pale dwarf specimens, with F as little as 12 mm., occur.

7. Neptis sandaka (Btlr., 1892)

The oldest name for the "form" of Neptis hordonia (Stoll) with the "light male mark" (see Cbt. & Pend., p. 220) is sandaka Btlr. It is undoubtedly a good species, which differs from hordonia in the following additional respects: the ground colour is deeper orange; on UpF the submarginal orange line is conspicuous and much wider than the grey line internal to it (this grey line being always prominent in hordonia); the cilia in spaces 4, 5, 7 and 8 on F are not prominently chequered as in hordonia.

ENTOM. 7, 8.

Butler's original description of sandaka (type in B.M.) is misleading, as he compares it only with N. paraka Btlr.

N. sandaka and N. hordonia occur equally commonly in Malaya, and Malayan examples of the former do not differ from examples from the type locality of Sandakan, N. Borneo. The fig. of "hordonia" in Cbt. & Pend. (pl. 41, fig. 110) is in fact of sandaka.

8. Neptis heliodore (F.) complex

(Pl. 10, figs. 3, 4)

This complex comprises two species, whose relationship recalls that of N. hordonia and N. sandaka.

Roepke (Rhop. Javanica, 3:300 and pl. 31) has drawn attention to most of the superficial and genitalia differences between the two species, viz. the rarer species has a lighter speculum ("male mark") on UpH, has the submarginal orange spot in space 3 on F approximately the same width as those above and below it and, in the 3 genitalia, has a different cornutus (the "radula" of Roepke) comprising a few finger-like spines surmounted by a bunch of much shorter spines. Roepke called the rarer species Neptis siaka Mre., 1881. However the type of siaka is in the B.M., and is a perfectly normal Sumatran example of N. heliodore dorelia Btlr. I therefore propose the name roepkei Nom. N. pro siaka Rpke. nec Mre. for the form of the rarer species occurring in Java.

A distinct subsp. of N. roepkei occurs in Burma:

N. roepkei ioannis subsp. n.

In both sexes differs from Javanese *roepkei* in having wider orange markings; in particular the submarginal orange band on UpH, which is obscure and sullied in the Javanese form, is conspicuous and clear orange. On UnH the dark discal band is narrow, 1.5 mm. wide or less, whereas in the Javanese form this band is almost twice as broad and considerably darker.

Holotype ♂ and allotype ♀ S. Burma, Victoria Point, ii. 1922 (ex Archbald coll.).

A series in B.M. from S. Burma and Siam.

Malayan examples, though showing a slight approach to the Javanese form, hardly differ enough from Burmese examples to merit a further subspecific name. I have seen only I 3 of roepkei from Borneo, which is intermediate between the Burmese and Javanese forms. I have seen no Sumatran examples of roepkei, but it is certain to occur there.

N. roepkei is probably not rare in Malaya, though usually overlooked through its resemblance to the much commoner N. heliodore. I have taken it in Singapore as well as on the mainland. Malayan examples of the two species are not hard to distinguish. In addition to the differences already pointed out, in roepkei the ground colour is deeper orange; the discal band on UnH comprises a pale brownish fascia overlaid near its outer edge by a single comparatively broad dark line, whereas in heliodore dorelia the pale fascia is both inwardly and outwardly defined by narrower

dark lines, the inner of which is lighter, well defined near the costa but fading out as it approaches the dorsum (see Pl. 10, figs. 3, 4). The latter character, however, does not apply to nominotypical *heliodore* from the Langkawi Is., in which the inner dark line is absent.

9. Neptis nandina gononata Btlr., 1877

Most modern authors have misidentified N. nandina Mre., 1857, the type of which (see Lep. Ind. 3:235) is the 3 figured in Hsf. & Mre. (Cat. Lep. E. I. Co., pl. IVa, fig. 7). N. nandina Mre., N. yerburii Btlr. and N. mahendra Mre. all have similar 3 genitalia characterized by having a small sharply-elbowed hook at the distal end of the clasp (see Text-fig. 2), and together form a natural group. The species

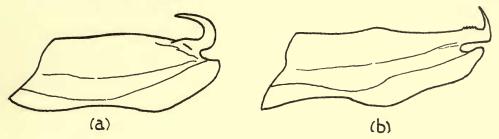


Fig. 2.—Right clasp of: (a) Neptis clinioides Nic. (Malaya), (b) N. nandina gononata Btlr. (Malaya).

erroneously dealt with as "nandina" by Cbt. & Pend. (see below) belong to the N. hylas (L.) group and have a much larger evenly curved hook at the end of the clasp.

10. **Neptis clinia** Mre., 1872 **leuconata** Btlr., 1877 (Pl. 10, fig. 2)

Neptis clinioides Nic., 1894

(Pl. 10, fig. 1)

Cbt. & Pend. confused these two species under "nandina". They differ from each other in the following respects: on F the triangular white spot beyond the cell streak is longer in leuconata; the cilia in space 6 on F are black in both sexes of clinioides, whereas in the $\mathcal Q$ of leuconata they contain a prominent white patch (sometimes faintly discernible in the $\mathcal G$ also); in leuconata the extreme base of the costa on UnF is orange-brown; on H the white discal band is evenly wide and extends into the base of space 3 in leuconata, whereas in clinioides it tapers markedly towards the dorsum and seldom enters the base of space 3.

In contrast to *nandina*, which exhibits marked geographical variation, *clinia* and *clinioides* are rather constant throughout their range. The latter species is confined to Malaysia, and examples from Malaya, Borneo, Java and Bali do not differ sufficiently from examples from the type locality of NE. Sumatra to merit

subspecific rank. In Malaya N. clinioides is common in the hill stations between 2,000 ft. and 5,000 ft. N. clinia prefers lower elevations and I have not caught it above 2,000 ft. Langkawi examples show an approach to the Indian subsp. susruta Mre. in having some of the white markings on Up slightly sullied.

