

ON NEW AND LITTLE-KNOWN BUTTERFLIES
FROM THE INDO-MALAYAN REGION.

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(With Plates N, O, P, and Q.)

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(Continued from page 321.)

Family PAPILIONIDÆ.

Subfamily PAPILIONINÆ.

36. PAPILIO (*Euplaeopsis*) DANISEPA, Butler, Pl. Q, Fig. 48, ♀

P. danisepe, Butler, Ann. and Mag. of Nat. Hist., fifth series, vol. xvi, p. 343, n. 109 (1885); *Isamiopsis danisepe*, Swinhoe, Trans. Ent. Soc. Lond., 1893, p. 314, n. 405.

HABITAT : Near Assam ; Sylhet (*Butler*) ; Cherra Punji (*Swinhoe*) ; Htarooay stream, Arracan Hills, March (*Adamson*) ; Sibsagar, Jorehât, both in Assam ; Katha district, Upper Burma ; Thaungyin Forests, Middle Tenasserim, Daunat Range, Burma (*coll. de Nicéville*).

EXPANSE : ♀, 5·2 inches.

DESCRIPTION : FEMALE. UPPERSIDE, *forewing* with the basal third of the wing and the whole of the sutural area bronzy-brown, the outer two-thirds of the wing fuscous, in certain lights glossed with brilliant purple ; the outer half of the discoidal cell occupied by a creamy-white patch, its inner edge irregular ; a very narrow similar streak at the apex of, but immediately beyond, the cell ; a very small irrorated white spot at the base of the subcostal interspace ; a larger triangular one with its apex pointed outwards at the base of the upper discoidal interspace ; a large creamy-white streak outwardly dusted with purple scales at the base of the lower discoidal interspace ; a similar but narrower and longer streak dusted throughout with purple scales in the upper median interspace ; a very faint purple irrorated streak in the lower median interspace ; a submarginal series of nine rounded white spots outwardly edged with purple, the three anterior ones out of line with the rest, bent inwardly, one spot in each interspace save the submedian which has two, these latter are somewhat linear in shape, and the posterior of them reaches the anal angle of the wing. *Hindwing* with the costa as far as the costal

nervure, the outer half of the wing broadly and the abdominal margin fuscous ; the whole of the discoidal cell and seven streaks beyond the cell creamy-white, the six anterior streaks are outwardly irrorated with purple scales, the outermost streaks at either end of the series are the largest, the series decreasing by pairs till the fourth or middle spot is reached, which is the smallest ; a submarginal series of seven rounded creamy-white spots, the two anteriormost ones the largest. **UNDERSIDE**, both wings glossy bronzy-brown, without any purple gloss whatever. *Forewing* with the markings as on the upper-side, but there is an additional pair of small indistinct irrorated white streaks in the middle of the submedian interspace ; there is a short white streak at the base of the discoidal cell ; and the basal third of the sutural area is also white. *Hindwing* marked as on the upperside, but the white streaks beyond the cell are wider, the submarginal spots are twice as large, and there is an additional round white spot at the extreme base of the wing. *Cilia* of both wings black, spotted with white (more prominently on the hindwing) at each interspace. *Head* with a white streak down the face on each side between the eyes and a white spot on each side of the vertex ; *antennæ* black ; *thorax* with two white spots on each side anteriorly above, and a white streak posteriorly above, spotted with white beneath ; *abdomen* with three series of large white spots on each side, and a median series beneath.

P. danisepa is a local race of *P. caunus*, Westwood, from Borneo. Other local races are *P. ægialus*, Distant, from the Malay Peninsula, and *P. velutinus*, Butler, from Sumatra.* The Javan form has not been named, though it has been recorded from thence by Dr. Felder as *P. caunus*. Of all these, *P. danisepa* is the largest and most beautiful, in the same way that *P. telearchus*, Hewitson, is the largest and most beautiful species of the group of *P. paradoxa*, Zinken-Sommer. With regard to *P. telearchus*, of which I described and figured the female sex,† Colonel Swinhoe writes‡ :—"The female, which is now, I believe, in the collection of Messrs. Godman and Salvin, did not differ from the other sex ; it certainly had no resemblance to the

* Ann. and Mag. of Nat. Hist., fifth series, vol. xvi, p. 343 (1885).

† Journ. Bomb. Nat. Hist. Soc., vol. iv, n. 169, n. 8, pl. A, fig. 5, female (1889).

‡ Trans. Ent. Soc. Lond., 1893, p. 314, n. 403.

insect described and figured by de Nicéville." I do not know why Colonel Swinhoe in one sentence refers to the Godman and Salvin female in both the past and present tenses. But I am quite sure that I have correctly sexed the species. Mr. W. Doherty has recorded the following note on this butterfly* :—"The undescribed female of this species appears to be dimorphic, one form resembling the male, and the other the female, of *Euplœa midamus*, Linnæus (*linnæi*, Moore)." It is probable that the Godman and Salvin female is the one which resembles the male, while the specimen I described and figured is the more aberrant form which mimics the female *Euplœa*. I observe, however, that on November 7th, 1894, Colonel Swinhoe (as recorded in the Proceedings) exhibited at the Entomological Society of London a female of *P. telearchus* from Cherra Punji. As he refers to the specimen I figured and described in speaking of his own example, it seems probable that he now admits that my identification is correct. I possess another female example taken at Fort Langleh on 29th September, 1890. *P. butleri*, Janson, from the Malay Peninsula and N.-E. Sumatra, which is a local race of *P. telearchus*, is also dimorphic in Sumatra, one of these forms of the female from the Malay Peninsula is figured by Mr. Distant in Rhop. Malay., pl. xxvii, fig. 6, which mimics a brown *Euplœa*, while that form and one mimicking the female of the local race of *Euplœa midamus* occurring in Sumatra is also found in that island. It is not known if both these dimorphic female forms occur also in the Malay Peninsula, but it is highly probable that they do.