II. Neptis harita Mre., 1874

Corbet (*Proc. R. ent. Soc. Lond.* B, 6 (5): IOI-IO2) at one time considered *harita* to be distinct from *N. vikasi* Hsf., but in Cbt. & Pend. no mention is made of *harita*,

presumably because the two were regarded as conspecific.

In my view harita is undoubtedly a distinct species. There is never the slightest difficulty in distinguishing it from vikasi, and the area of overlap—from Indo-China, Siam and S. Burma to Borneo—is far too great for them to be considered overlapping subspecies. The main superficial differences are as follows: in harita all the pale markings are narrower and more obscure; the post-discal spot in space 2 on UpF is crescentic in harita, more or less quadrate in vikasi; on UpH the 3 speculum is much larger in harita; on UpH and particularly on UnH the dark area between the post-discal and submarginal pale bands is narrow and broken up into catenulate spots between the veins in harita, but is broader and entire in vikasi; on Un the pale markings are more prominently washed with purplish-pink in harita; in the 3 genitalia harita has an unusually large cornutus.

N. harita and N. vikasi omeroda Mre. are equally common in Malaya.

12. Parathyma ranga malaya (Pend., 1933)

The key characters, given in Cbt. & Pend., p. 222, for distinguishing *P. ranga* from *P. abiasa* are applicable to the Indian forms of *ranga*, but not to its Malayan form. Superficially *P. ranga malaya* and *P. abiasa clerica* (Btlr.) are very similar, but they can be separated by *malaya* having white dots on the abdomen. The original description of *malaya* sets out many other minor points of difference (*J. F.M.S. Mus.* 17:395–396).

Both species are most often seen on exposed hill-tops, though both also occur rarely at low elevations.

LYCAENIDAE

13. Allotinus fallax michaelis subsp. n.

(Pl. 10, figs. 8, 9)

3 nearest to the Bornean subsp. audax H. H. Drc., 1895, from which it differs, in having a unicolorous UpH (in vudax the UpH is always paler and usually whitish on the disc).

Q differs from audax Q in having a narrower and more clearly defined white patch on UpH.

Holotype ♂ Selangor, Ginting Sempak, 1,500 ft., 20.i.1957 (J. N. Eliot), allotype ♀ Pahang, above Ginting Sempak, 2,800 ft., 14.vii.1957 (J. N. Eliot).

14. Allotinus davidis sp. n.

(Pl. 10, figs. 6, 7)

Nearest to A. nivalis substrigosa (Mre., 1884), which it resembles in size and in having the discal spot mid-space 7 on UnH darkened.

3 differs from *substrigosa* in the following respects: on Up the ground colour is more reddish-brown; on UpF the swollen portion of V 4 extends for one-quarter of the total length of the V compared with more than one-third in *substrigosa*; on Un the ground colour is pale buff, not white as in *substrigosa*; on UnF there is no prominent white dash at the apex; on UnH the postdiscal spot in space 7 is narrowly darkened inwardly, this spot never being darkened at all in *substrigosa*. The genitalia also differ, notably in the clasp which tapers to a fine incurved point (see Text-fig. 3).



Fig. 3.—Right clasp of: (a) Allotinus nivalis substrigosa (Mre.) (Malaya), (b) A. davidis sp. n. (Malaya).

Q apart from the swelling of V 4 on UpF, differs from substrigosa Q in the same respects as the Z.

Holotype \Im and allotype \Im Singapore, 17–18.vi.1953 (J. N. Eliot). \Im paratype from S. Johore in my coll.

15. Niphanda marcia (Fawc., 1904)

♂ Pahang, Fraser's Hill, Bukit Kemalau, 4,000 ft., 17.viii.1957 (J. N. Eliot). New to Malaya.

N. tessellata Mre. and N. stubbsi Howarth occur on the same hill-top. The antennal club of N. marcia is cylindrical, of N. tessellata flattened, and there are several other points of difference between these two purple species.

16. Curetis freda sp. n.

(Pl. 10, fig. 10)

Two perfectly distinct and superficially easily recognized species have hitherto been confused under *C. insularis* Hsf., 1829. I am at a loss to understand how the second species has escaped detection for so long.

3 differs from *insularis* in having the black border on UpF evenly rounded and inwardly rather diffuse, not, or hardly, running in along the veins (in *insularis* the inner edge is more sharply defined, is angled just beyond end-cell and, in examples from Malaya, Sumatra and Borneo (subsp. *pseudoinsularis* Fruh., 1908)

= tagalina Fruh., 1908), runs inwards for 1-2 mm. along Vs 1, 2 and 3). On UnH the series of discal striae are continuous from V 8 to V 1b in freda, whereas in insularis the stria in space 1b is always shifted in about 1-1.5 mm. Genitalia differ as in Text-fig. 4.

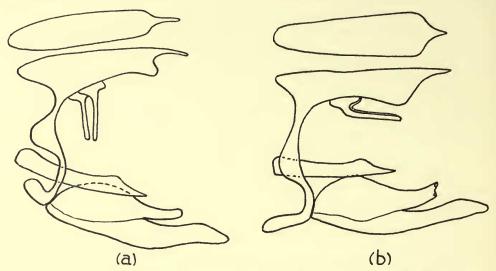


Fig. 4. Dorsal view of uncus and tegumen (above) and lateral view of genitalia (left clasp removed) of: (a) Curetis freda sp. n. (Malaya), (b) C. insularis pseudoinsularis Fruh, (Malaya).

 $\[\]$ on Up resembles *insularis* $\[\]$, from which it differs on Un exactly as in the $\[\]$. Holotype $\[\]$ Perak, vii–viii. 1895 (*Lakatt & Pamboo*). Allotype $\[\]$ Malay Peninsula (ex *Adams* coll.).

B.M. has a very large series of *insularis* from S. Burma, Malaya, Sumatra, Borneo, Banka and Java. The series of *freda* is smaller, and there are no examples from S. Burma, Banka and Java. In my experience *freda* is commoner in Malaya than *insularis*.

17. Amblypodia anita anita Hew., 1862

♂ Pahang, Kuala Rompin, 4. viii. 1953 (J. A. Hislop). Hitherto known in Malaya only from Perlis.

18. Narathura varro selama subsp. n.

♀ Up rather bright sky blue, not bluish-white as in subsp. varro (Fruh., 1913) from Burma. On UpF the black border is 2 mm. wide at V 1, widening to 3 mm. at V 6, whence it extends along the costa to the base with a tooth running into the cell along the dcv. There are two small black spots contiguous with the black border in spaces 4 and 5. On UpH the black border is 2 mm. wide throughout and inwardly rather diffuse. On Un the ground colour is hair-brown; the markings, arranged as

in varro, are large, hardly darker than the ground colour and prominently outlined whitish. At mid-termen F and H there is a slight reddish-brown suffusion. There is no whitish streak in space 6 on UnH as in subsp. varro. F 21.5 mm.

3 Up similar to varro 3. Un similar to the Q. F 19.5 mm.

Holotype ♀ Perak, Ulu Selama, 1,000 ft., 19.i.1957 (J. A. Hislop). Allotype ♂

Selangor, Ulu Langat, 9.iv.1933 (G. C. Stubbs).

As the δ is in very worn condition I have made the Q the holotype. Mr. Hislop tells me that he found it sitting freshly emerged in a rhinoceros's footprint which he had bent down to measure, and caught it in his fingers!

N. varro and N. johoreana Cbt. both have a rather short H tail (about 2 mm. long). The other members of the camdeo (Mre.) group all have a tail twice as long.

19. Narathura athada athada (Stgr., 1889)

Three of from Pulo Tenggol, a small island off the coast of Trengganu, taken by Mr. G. C. Stubbs, have the Un purple-washed as in the Burmese subsp. apha (Nic.), though hardly differing from normal Malayan specimens on Up.

20. Narathura azinis azinis (Nic., 1896)

♀ Pahang, Gunong Batu Brinchang, 6,600 ft., 7.vii.1957 (J. N. Eliot). New to Malaya.

A strong wind was blowing when this specimen was captured, and it had probably been wind-borne above its normal altitude. A \bigcirc *Aurea trogon* caught nearby at the same time must also have been wind-borne.

21. Narathura aurelia (Evans, 1925)

♂ Perlis, Kangar, 22.ix.1957 (J. N. Eliot). New to Malaya. The black border on UpF is slightly narrower than in Burmese examples.

22. Narathura pseudomuta (Stgr., 1889) complex

I did not think that Evans's treatment of this complex in his recent revision of the Arhopala group of genera (Bull. Brit. Mus. (nat. Hist.) Entom. 5 (3): 85-141) was correct, and tried in vain to make him alter it. At the time there was limited Malayan material available. Since then I have seen more material in the collections of Messrs. Stubbs and Hislop, and caught more myself, and I am convinced that the Indo-Malayan forms dealt with by Evans under mindanensis and pseudomuta comprise three species.

Evans followed Corbet in adopting as a main key character the presence or absence of a spot at the base of space 10 on UnF. This character is very inconstant, and examples in which the spot is present on one fore wing and not on the other are frequent. It can only be used as a subsidiary character.

In my view the three species are as follows:

(a) N. ariana (Evans, 1925) with subspp. ariana Tavoy and arianaga (Cbt., 1941) Malaya.

(b) N. elopura (H. H. Drc., 1894) with subspp. dama (Swinh., 1910) Mergui also Kedawi and elopura Borneo also Malaya and Sumatra. Examples from Penang are intermediate.

(c) N. pseudomuta (Stgr., 1889) with subspp. ariavana (Cbt., 1941) Langkawi Is., pseudomuta (= rafflesii (Nic., 1890), epibata (Cbt., 1948) SYN. N.) Malaya

and contra Evans, 1957, Borneo also Sumatra.

N. ariana is the largest species, the F is slightly produced, and in the \Im of subsp. arianaga the black border F is a thread and space 6 on UpH is all blue. On Un the markings are considerably darker than the ground colour, which is faintly suffused with pink. There is never a spot at the base of space 10 on UnF. In Malaya proper it occurs only in the mountains, but in Kedawi it occurs in the plains.

N. elopura has more quadrate wings with the apex F rounded. On UpF the black border is a thread in subsp. elopura, and about I mm. wide in subsp. dama. On UpH space 6 is more than one-half blue in subsp. elopura. On the hair-brown Un the markings are barely darker than the ground colour. There is never a spot at

the base of space 10 on UnF.

N. pseudomuta has more elongate wings; the black border F is wider than in corresponding elopura forms, being I mm. in pseudomuta and about I·25 mm. in ariavana; space 6 on UpH is more than one-half black; on Un there is occasionally a faint purple glaze in pseudomuta and a pronounced glaze in ariavana. The spot at the base of space IO may be present or absent. It is present in the type of epibata, absent in the types of rafflesii and ariavana (though present in an otherwise similar specimen of ariavana from Langkawi).