P. danisepa is a beautiful mimic, except as regards its much superior size, of *Euplœa* (*Danisepa*) *diocletianus*, Fabricius, which occurs with it. The male is very rare ; I possess five specimens only. The female here described is probably the first ever obtained, and I am greatly indebted to Lieut. James M. Burn, R. E., for the gift of the specimen, which he obtained last March at Mawhun, 3,000 feet elevation, in the Katha District of Upper Burma. The female of the parent form, *P. caunus*, Westwood, has already been described† by the late Herr Eduard G. Honrath, who also remarks on the extraordinary

* Journ. A. S. B., vol. lviii, pt. 2, p. 130 (1889).

† Berliner Ent. Zeitsch., vol. xxxvi, p. x (1891).

rarity of that sex. Two specimens only were obtained by Baron Schönberg's collector Wahnes.

Family HESPERIIDÆ.

37. DAIMIO DIRÆ, n. sp., Pl. Q, Fig. 49, ♂.

HABITAT : Pulo Laut ; Java ; N.-E. Sumatra.

EXPANSE : ♂, 1.6 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* dark shining brown. *Cilia* cinereous. *Forewing* with the following hyaline whitish spots :—Five very small, apical, forming a sinuous line ; a comma-shaped one towards the end of the discoidal cell ; a small square one towards the base of the second median interspace ; another similar one, but four times as large as the one anterior to it, its outer edge concave, towards the base of the first median interspace : two pairs of indistinct sullied spots in the submedian interspace, the spots of each pair placed one above the other, the inner pair below the inner corner of the large quadrate spot in the interspace above, the outer pair in a line with the small quadrate spot in the second median interspace ; this latter pair of spots has other spots anterior to it on the disc, but highly indistinct. *Hindwing* with a large oval shining snow-white spot on the middle of the disc, neither reaching the abdominal margin nor the costa ; a rather prominent narrow submarginal macular sullied fascia. UNDERSIDE, *both wings* dull instead of shining brown as on the upperside. *Forewing* with the hyaline spots as on the upperside ; the two pairs of spots in the submedian interspace much purer white, larger, and more conspicuous than above. *Hindwing* has the large discal spot considerably larger than on the upperside, anteriorly it reaches midway between the costal nervure and the first subcostal nervule, posteriorly almost to the abdominal margin ; the submarginal fascia as on the upperside. *Antennæ*, *head*, *body*, and *legs* dark brown ; *palpi* with the third joint dark brown, the second chrome-yellow.

Nearest to *D. phisara*, Moore, a common species in Sikkim, the Khasi Hills, and Burma, and I have a single example from Perak in the Malay Peninsula ; differing therefrom on the upperside of the forewing in the spot towards the end of the discoidal cell being comma-shaped.

and extending right across the cell, instead of being much smaller and round and placed against the median nervure ; and the snow-white (instead of pale-yellow) area on the hindwing being very much smaller, confined to the middle of the disc only instead of reaching the costal and abdominal margins. It is also allied to "*Satarupa*" *corona*, Staudinger,* from Alabat, Mindora, Camiguin de Mindanao, and Davao—all in the Philippine Isles, from which it appears to differ on the upperside of the hindwing in the discal spot being much smaller, and the submarginal fascia being sullied and more continuous, in *D. corona* it appears to be broken up into small white spots.

Described from a single example taken by Mr. W. Doherty in Pulo Laut, Borneo, in June, 1891, and deposited in Mr. H. J. Elwes' collection. Herr H. Fruhstorfer has sent me a second specimen, since the description above was written, from Java without any precise locality. It differs in some slight details from the type, more especially in having the discal white spot on the hindwing somewhat larger, and the submarginal line a little more prominent, but it is nevertheless obviously the same species. In the collection of Hofrath Dr. L. Martin are two more specimens of this species from N.-E. Sumatra, one taken at Selesseh on 13th May, the other in the Battak Mountains in July. They agree very closely with the type.

Genus SUADA, nov.

MALE. FOREWING, lengthened, narrow ; *costa* very nearly straight ; *apex* rather acute ; *outer margin* round at apex, then nearly straight (slightly convex only) to anal angle ; *anal angle* rounded ; *inner margin* straight, considerably longer than the outer margin ; *costal nervure* ending on the costa opposite the apex of the discoidal cell ; *first subcostal nervure* bent forwards soon after its origin and touching for some considerable distance, but not anastomosing with, the costal nervure ; *second subcostal* arising a little nearer to the first than to the third ; *third subcostal* arising near to the fourth ; *fourth subcostal* terminating at the apex of the wing ; *subcostal nervure* as usual ending on the outer margin well below the apex of the wing ; *discoidal cell*

* *Satarupa corona*, Semper, Schmett. Philip. Inseln, p. 306, n. 457, pl. xlv, fig. 2, *female* (1892). Dr. Staudinger's name appears to be a MS. one only ; I cannot find the species described by him anywhere.

long, reaching to two-thirds the length of the wing from the base; *upper disco-cellular nervule* long, strongly outwardly oblique; *middle disco-cellular* slightly longer than the lower disco-cellular, straight, inwardly oblique; *lower disco-cellular* upright, slightly anteriorly concave, posteriorly straight; *second median nervule* arising close to the lower end of the cell; *first median* arising about four times as far from the second as the second does from the third, arising much nearer to the lower end of the cell than to the base of the wing; *submedian nervure* sinuous. HINDWING, narrow, much broader than long; *costa* strongly arched at base, thence slightly arched to apex; *apex* rounded; *outer margin* distinctly excavated at the termination of the first median nervule; *anal angle* well rounded; *abdominal margin* slightly convex; *costal nervure* very straight, slightly curved at the base only; *first subcostal nervule* arising rather close to the apex of the cell; *disco-cellular nervules* concave, outwardly oblique; *discoidal nervule* wanting; *second median nervule* arising quite close to the lower end of the cell; *first median* arising much nearer the end of the cell than the base of the wing, arising at about three-fifths of the length of the cell from the base; *submedian* and *internal nervures* straight. ANTENNÆ long, more than half the length of the costa of the forewing, the club moderately stout, curved at the tip, the end of the club ending in a sharp point. PALPI erect; second joint broad, densely hairy; third joint long, naked, slender, acuminate, reaching well above the vertex of the head. LEGS very long and slender; foreleg, tibia with an epiphysis; hindleg, tibia with two pairs of spurs. THORAX small, weak. ABDOMEN, slender, long, reaching quite to the outer margin of the hindwing. FEMALE. Differs from the male only in the wings being somewhat broader. Type, "*Hesperia*" *swerga*, de Nicéville.

This genus comes into Capt. E. Y. Watson's subfamily *Pamphilinæ*, Section A (*vide* Proc. Zool. Soc. Lond., 1893, p. 71), and is allied to *Suastus*, Moore; *Acleros*, Mabille; *Iambrix*, Watson; *Koruthaialos*, Watson; *Oxympalpus*, Watson; and *Teinorhinus*, Watson, with all of which it agrees in the form of the palpi. It differs, however, from these genera in the shape of the wings, which are greatly lengthened, and the discoidal cell of the forewing being extremely narrow. It is perhaps nearest to *Koruthaialos*, from which it differs in neurulation in that the second median nervule of the forewing arises nearer to the end of the

discoidal cell than it does in *K. hector*, Watson, the type of the genus, and the lower disco-cellular nervule is upright instead of inwardly oblique; in the hindwing also the second median nervule arises nearer to the end of the cell; the disco-cellular nervules of *Suada* are outwardly oblique, in *Koruthaialos* they are upright.

(1.) SUADA SWERGA, de Nicéville.

Hesperia? *swerga*, de Nicéville, Journ. A. S. B., vol. lii, pt. 2, p. 89, n. 38, pl. x, fig. 12, male (1883); *Suastus swerga*, Elwes, Trans. Ent. Soc. Lond., 1888, p. 450, n. 475; *Suastus möllerii*, Moore, l.c., vol. liii, p. 49 (1884).

HABITAT: Sikkim; Tenasserim (Beeling, Ataran Valley, Daunat Range); Malay Peninsula (Perak); N.-E. Sumatra; Java.

38. SUASTUS ROBSONII, n. sp., Pl. Q, Fig. 50, ♂.

HABITAT: Masuri, Western Himalayas.

EXPANSE: ♂, 1.45 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* shining dark hair-brown. *Cilia* cinereous. *Forewing* with a very minute hyaline white spot in the middle of the outer end of the discoidal cell. *Hindwing* rather paler on the disc than elsewhere owing to the presence of some long dull ochreous hair-like scales. UNDERSIDE, *both wings* paler than above. *Forewing* with the inner half of the wing dark hair-brown as on the upperside; the cell spot as above; a pale streak in the middle of the submedian interspace. *Hindwing* (as seen under a strong magnifying glass) overlaid throughout with dull ochreous scales; an elongated minute black spot at the end of the cell. *Abdomen* dark brown above, beneath each segment is ringed with whitish.

Nearest to *Suastus minuta*, Moore, from Ceylon, from which it differs in the cilia of the hindwing being less pure white, and on the underside in having the hindwing practically unmarked, *S. minuta* having its posterior two-thirds pure white, bearing three prominent dark brown spots. In Captain E. Y. Watson's revision of the genera of the *Hesperiidae* in Proc. Zool. Soc. Lond., 1893, p. 76, there is a misprint bracketing *S. minuta* with *Suada swerga*, de Nicéville (= *S. möllerii*, Moore), but the two species are abundantly distinct and are given separate numbers. *S. swerga* has a much wider range

than was expected ; not only does it occur in Sikkim, Beeling in North Tenasserim, the Ataran Valley, and on the Daunat Range in Middle Tenasserim, but also in Perak in the Malay Peninsula, and in N.-E. Sumatra and Java.

Described from a single example obtained on the 12th July, 1892, by Mr. S. Robson, after whom I have much pleasure in naming the species.

Genus GE, nov.

MALE. FOREWING, *costa* regularly and slightly arched throughout its length ; *apex* rather rounded ; *outer margin* nearly straight, except from the apex of the wing to about the termination of the lower discoidal nervule where it is at right-angles to the *costa* ; *inner angle* rounded ; *inner margin* straight, as long as the outer margin ; *costal nervure* ending before the apex of the discoidal cell ; *subcostal nervules* arising at slightly decreasing distances apart ; *discoidal cell* narrow, extending to beyond the middle of the wing, not reaching to two-thirds the length of the wing from the base ; *upper disco-cellular nervule* rather long, strongly outwardly oblique ; *middle disco-cellular* straight, strongly inwardly oblique ; *lower disco-cellular* also straight, in the same straight line as the middle disco-cellular, of about the same length ; *second median nervule* arising well before the lower end of the cell ; *first median* arising nearer to the lower end of the cell than to the base of the wing ; *submedian nervure* straight ; a circular sexual dense *tuft of hairs* placed on the upperside of the wing towards the base of the first median interspace ; the area to which the bases of these hairs is attached shows prominently on the underside as a circular disc. HINDWING, longer than broad ; *costa* greatly arched at the base, less so to the apex of the wing ; *apex* rounded ; *outer margin* rounded, but considerably excised about the termination of the first median nervule ; *anal angle* rather acute ; *abdominal margin* straight ; *costal nervure* slightly curved only, terminating at the apex of the wing ; *first subcostal nervule* arising long before the apex of the cell ; *upper disco-cellular* straight, upright ; *lower disco-cellular* straight, outwardly oblique, longer than the upper ; *discoidal nervule* present ; *second median nervule* arising a little before the lower end of the cell ; *first median* arising about twice as far from the second as the second does

from the third ; *submedian* and *internal nervures* straight. ANTENNÆ long, more than two-thirds the length of the costa of the forewing, the club lengthened, very slender, the apex of the club long and thin. PALPI densely hairy, porrect, the third joint hidden beneath the second. THORAX small. ABDOMEN slender, a little longer than the anal angle of the hindwing. LEGS, foreleg, tibia with an epiphysis ; hindleg, femur thickly fringed, tibia with two pairs of spines. Type *Ge geta*, de Nicéville.