I think mindanensis (B. B., 1903) from the Philippines is best regarded as a distinct

species, though it may be a subsp. of pseudomuta.

I am by no means certain that *pseudomuta* of Staudinger, of which the type, I understand, was lost during the last war, is in fact the same species as that which I call by this name. However it seems best not to alter Evans's use of this name and thereby add to the confusion which already surrounds it (see Evans, 1957, Appx. 5).

23. Narathura alaconia media Evans, 1957

I have seen a \mathcal{P} of this normally tailless species (Langkawi Is., xii.1956–i.1957 (C. K. Kemp)), which has a H tail 2.5 mm. long. In all other respects it is indistinguishable from normal *media*. It deserves a name, and I propose *kempi* F. N. after its captor.

It works out as *N. alesia* on Evans's key, but it differs from that species in having the outer edge of the discal spot in space 6 on UnH concave—this spot being convex in *alesia*.

24. Panchala elizabethae sp. n.

(Pl. 10, fig. 12)

3 nearest to P. ariel Doh., 1891, from which it differs in the following respects: on Up the black border is slightly wider—2 mm. at tornus F expanding to 5 mm. at the apex and nearly 3 mm. on H. The ground colour is bright shining blue, which

contrasts strikingly with the non-shining purple of *ariel*. On Un the ground colour has a stronger and more shining purplish glaze, and the markings and tornal metallic scaling on H are arranged as in *ariel*. Genitalia identical with *ariel*, except that the dorsal hooks are slightly longer and thinner.

Holotype of Pahang, Raub, 19.v.1937 (J. N. Eliot). Damaged and tails broken off. I have seen another of from Pahang, Chegar Perah, 8.v.1934 (G. C. Stubbs), in which the space between the two discal spots in space 7 on UnH is partly filled in with white, resembling P. ammonides Doh. in this respect.

25. Pratapa sannio ricardi subsp. n.

(Pl. 10, fig. 11)

3 Up ground colour brighter and more silvery blue than subsp. sannio H. H. Drc. 1895 from Borneo (known to me only from the 3 type and original description), with the black border slightly narrower at the tornus F. On Un the white discal band is straighter and twice as wide (about 1.5 mm.) and on H the tornal orange area is more than twice as large, reaching the postdiscal striae in spaces 1b and 2.

♀ on Up the black border is a little wider than in the ♂ and there is a white fleck

at end-cell F. Un resembles the 3.

Holotype 3-and allotype 9 Pahang, Gunong Batu Brinchang, 6,600 ft., 5–7. vii. 1957 (*J. N. Eliot*). 4 3, 5 9 paratypes from Fraser's Hill in my coll. Further 33 seen in coll. G. C. Stubbs.

P. sannio has hitherto been known with certainty only from Borneo and Nias, but records of P. cotys Hew. from Sumatra probably apply to this species. Cbt. & Pend. (p. 338) evidently regarded sannio as a subsp. of the Celebesian P. anysis Hew. However the $\mathcal J$ genitalia differ far too much for conspecificity to be possible. The same applies to P. cotys Hew., a further species from India and Burma with subsp. cremera (Nic.) from Java.

26. Pratapa luculentus taorana (Cbt., 1940)

Corbet described *taorana* from a single very battered \mathcal{P} and placed it as a subsp. of P. illurgioides (Nic., 1890). However it is marked on Un as P. luculentus (Leech), not as P. illurgioides. A further very fresh \mathcal{P} taorana from Pahang (Cameron Highlands) in my coll. exactly matches a \mathcal{F} luculentus from the same locality. P. illurgioides should therefore be deleted from the Malayan list.

27. Jacoona fabronia lina subsp. n.

3 differs from subsp. fabronia (Hew., 1878) from India and Burma in having the UpH all blue to mid-space 5 except for a white marginal line 1 mm. wide in spaces 1a and 1b and just entering 2 (in fabronia the tornal white area is wide and diffuse, covering nearly one-quarter of the H). In addition there are no black tornal spots on UpH, such as are prominent in fabronia. Un as fabronia. F 16 mm.

Holotype & Pahang, Gunong Batu Brinchang, 6,600 ft., 7. vii. 1957 (J. N. Eliot).

There is a similar of in coll. Hislop (Pahang, Fraser's Hill, 24. vi. 1953).

I have also seen $2\$ $\$ from Fraser's Hill in coll. Stubbs which differ from *fabronia* $\$ $\$ in possessing a narrow straight white discal band on UpH running from the costa to the tornal white area at V 4. Occasionally Burmese $\$ $\$ $\$ have this band faintly indicated.

28. Ticherra acte liviana Fruh., 1912

Occurs quite commonly on either side of the Ginting Sempak pass between Selangor and Pahang from about 800 ft. to 2,000 ft. Hitherto only the nominotypical subsp. has been recorded in Malaya from Perlis, but in fact Perlis examples are intermediate between *acte* and *liviana*.

29. Marmessus scudderii perlisa Riley, 1942

3 Selangor, Pahang Road 16 M.S., 13.iv.1956 (J. A. Hislop). Hitherto only known from Perlis.

30. Marmessus rufotaenia rufotaenia Fruh., 1912

 $\Im \$ Langkawi Is. (G. C. Stubbs) and $\$ Perlis (J. N. Eliot) have a small orange patch on UpF, thus showing an approach to the Burmese subsp. archbaldi Evans. Hitherto the species has not been known to occur in Malaya outside Singapore Is.