The genus appears to be nearest to *Matapa*, Moore, and *Sepa*,* de Nicéville, differing from both in the unique character of the "sex-mark" in the forewing. It differs from the former in having the antennæ perceptibly longer, with a much more slender club, with a longer and slenderer apical crook. The sexual tuft of hairs in the genus *Ge* reminds one of that in *Baoris oceia*, Hewitson, but in the former it is much smaller, circular, and placed on the upperside of the forewing ; while in the latter it is much larger, elongated, and placed in the middle of the cell and extending far beyond the cell, lying across the bases of the three median nervules, on the upperside of the hindwing. *B. oceia* has a glandular patch of scales placed on the middle of the submedian nervure of the forewing on the underside, and extending well beyond that vein on either side, which is wholly wanting in *Ge*. The pale patch in *Ge geta* on the disc of the hindwing on the upperside is almost certainly sexual, the scales being much modified ; there is also a tuft of long hairs attached along the subcostal nervure and partly covering the pale patch of modified scales, which also is almost certainly a male sexual character.

39. GE GETA, n. sp., Pl. Q, Fig. 51, ♂.

HABITAT : Penang ; N.-E. Sumatra.

EXPANSE : ♂, 1.5 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* shining dark brown, immaculate. *Cilia* cinereous. *Forewing* with the sexual small round dense raised tuft of hairs towards the base of the first median interspace jet-black. *Hindwing* with a large rounded space in the middle of

* *Sepa*, de Nicéville, Journ. A. S. B., vol. lxiii, pt. 2, p. 49 (1894), from N.-E. Sumatra.

the wing paler than the rest of the surface composed of modified scales. *UNDERSIDE*, both wings coloured as on the upperside. *Forewing* with a broad dark ochreous fascia commencing on the inner margin extending on to the disc, and just enclosing the disc-like "male-mark" on its basal edge. *Hindwing* unmarked. *Cilia* of both wings pale ochreous. *Head, antennæ, palpi, body, and legs* dark brown.

Described from two examples in my collection—one from Penang, the other from N.-E. Sumatra; the latter kindly sent to me by Hofrath Dr. L. Martin, who has other specimens in his own collection.

Genus IDMON, nov.

MALE. *FOREWING*, triangular, rather short; *costa* nearly straight, only slightly arched; *apex* somewhat acute; *outer margin* regularly convex to the inner angle; *inner angle* rounded; *inner margin* straight; *costal nervure* short, ending just before the apex of the discoidal cell; *subcostal nervules* arising at progressively decreasing distances apart; *discoidal cell* narrow, rather short, not reaching to two-thirds the length of the wing from the base; *upper disco-cellular nervule* very short indeed, practically obsolete, outwardly oblique; *middle* and *lower* disco-cellular very upright, slightly inwardly oblique only, both slightly concave, the middle a very little longer than the lower; *second median nervule* arising close to the lower end of the cell; *first median* arising a little nearer to the base of the wing than to the lower end of the cell; *submedian nervure* straight; a *sexual brand* placed anterior to but against the submedian nervure towards its base, this brand is narrow and raised. *HINDWING*, almost circular, as broad as it is long; *costa* much arched at the base, thence slightly arched to the apex; *outer margin* evenly rounded to the anal angle; *anal angle* rounded; *abdominal margin* slightly convex; *costal nervure* rather arched, ending at the apex of the wing; *first subcostal nervule* arising rather near to the apex of the cell; *disco-cellular nervules* placed slightly obliquely outwardly, very concave; *discoidal nervule* wholly absent; *second median nervule* arising quite close to the lower end of the cell; *first median* arising much nearer to the lower end of the cell than to the base of the wing; *submedian* and *internal nervures* straight. **ANTENNÆ**

long, more than half the length of the costa of the forewing, with an elongated slender club, the terminal crook short. PALPI erect, second joint densely hairy ; third joint naked, bluntly conical, standing out prominently from the second joint. THORAX rather stout. ABDOMEN slender, reaching to the anal angle of the hindwing. LEGS, hindleg, femur fringed throughout its length, not tufted ; tibia with a tuft of hairs attached to its proximal and two pairs of spines on its distal end. FEMALE. Differs from the male only in the wings being broader, and lacking the sexual brand on the forewing. Type, "*Baoris*" *unicolor*, Distant.

Idmon is apparently nearest to *Arnetta*, Watson, but differs entirely in the male secondary sexual characters, the male of *A. atkinsoni*, Moore, the type of *Arnetta*, having the inner margin of the forewing lobed, with a tuft of long setæ attached to the lobed portion, while *I. unicolor*, Distant, has the inner margin to the forewing straight, with no tuft of hairs, but has instead a narrow raised brand of modified scales lying alongside a portion of the submedian nervure towards its base on the upperside of the forewing. The shape of the wings in the males of the two typical species of the two genera is very similar, but *Idmon* has the second median nervule of the forewing arising nearer to the lower end of the discoidal cell, while the first median nervule arises much nearer the base of the wing than in *Arnetta* ; and the discoidal nervule of the hindwing is quite wanting in *Idmon*, while it is present in *Arnetta*. *Idmon* is more distantly related to *Itys*, de Nicéville, but the shape of the wings and the palpi will readily distinguish between them. The male glandular streak on the upperside of the forewing is almost exactly similar to that found in some species of the otherwise very different genus *Padraona*, Moore. I am persuaded that the genus is a valid one, and can give no more convincing reason for the fact that it is quite distinct from *Arnetta* than the postulate laid down by Captain E. Y. Watson in Proc. Zool. Soc. Lond., 1893, p. 6, quoted below, with which I cordially agree :—"In any particular genus in which male secondary sexual characters are found, the particular male character (be it costal fold, discal stigma, or tuft of hairs) may be present or absent in different species of that same genus, but is never replaced by a character of different structure."

40. IDMON UNICOLOR, Distant, Pl. Q, Fig. 53, ♂.

Baoris unicolor, Distant, Rhop. Malay., p. 381, n. 5, pl. xxxv, fig. 11, female (1886).

HABITAT : Malacca (*Distant*) ; Perak.

EXPANSE : ♂, 1.35 ; ♀, 1.35 to 1.45 inches.

DESCRIPTION : "UPPERSIDE and UNDERSIDE, *both wings* unicolorous rufous-brown. *Body* dark brown. *Legs* pale brown."

"This obscure, and to me unique, *Baoris* is contained in the collection of Dr. Staudinger, to whom I am indebted for the opportunity of figuring and describing it." (*Distant*, l.c.)

Mr. Distant's choice of a name for this species was a little unfortunate, as in 1883 Mr. Moore had used the same for an extreme form of the very variable *Baoris oceia*, Hewitson. My identification of the species is also a little dubious ; all that Mr. Distant says about it is given above, and if my identification of the unique specimen he figured and described is correct, the sex of which is not even stated, it has nothing in common with the genus *Baoris*, Moore, as that genus comes into Section B, while my specimens come into Section A, of Captain Watson's subfamily *Pamphilinæ*. I possess a single male and two females, all from Perak, of *I. unicolor*, and find by comparing the female examples with Mr. Distant's figure of the species that they agree very closely.

Genus ITYS, nov.

MALE. FOREWING, triangular, rather lengthened; *costa* very straight; *apex* acute ; *outer margin* convex ; *inner angle* rather acute ; *inner margin* straight, considerably longer than the outer margin ; *costal nervure* terminating on the *costa* well before the apex of the discoidal cell ; *subcostal nervules* arising at decreasing distances apart ; *discoidal cell* long, more than half, less than two-thirds, the length of the wing, narrow ; *upper disco-cellular nervule* stout, short, strongly outwardly oblique ; *middle* and *lower disco-cellulars* sub-erect (slightly inwardly oblique), straight, thin, the middle rather longer than the lower ; *second median nervule* arising well before the lower end of the cell ; *first median* arising a little nearer to the lower end of the cell than to the base of the wing ; *submedian nervure* straight ; a long *sexual tuft of hairs* attached to the inner margin of the wing towards the base

and turned under and forwards. HINDWING, elongated, much longer than broad; *costa* greatly arched at the base, convex to the apex; *apex* much rounded; *outer margin* regularly rounded to the anal angle; *anal angle* somewhat acute; *abdominal margin* straight; *costal nervure* well arched, terminating at the apex of the wing; *first subcostal nervule* arising long before the apex of the cell; *disco-cellular* nervules almost erect, slightly only outwardly oblique, strongly concave; *discoidal* nervule obsolete; *second median* nervule arising a little before the lower end of the cell; *first median* arising about twice as far from the second as the second does from the first; *submedian* and *internal nervures* straight. ANTENNÆ long, more than half the length of the *costa* of the forewing, with an elongated slender club, the terminal crook short. PALPI porrect, densely hairy, third joint almost invisible, hidden amongst the hairs of the second joint. THORAX rather stout. ABDOMEN slender, reaching just to the anal angle of the hindwing. LEGS, foreleg with an epiphysis; hindleg, femur fringed throughout its length, not tufted; tibia with a single pair of long spines at its distal end. Type, *Itys iadara*, de Nicéville.

This genus may be nearest to *Isma*, Distant*, of which *I. obscura*, Distant, is the type, a species I have not seen, and which appears to be very badly figured (Rhop. Malay., p. 386, n. 1, pl. xxxv, fig. 19 (1886), nor is the sex stated of the specimen described. Captain Watson's diagnosis of the genus *Isma* was drawn up from "*Hesperia*" *cephala*, Hewitson, which may or may not be congeneric with *Isma obscura*. *Itys* is certainly very near to the genus *Arnetta*, Watson, Proc. Zool. Soc. Lond., 1893, p. 81, of which "*Isoteinon*" *atkinsoni*, Moore, is the type. It differs from the male of that species in the forewing being more elongated, the inner margin being longer than (instead of the same length as) the outer margin; the discoidal cell is longer and narrower, the second median nervule arises nearer the lower end of the cell, there is also a greater space between the origins of the first and second median nervules, the submedian nervure is straight instead of being greatly distorted in the middle; the inner margin is straight, in *I. atkinsoni* it is lobed towards the base, the lobed portion being turned under; the hindwing is more elongated, the disco-cellular

* Rhop. Malay., p. 386 (1886).

nervules are very concave instead of straight, the discoidal nervule is obsolete, in *A. atkinsoni* it is fairly well developed; lastly, the palpi differ considerably, the third joint being almost entirely hidden beneath the long hairs of the second joint instead of being projected far beyond that joint. In *Arnetta atkinsoni* the male has the bases of the first and second median nervules of the hindwing much swollen, this character being found also in the same position in the genera *Gangara*, Moore, and *Paduka*,* Distant, but is absent in the genus *Itys*.

41. (1) *ITYS IADERA*, n. sp., Pl. Q, Fig. 52, ♂.

HABITAT : Penang, Malay Peninsula ; N.-E. Sumatra.

EXPANSE : ♂, 1.2 to 1.4 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* and *cilia* shining brownish-fuscous, immaculate. *Forewing* with the sexual tuft of hairs attached to the inner margin and turned under and forwards deep black. UNDERSIDE, *both wings* as above. *Head*, *antennæ*, *body* throughout, and *legs* fuscous.