31. Artipe eryx excellens subsp. n.

3 larger than nominotypical eryx (L., 1771) from China (F 21-23.5 mm. as against 15-20 mm.). Up blue ground colour brighter and more extensive, reaching 2-3 mm. beyond cell on F and filling at least half space 6 on H. Black border F narrower, inwardly straight, 1.5 mm. wide at tornus increasing to about 7 mm. at costa. Un deeper, more emerald green.

Holotype & Pahang, Fraser's Hill, 4,000 ft., 19.iv.1957 (J. N. Eliot). Nine &

paratypes in my coll.

A. eryx has an undeserved reputation for extreme rarity in Malaya. Males occur fairly frequently on exposed hill tops, but are apt to be overlooked as they only appear during the last two hours of daylight. They probably also fly for a short time soon after dawn, like some Rapala spp. Indian and Burmese examples of eryx are intermediate between subspp. eryx and excellens.

32. Rapala rhodopis Nic., 1896

Three 3, 6 9 Pahang, Gunong Batu Brinchang, 6,600 ft., vii.1957, and Fraser's Hill, 4,000 ft., viii-ix.1957 (*J. N. Eliot*). Further 33 seen in coll. Stubbs from Fraser's Hill and Kuala Lipis. New to Malaya.

33. Bindahara phocides phocides (F., 1793)

Occasionally Malayan 33 have a bright blue marginal streak in spaces 2 to 4 on UpH, rather as in subsp. moorei Fruh, from Ceylon and S. India,

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34. Choaspes benjaminii formosana Fruh., 1911

Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1949 (J. A. Hislop), 2 Jupper Perak, Telemong, 12. viii. 1955 and Fraser's Hill, 16. viii. 1951 (G. C. Stubbs). New to Malaya.

35. Celaenorrhinus putra sanda Evans, 1941

Jupper Perak, ix. 1949 (J. A. Hislop). Hitherto known in Malaya with certainty only from the Langkawi Is.

36. Celaenorrhinus pyrrha Nic., 1889

Pahang, Fraser's Hill, 8. vii. 1949 (G. C. Stubbs). New to Malaya.

37. Celaenorrhinus nigricans Nic., 1885

3 Pahang, Kuala Terla, 4,000 ft., 17.ix.1957 (J. N. Eliot). New to Malaya.

38. Coladenia agnioides Elw. & Edw., 1897

Two of Pahang, Fraser's Hill, 4,000 ft., 24.iii.1957 (J. N. Eliot) and 16.vi.1957 (G. C. Stubbs). New to Malaya.

39. Pintara pinwilli pinwilli (Btlr., 1877)

3, 9 Malacca, Jasin, 26.v.1955 (G. C. Stubbs), 3 Pahang, Ginting Sempak, 1,500 ft., 7.viii.1957 (J. N. Eliot). These appear to be the first records of this rare species in Malaya since the type was taken more than 80 years ago.

40. Daimio phisara Mre., 1884

3 Perlis, Kaki Bukit, 21.ix.1957 (J. N. Eliot), with a comparatively broad, clear white discal band on UpH, resembles Burmese examples of the wet season fairly closely and is referable to subsp. phisara. New to Malaya.

The form occurring in Malaya proper represents a new subsp.:

D. phisara tristis subsp. n.

(Pl. 10, fig. 13)

3 on UpF the white spots in spaces 2 and 3 and at end-cell are smaller than in other subspp., that in space 2 being crescentic. On UpH the white band is narrow, sullied, intermediate in appearance between subspp. *phisara* (wet season form) and *tenebrosa* J. & T. The spot end-cell on H is fainter than usual on Up and absent on Un. On UnH the white band is unsullied and 3·5-4·0 mm. wide, as in subsp. *phisara*. F 17·5 mm.

Holotype & Pahang, Ginting Sempak, 1,750 ft., 14.iv.1957 (J. N. Eliot). Paratype & Singapore, 3.ix.1936 (J. N. Eliot) in my coll. A & in B.M. from Sumatra,

Siboga, ii. 1903 (ex *Oberthur* coll.) is almost identical with the Singapore 3.

41. *Halpe zema* (Hew., 1877) complex (Pl. 10, figs. 14–16)

The forms dealt with by Evans, 1949 (A catalogue of the Hesperiidae from Europe, Asia and Australia in the British Museum (Nat. Hist.)) under H. zema and H. zola zamba Cbt. comprise 3 closely-allied but apparently distinct species, all of which occur in Malaya without any evidence of interbreeding. I have taken all 3 at the same time and place feeding on the mauve flowers of the Siam Weed (Eupatorium sp.).

The 3 species are:

- (a) H. zema (Hew., 1877) with subspp. zema (Sikkim to N. Burma and Indo-China) and zamba Cbt., 1940 (Malaya also Borneo).
- (b) H. ormenes (Pl., 1886) with subspp. vilasina Fruh., 1911 (Sumatra also Malaya), vistula Evans, 1937 (Borneo), vistara Fruh., 1911 (Java), ormenes (Nias) and probably mahapara Fruh., 1911 (Palawan).

(c) H. elana sp. n. infra (Malaya also S. Burma).