This species is one of the most plainly-coloured butterflies I know, and is altogether without markings.

Described from one male from Penang, and three from N.-E. Sumatra, one of which was taken in the Battak Mountains in September, all in my collection, and others in the collection of Hofrath Dr. L. Martin.

(2) *ITYS MICROSTICTUM*, W.-M. and de N.

Isoteinon microstictum, Wood-Mason and de Nicéville, Journ. A. S. B., vol. 1v, pt. 2, p. 385, n. 232, pl. xvii, figs. 3, male ; 3a, female (1886).

HABITAT : Silcuri, Cachar (*Wood-Mason* and *de Nicéville*) ; Silchar, Cachar (*coll. de Nicéville*).

Genus PUDICITIA, nov.

MALE. FOREWING, slightly arched regularly and evenly throughout ; apex rather acute ; outer margin nearly straight, convex below the

* *Paduka*, Distant, and *Paduca*, Moore, were described in the same year (1886), and the former has priority. As, however, there is a slight difference in spelling, perhaps both may be allowed to stand.

apex ; *inner angle* rounded ; *inner margin* straight, considerably longer than the outer margin ; *costal nervure* ending before the apex of the discoidal cell ; *subcostal nervules* arising at nearly equal distances apart ; *discoidal cell* a little less than two-thirds as long as the costa ; *upper disco-cellular nervule* very short, stout, outwardly oblique ; *middle* disco-cellular strongly inwardly oblique, in the same straight line as the lower disco-cellular ; *lower* disco-cellular straight, shorter than the middle disco-cellular ; *second median* nervule arising well before the lower end of the cell ; *first* median arising about midway between the base of the wing and the origin of the second median nervule ; *submedian nervure* straight, with a narrow *brand* formed of modified black scales placed anteriorly against it along its basal second and third fifths. HINDWING, *costa* greatly arched at the base, less so to the apex ; *apex* much rounded ; *outer margin* convex, slightly emarginate at the termination of the first median nervule ; *abdominal* margin rounded ; *costal nervure* regularly curved throughout, ending at the apex of the wing ; *first subcostal nervule* arising well before the upper end of the cell ; *discoidal cell* reaching to the middle of the wing ; *discoidal nervule* obsolete ; *disco-cellular* nervules of equal length, slightly concave and slightly outwardly oblique ; *second median* nervule arising quite close to the lower end of the cell ; *first* median arising much nearer to the end of the cell than to the base of the wing, the distance between the base of the first and second median nervules is about three times that between the second and first ; *submedian* and *internal nervures* nearly straight. ANTENNÆ about half the length of the costa of the forewing, with a well-formed club, ending in a long whip-like point. PALPI densely scaly, second joint broad, pressed closely against the face, the third joint entirely concealed. THORAX very robust. ABDOMEN rather stout, tapering, extending well beyond the outer margin of the hindwing. LEGS, femur of hind-leg fringed beneath, tibia with two pairs of spines. FEMALE, a little larger than the male, lacking the sexual brand on the forewing, the abdomen stouter than in the male, shorter, not reaching beyond the outer margin of the hindwing. Type, "*Parnara*" *pholus*, de Nicéville.

Pudicitia is very near to *Erionota*, Mabille, of which genus *E. thrax*, Linnæus, is the type, differing therefrom in the presence of a

secondary sexual character on the forewing of the male ; in the middle disco-cellular nervule of that wing being straight throughout its course, in *Erionota* its posterior portion is strongly outwardly curved ; the second median nervule arises nearer to the lower end of the cell ; and the outer margin of the forewing is more upright, less inwardly oblique, owing to the inner margin being proportionally longer than in *Erionota*.

(1) PUDICITIA PHOLUS, de Nicéville.

Parnara pholus, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. iv, p. 172, n. 11, pl. B, fig. 3, female (1889).

HABITAT : Bhutan ; Khasi Hills.

Genus ACERBAS, nov.

MALE. FOREWING, triangular, rather narrow ; *costa* nearly straight, slightly arched only ; *apex* somewhat rounded ; *outer margin* at the apex nearly at right-angles to the *costa*, afterwards inwardly oblique, straight ; *inner margin* straight, distinctly longer than the outer margin ; *costal nervure* ending on the *costa* before the apex of the discoidal cell ; *subcostal nervules* counting from the base of the wing arising from the subcostal nervure at decreasing distances apart ; *discoidal cell* narrow, long, extending to two-thirds the length of the wing from the base ; *upper disco-cellular nervule* short, strongly outwardly oblique ; *middle disco-cellular* long, upright, concave ; *lower disco-cellular* straight, slightly inwardly oblique, slightly shorter than the middle one ; *lower discoidal nervule* in consequence of the greater length of the middle disco-cellular arising slightly nearer to the third median than to the upper discoidal nervule ; *second median nervule* arising far before the lower end of the cell ; *first median* arising near the base of the wing, arising at about the same distance from the base of the wing as the second arises from the lower end of the cell ; *submedian nervure* slightly curved ; *secondary sexual character* consists of a large inconspicuous patch of plush-like modified scales in the middle of the wing on the lower surface. HINDWING, much longer than broad ; *costa* greatly arched at base, gently arched from thence to apex ; *apex* rounded ; *outer margin* rounded, very slightly excavated on either side of the termination of the submedian

nervure ; *anal angle* rounded ; *abdominal margin* nearly straight ; *costal nervure* long, gently curved throughout its length, ending at the apex of the wing ; *first subcostal nervule* arising far before the apex of the cell ; *disco-cellular* nervules upright, slightly concave, of equal length ; *discoidal* nervule present, fine, the outer portion deflected downwards so that that portion lies nearer the third median than the upper discoidal nervule ; *second median* nervule arising close to the lower end of the cell ; *first median* arising about twice as far from the second as the second does from the third, arising much nearer the lower end of the cell than the base of the wing ; *discoidal cell* reaching to about the middle of the wing ; *submedian* and *internal nervures* straight. ANTENNÆ a little more than half the length of the costa of the forewing, the club moderate, with a fine terminal crook about twice as long as the greatest breadth of the club. PALPI broad, densely hairy, third joint but very slightly projecting above the second. THORAX slender, weak. ABDOMEN reaching just to the outer margin of the hindwing. LEGS, foreleg, tibia with an epiphysis ; hindleg, tibia with two pairs of spurs. FEMALE. Differs from the male only in the absence of the patch of modified scales on the underside of the forewing, and in having both wings somewhat broader. Type, "*Hesperia*" *anthea*, Hewitson.

Acerbas appears to me to be nearest allied to the genera *Eetion*, de Nicéville, and *Zea*, Distant, from the former the male may be readily distinguished by the quite different character of the secondary sexual characters, the lower disco-cellular nervule of the forewing is much shorter, and the first median nervule of the forewing arises nearer the base of the wing ; from the latter it differs in having the middle disco-cellular nervule of the forewing upright instead of strongly inwardly oblique. *Zea* also has no secondary sexual characters in the male whatever.

(1) ACERBAS ANTHEA, Hewitson.

Hesperia anthea, Hewitson, Desc. Hesp., p. 29, n. 17 (1868) ; *Plesioneura* (?) *anthea*, Distant, Rhop. Malay., p. 404, pl. xxxv, fig. 32, female (1886) ; *Cobalus ciliatus*, Butler, Trans. Linn. Soc. Lond., Zoology, second series, vol. i, p. 554, n. 2 (1877).

HABITAT : Singapore (*Hewitson*) ; Malacca (*Butler*) ; Borneo (*Doherty*, coll. *Elwes*) ; Daunat Range, Tenasserim, Burma ; Java (coll. de *Nicéville*) ; N.-E. Sumatra (coll. *Martin*).

This is apparently somewhat variable. My solitary female specimen from central Java, 1,500 feet, captured by Herr H. Fruhstorfer, has the white area on both sides of the hindwing more extensive than in the typical female example from Singapore figured by Distant. My single male from Burma and two from Java also differ slightly in the extent of the white area, the Javan specimens having it the most extensive of all.

42. *KERANA FULGUR*, de Nicéville, Pl. Q, Fig. 54, ♂.

K. fulgur, de Nicéville, Journ. A. S. B., vol. lxiii, pt. 2, p. 55, n. 46, pl. i, fig. 6, female (1894).

HABITAT : N.-E. Sumatra.

EXPANSE : ♂, 1.7 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* dark shining purplish-fuscous. *Cilia* concolorous. *Forewing* with a large discal chrome-yellow patch, occupying about half the surface, the patch is anteriorly bounded by the subcostal nervure, posteriorly it ends on the inner margin, its outer edge is evenly curved throughout, its inner edge is more irregular, from the subcostal nervure to the first median nervure it is upright and nearly straight, posterior to that vein it is directed inwardly obliquely, but does not reach the base of the wing on the inner margin. *Hindwing* has the basal third thickly clothed with long chrome-yellow setæ. UNDERSIDE, *both wings* with the ground-colour duller than on the upperside. *Forewing* with the chrome-yellow area paler, anteriorly continued almost to the costa. *Hindwing* as in the female. *Antennæ, palpi, eyes, head, and abdomen* as in the female; *thorax* above anteriorly clothed with very long fuscous setæ, gradually merging into a thick coat of chrome-yellow setæ, which lie over the base of the abdomen.

This species has been described from two pairs of specimens, the one (the types) is in my collection, the other in Dr. Martin's collection.

43. *LOTONGUS AVESTA*, Hewitson, Pl. Q, Fig. 56, ♀.

Hesperia avesta, Hewitson, Desc. *Hesp.*, p. 30, n. 19 (1868).

HABITAT : Sumatra (*Hewitson*); Pulo Laut, Borneo (*coll. Elwes*); Ataran Valley, Tenasserim, Burma.

EXPANSE : ♀, 1.7 inches.

DESCRIPTION : FEMALE. UPPERSIDE, *both wings* shining hair-brown. *Forewing* with two translucent ochreous-white spots placed inwardly

obliquely in the median interspaces, the upper the smaller, their outer edges rounded, their inner edges excavated. *Hindwing* immaculate. **UNDERSIDE**, *both wings* with the ground-colour as above. *Forewing* with a prominent pale yellow spot towards the end of the discoidal cell, anteriorly placed against the subcostal nervure, undividedly continued to the costa in a broad streak; the discal spots as on the upper-side; the inner margin as far as the first median nervule, but not quite reaching the outer margin, whitish. *Hindwing* with a straight somewhat narrow ante-discal pale yellow band from the abdominal margin to the costa, slightly interrupted by the submedian fold. *Cilia* of both wings anteriorly brown, posteriorly cinereous. *Antennæ* fuscous above, the club beneath pale yellow. *Palpi*, *head*, *thorax*, and *abdomen* above dark brown, beneath and *legs* pale yellow.

Nearest to *Lotongus sarala*, de Nicéville,* from the Khasi Hills (*de Nicéville*), Moupin and Omei-shan, both in Western China, taken in July (*Leech*), from the figure of the male of which it differs in having two instead of five spots on the upperside of the forewing, no discal patch on the upperside of the hindwing, the band on the underside of the hindwing half as wide, paler, and less prominently divided by the submedian fold, the cilia on the anal half of the hindwing is cinereous instead of orange-yellow, and the head, thorax, and body above entirely lacking the prominent iridescent green setose covering which is such a prominent and beautiful feature in *L. sarala*. Of the latter I possess three females from the Khasi Hills. Another very closely allied species is the "*Proteides*" *excellens* of Staudinger,† from Palawan in the Philippine Isles (*Staudinger*), N.-E. Sumatra (*colls. Hofrath, Dr. L. Martin and de Nicéville*), but that species has an additional small subapical spot (sometimes two) in the forewing, has no spot in the submedian interspace of that wing, and the yellow area in the hindwing on both sides is much wider even than it is in *L. sarala*. I identify this species with "*Hesperia*" *avesta* a little doubtfully, as Hewitson says that that species has the "outer" margin

* *Parnara sarala*, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. iv, p. 173, n. 12, pl. B, fig. 6, *female* (1889); id., *Leech*, Butt. from China, Japan, and Corea, p. 615, pl. xxxviii, fig. 11, *male* (1894).