Though fresh examples can normally be determined by superficial characters, examination of the genitalia is a safer guide. In the 3 genitalia the distal half of the clasp gives specific characters (see Text-fig. 5). In zema it is fully spined only along

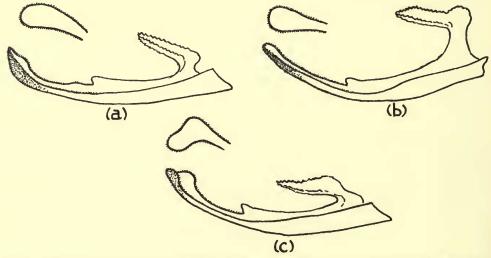


Fig. 5. Left clasp and (above) distal extremity of clasp showing optimum view of the "spoon" of: (a) *Halpe ormenes vilasina* Fruh. (Malaya), (b) *H. elana* sp. n. (Malaya), (c) *H. zema zamba* Cbt. (Malaya).

its outer, dorsal edge; the tip of the clasp is dorsally expanded, and then bent inwards at right angles. In *ormenes* and *elana* it is spined on both sides and the tip is spathulate. In *elana* the spoon is straight and flattened, in *ormenes* slightly curved inwards and trough-like. In Cbt. & Pend. genitalia fig. 282 represents *elana*, but is a little distorted, probably through mounting on a flat slide,

In the Q genitalia the ostium bursae is flanked by two antler-like processes (see Text-fig. 6). In *zema* the "antlers" are very broad, rather short and carry numerous points; in *ormenes* they are longer, narrower and carry fewer points; in *elana* they are still narrower and may comprise a single point.

Judged by the genitalia H. ormenes and H. elana are more nearly related to each other than to H. zema, and probably developed from a common ancestor in Malaysia

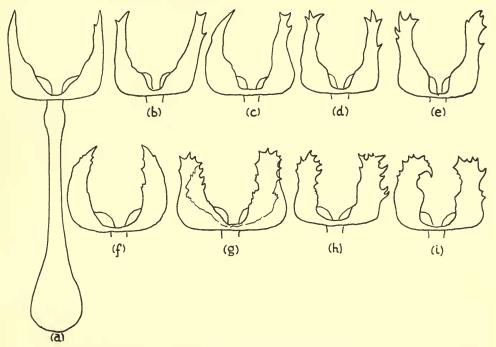


Fig. 6. Genital plate with "antlers" and bursa ((a) only) of: (a), (b), (c) Halpe elana sp. n. (Malaya), (d), (e) H. ormenes vilasina Fruh. (Malaya), (f) H. ormenes vistula Evans (Borneo), (g) H. zema zema (Hew.) (Sikkim), (h), (i) H. zema zamba Cbt. (Malaya).

and S. Burma respectively. *H. elana* must have extended its range into Malaya in very recent times—since the final separation of Sumatra and Borneo from Malaya—since it has not reached the islands. *H. zema* is a common species in Sikkim and Assam, and it probably developed from the same common ancestor in this area. However, it must have begun to spread southwards before *elana* as, despite its more northerly origin, it has reached Borneo.

42. *H. elana* sp. n.

(Pl. 10, fig. 14)

3 Up similar to *H. ormenes vilasina* Fruh., and differing from *H. zema zamba* Cbt. in that the spots in spaces 2 and 3 on UpF do not overlap so much. On UnH the whitish band is narrow (about 1.0−1.5 mm. wide), yellowish, inwardly straight,

outwardly irregular, with the veins dark-dusted across it (in *ormenes* and *zema* the band is wider—almost clear white and straight-edged in *ormenes*, rather yellowish and irregular in *zema*). Genitalia as described above. F 17·5 mm.

Q differs from *ormenes* and *zema* QQ in the narrower band on UnH, which generally resembles that of the Q, though it may be slightly wider (up to 2.0 mm.). F 19.5

mm.

Holotype & Pahang, Ginting Sempak, 1,000 ft., 6.i.1957 (J. N. Eliot). Allotype & Pahang, Ginting Sempak, 1,000 ft., 20.i.1957 (J. N. Eliot). A series from Ginting Sempak and Fraser's Hill in my coll., and a series in B.M. from S. Burma. The latter were placed under *ormenes* by Evans (op. cit.), presumably because the nominotypical subsp. from Nias has a rather similar narrow white band on UnH.

43. Halpe zola zola Evans, 1937

3 Perlis, Kaki Bukit ridge, 1,500 ft., 7.i.1939 (C. F. Cowan). New to Malaya. As shown above, the record of zola in Cbt. & Pend. is erroneous. Though superficially very similar to the species of the H. zema complex, the genitalia of H. zola show it to be fairly widely separated from them. The Q genitalia, in particular, are quite different and lack the "antlers".

44. Halpe porus (Mab., 1876)

♀ Perak, Taiping Club, 10.xi.1953 (C. F. Cowan). Doubtfully recorded by Cbt. & Pend.

45. Halpe hauxwelli Evans, 1937

3 Pahang, Fraser's Hill, 4,000 ft., 19.iv.1957 (J. N. Eliot). New to Malaya.

46. Scobura woolletti woolletti Riley, 1923

 \circlearrowleft , 2 \circlearrowleft Pahang, Ginting Sempak, 1,000 ft., xii.1956–i.1957 (J. N. Eliot). New to Malaya.

47. Suastus minuta (Mre., 1877)

Hitherto the only Malayan record of *S. minuta* has been of subsp. *aditia* Evans, 1943, from the Langkawi Is. A female from Perak, Grik District, Bersia, 15.viii.1949 (*J. A. Hislop*) constitutes the first record of this subsp. from Malaya proper. I have also seen from Malaya one example of the superficially very different subsp. *scopas* (Stgr., 1889) (\$\times\$ Pahang, Ginting Sempak, 29.xii.1940 (*G. C. Stubbs*).) This suggests that *scopas* may have achieved specific status.

48. Zographetus ogygia (Hew., 1866) complex

Evans (1949, op. cit., p. 300), whilst commenting on "the bewildering variation in the 3 genitalia, the presence or absence of the 3 brand and the appearance of the UnH" considered that there was only one real species in the complex. He

grouped all the described forms into four subspp.: ogygia (with flavipennis (Nic., 1885) and flavalum (Nic., 1887) listed as syns.), andamana Evans, 1926, durga (Pl., 1884) and ogygioides Elw. & Edw., 1897.

I have re-examined the genitalia of all the examples in B.M. dissected by Evans and also some further Malayan examples in my own collection, and my conclusions

differ from those of Evans in some respects.

The of genitalia (see Text-fig. 7) of nominotypical ogygia (= flavipennis (Nic.)) show considerable individual variation, especially in the outline of the clasp and in the paired sub-uncal processes, which comprise a narrow outer arm united to an

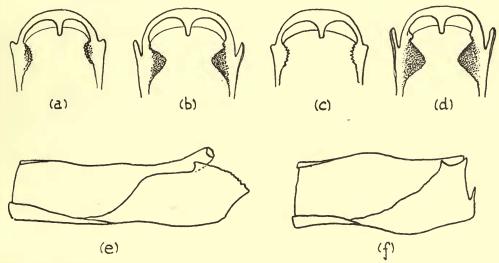


Fig. 7. End-on view of uncus, to show sub-uncal processes, of: (a) Zographetus ogygia ogygia (Hew.) form a (Malaya, (b) Z. ogygia ogygia (Hew.) form b (f. doxus f. n.) (Malaya), (c) Z. ogygioides Elw. & Edw. (Malaya), (d) Z. kutu sp. n. (Malaya). Right clasp of: (e) Z. kutu sp. n. (Malaya), (f) Z. ogygia sanga subsp. n. (Sumbawa).

inner spined or dentate lamina. Although no two specimens are exactly alike, I have nevertheless been struck how all the specimens I have examined break down into two forms. Form a, to which belong the types of ogygia and andamana Evans, has the outer arm always short, the inner lamina small and carrying comparatively few large spines, usually roughly arranged in two rows round the periphery. Form b, which is rarer, has the outer arm of variable length, though usually longer than form a, whilst the inner lamina is larger and covered almost all over with numerous small teeth. Sometimes form a has a few minute teeth on the inner lamina in addition to the peripheral spines (as in Text-fig. 7(a)), thus showing an approach to form b. However I have seen no convincing evidence of one form grading gradually into the other, and I think it is probable that two species are involved. But in view of the pronounced tendency to individual variation and the impossibility of distinguishing the two forms with certainty on superficial characters (though in Malaysia form a has at most a faint apical purple wash on UpF, whilst form b has a strong wash),

I think it is best to leave them both lumped under ogygia. Form b, however, deserves a name and I propose doxus f.n. (holotype 3 S. Burma, Victoria Point, iii.1919 (ex W. H. Evans coll.)).

Z. flavalum (Nic.), which Evans placed as a syn. of ogygia, is represented in the B.M. only by the 3 type from Sikkim. Superficially it is very different on UnH and the genitalia are markedly different, lacking the sub-uncal processes. I consider it to be a good species, which does not belong to the ogygia complex at all.

Z. durga (Pl.) from the Philippines has the inner lamina somewhat resembling that organ in Z. satwa (Nic., 1883), which it also resembles on Un. In all other

respects it is closer to ogygia, and is best left as a subsp. of that sp.

Specimens from the Lesser Sunda Is., which Evans placed under *durga*, have a highly aberrant clasp, and must therefore be regarded as constituting a good subsp.:

Z. ogygia sanga (Evans MS.) subsp. n.

Superficially indistinguishable from durga (Pl.). The 3 genitalia have the clasps ending in a sharp upturned spine (see Text-fig. 7(f)), a feature which is unique in the genus, but otherwise do not much differ from those of durga, though the outer arm of the sub-uncal process is longer and broader.

Holotype & Sumbawa, ix. 1891 (ex W. H. Evans coll.). B.M. has also & Lombok, & S. Flores, ♀ Alor.

Z. ogygioides Elw. & Edw. flies with ogygia in Malaya, Sumatra and Borneo. It shows much less individual variation in the 3 genitalia than ogygia. The outer arm is always vestigial and the inner lamina small, carrying about 6-8 large spines in a single row round the periphery. Superficially it differs from ogygia in lacking brands on UpF, whilst on UnH it has a more unicolorous reddish-brown ground colour, on which the discal spots are clearly marked. As there is no evidence of any grading into ogygia, and as the geographical overlap is so large, I consider that it is a good sp.

In Malaya there occurs yet another brandless sp., which is more easily recognizable

than ogygioides:

49. **Z. kutu** sp. n.

Larger than ogygioides (F 16 mm. as against 14–15 mm.). \Im UpF with spots arranged as in ogygia and ogygioides, but differing from both in having the whole wing washed with dull non-shining purple (the purple wash, when present, is more apical and shining in the other two spp.). There are no brands on UpF. UnH uniform reddish-brown, usually with a purple flush, the discal spots vestigial or absent. \Im genitalia with the sub-uncal processes carrying a long outer arm and large inner lamina covered all over with numerous minute teeth, resembling ogygia form b, though both outer arm and inner lamina are a little larger (see Text-fig. \Im (d)).

Holotype & Selangor, Bukit Kutu, 3,300–3,500 ft., 23.ix.1932 (H. M. Pendlebury). Four & paratypes from Pahang, Fraser's Hill, iv-ix.1957 in my coll. Other & seen

in coll. Stubbs.

50. Hyarotis stubbsi sp. n.

(Pl. 10, fig. 17)

Q nearest to *H. adrastus* (Stoll). Up blackish brown. F with large, quadrate, contiguous, hyaline spots in space 2 and the outer part of the cell, a minute hyaline spot at the base of space 3, and minute apical spots in spaces 6–8, only that in 6 being hyaline. On UnF the spots in 3 and 6–8 are slightly enlarged, and there are large, diffuse, tornal white spots in spaces 1a and 1b and a diffuse white costal spot above, and rather wider than, the cell spot. There is also a sub-marginal series of obscure dark spots running from V 2 to the costa. On UnH the basal area from midcosta to the cubitus, including the whole of the cell, is darkened, and there is an obscure post-discal series of contiguous dark spots from V 1b to V 7 arranged in an even curve. Cilia F and H uniform dark brown, not chequered pale and dark brown as in adrastus. Palpi grizzled as in adrastus. Antennae not completely white-ringed below the apiculus, as in adrastus, but with a white patch on the Un of the club. F 18 mm.

Differs additionally from *adrastus* in the following respects: absence of a white spot in space I on UpF; much larger spots in spaces 2 and cell with their inner edges in line; much larger white costal and tornal spots on UnF; complete absence of the white band always present on UnH, at least vestigially, in *adrastus*.

Holotype ♀ Pahang, Fraser's Hill, 25.ix.1949 (G. C. Stubbs). Unique.

51. Plastingia tavoyana Evans, 1926

♀ Pahang, Kuala Lipis, 3.ix.1934 (G. C. Stubbs). Hitherto recorded in Malaya only from Langkawi Is.

52. Potanthus pamela Evans, 1934

3 Pahang, Fraser's Hill, 4,000 ft., 26.vi.1953 (J. A. Hislop). New to Malaya. Superficially very similar to the much commoner P. rectifasciata (Elw. & Edw.), which occurs in the same locality, but easily recognized by the broad V-shaped uncus.

53. Potanthus pava pava (Fruh., 1911)

♂ Perak, Grik, 10.vi.1956 (J. A. Hislop). Hitherto recorded in Malaya only from the Langkawi Is.

54. Telicota ancilla bambusae (Mre., 1878)

The occurrence of this butterfly in Malaya seems hitherto to have been based on a single 3 in B.M. labelled "Singapore, J. J. Walker". This example is much closer to the Ceylon form of ancilla than to the forms occurring in S. Burma or Borneo. The late Cdr. Walker collected widely in the East, and the example is, I believe,

wrongly labelled. However T. ancilla does, I think, occur in Malaya in a form superficially rather similar to the Bornean subsp. santa Evans, though smaller and with narrower orange markings. It differs from santa and the Indo-Burmese subsp. bambusae in the \mathcal{S} genitalia, which resemble those of T. linna Evans, 1937, in having a long curved valva and prominently protruding cuiller. Indeed, if judged by \mathcal{S} genitalia alone, it would be best placed as a linna form. It is, however, quite distinct from T. linna bina Evans, differing in the following respects: the lower surface of the antennal club is ringed with black, this being plain yellow in bina; the base of space 3 on UpF is nearly always black, this being orange in bina; the black discal fascia, on which the \mathcal{S} stigma is placed, is not bowed outwards as in bina; on UpH the orange discal band very seldom extends into space 6, as it always does in bina; on UnH the veins are not dark-dusted across the orange discal band.

The \mathcal{S} genitalia of undoubted specimens of T. ancilla bambusae show some individual variation, and this Malayan form is, I think, best left provisionally as bambusae. I have taken 10 \mathcal{S} , 1 \mathcal{S} in the central range between 1,000 ft. and 4,000 ft.

55. Telicota hilda sp. n.

(Pl. 10, fig. 18)

All the forms from Malaya to the Philippines and Australia placed by Evans under T. augias (L.) have the orange discal band on UpH extending above V 6. In the mountains of Malaya there occurs a form with similar δ genitalia in which the band never extends above V 6 and which differs in a number of other respects. Though possibly a montane form of augias, I think it is more correctly regarded as a good species.

In the larger and is more heavily studded with larger spines. On Up the orange markings are narrower than in any augias subsp.; on F the base of space 3 is black; on H the discal orange band never extends above V 6. On UpF the portion of the discal stigma lying in space I is usually markedly concave outwardly. On UnH the ground colour is dusky ochreous, against which the discal orange band contrasts conspicuously. The Vs crossing this band are dark-dusted, as in the Philippine T. augias pythias (Mab.). The antennal club is strongly black-striped below. F 17 mm.

Holotype & Pahang, Fraser's Hill 4,000 ft., 10.ix.1957 (J. N. Eliot). Five & paratypes from Fraser's Hill at elevations of 2,000–4,000 ft. in my coll. Further & seen in coll. J. A. Hislop. B.M. has 1 & from Victoria Point, S. Burma.

56. Caltoris bromus bromus (Leech, 1894)

Two \Im Pahang, Ginting Sempak, 1,000 ft., xii.1956–i.1957, \Im Selangor, Templer Park, 4.v.1957 (all J. N. Eliot), \Im Perak, Grik, 31.vii.1957 (J. A. Hislop). Recorded doubtfully from Malaya by Cbt. & Pend,

57. Caltoris tulsi tulsi (Nic., 1884)

3 Selangor, Ginting Sempak, 1,500 ft., 14.vii.1957 (J. N. Eliot) has no pale fascia on UnF or UnH, the dark brown ground colour being uniformly washed with purple. There is a similar 3 in B.M. from Sumatra and another from Borneo, all of which have normal 3 genitalia.

SUMMARY

Seven new species of butterflies from Malaya and Burma, 8 new subspecies and 2 new forms are described. A number of butterflies are recorded from Malaya for the first time, and the known geographical range of others has been extended. In addition an attempt has been made to sort out into their constituent species several complexes of hitherto uncertain status.