† *Iris*, vol. ii, p. 141, pl. ii, fig. 6, *male* (1888).

of the forewing on the underside broadly grey, while my specimen has the inner margin thus coloured. In other respects the description of *H. avesta* agrees.

Described from a single example in my collection.

Genus CRETEUS, nov.

MALE. FOREWING, triangular ; *costa* very straight, slightly emarginate in the middle ; *apex* acute ; *outer margin* at first almost at right-angles to the *costa*, then straight and inwardly oblique ; *inner angle* rounded ; *inner margin* straight and equal in length to the outer margin ; *costal nervure* ending on the *costa* about opposite to the apex of the discoidal cell ; *first subcostal nervure* arising twice as far from the second as the second arises from the third ; *third* and *fourth* subcostals arising close together, the latter ending at the apex of the wing ; *subcostal nervure* as usual ending on the outer margin posterior to the apex of the wing ; *discoidal cell* narrow, less than two-thirds the length of the *costa* ; *upper disco-cellular nervure* stout (it is really the basal portion of the upper discoidal nervure), strongly outwardly oblique ; *middle* and *lower disco-cellulars* very straight, in one straight line, strongly inwardly oblique, the middle one half as long again as the lower ; *second median nervure* arising long before the lower end of the cell ; *first median nervure* arising nearer to the lower end of the cell than to the base of the wing, bearing a "male-mark," which consists of its second and third fifths counting from the base of the wing being distinctly thickened or swollen ; *submedian nervure* nearly straight, slightly curved forwards in the middle. HINDWING, *abdominal margin* heavily fringed with long hair-like scales ; *costa* strongly arched at base, then slightly curved only to the apex ; *apex* rounded ; *outer margin* rounded, but emarginate slightly about the termination of the first median nervure ; beyond this emargination the outer margin towards the anal angle has the appearance of being somewhat produced lobe-like ; *anal angle* rounded ; *abdominal margin* a little convex ; *costal nervure* a little curved only, ending at the apex of the wing ; *first subcostal nervure* arising well before the apex of the cell ; *discoidal cell* broad, reaching to the middle of the wing ; *disco-cellular nervures* short, nearly straight (slightly sinuous only), slightly outwardly oblique ; *discoidal nervure* wanting ; *median*

nervules all arising close together at the lower end of the cell, *second* median arising nearer to the first than to the third; *submedian* and *internal nervures* nearly straight, slightly bowed forwards. ANTENNÆ more than half the length of the costa of the forewing, the club stout, with a long terminal whip-like crook. PALPI, second joint very hairy; third joint also hairy, prominent, long, porrected forwards in front of the face in the same straight line as the axis of the body. THORAX robust. ABDOMEN rather slender, not quite reaching to the outer margin of the hindwing. LEGS, femur and tibia of all three legs most densely hairy in both sexes, but the male does not appear to be furnished with sexual tufts of hairs. FEMALE. Differs from the male only in the absence of the secondary sexual characters, and the much stouter abdomen. Type, "*Hesperia*" *cyrina*, Hewitson.

This genus appears to be nearest to *Lotongus*, Distant, of which the type is the "*Eudamus*" *calathus* of Hewitson, from the Daunat Range, Tenasserim, Burma; Malacca; Sumatra and Java. I possess male examples of *Lotongus schædia*, Hewitson (= *L. maculatus*, Distant), from Perak in the Malay Peninsula, and Selesseh in N.-E. Sumatra, and a female from the Battak Mountains also in N.-E. Sumatra, taken in March, and both sexes of *L. parthenope*, Weymer, from Nias, from which *C. cyrina* differs in having the third joint of the palpi much longer; the middle and lower disco-cellular nervules of the forewing much more strongly inwardly oblique, in *Lotongus* they are nearly upright; and in the presence in the male of the swollen first median nervule in the forewing, and in the very heavy setose clothing of the abdominal area of the hindwing on the upperside, both these secondary sexual characters being absent in *Lotongus*. The legs too in *Creteus* in both sexes are far more densely setose than in *Lotongus*.

(1) CRETEUS CYRINA, Hewitson.

Hesperia cyrina, Hewitson, Ann. and Mag. of Nat. Hist., fourth series, vol. xviii, p. 450 (1876); *Parnara parca*, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. iv, p. 174, n. 13, pl. B, fig. 10, *female* (1889).

HABITAT: Sikkim; Bhutan; Khasi Hills.

Genus ZELA, nov.

MALE. FOREWING, *costa* straight, a little arched only at the base and apex; *apex* acute; *outer margin* almost straight, a little convex

only ; *inner angle* somewhat rounded ; *inner margin* straight, of exactly the same length as the outer margin ; *costal nervure* ending on the costa beyond the apex of the cell ; *subcostal nervules* arising at decreasing distances apart ; *upper disco-cellular* nervule rather long, strongly outwardly oblique ; *middle* disco-cellular upright, strongly concave ; *lower* disco-cellular straight, strongly inwardly oblique, a little longer than the upper, much shorter than the middle disco-cellular ; *second median* nervule arising far before the lower end of the cell ; *first* median arising a little nearer to the base of the wing than to the lower end of the cell ; *submedian nervure* straight ; the *secondary sexual character* consists of an oblique linear glandular streak of very thick scales extending on the upperside from about the middle of the submedian nervure to just before the base of the second median nervule, the lower portion of the streak in the submedian interspace is nearly upright, and divided into two by the internervular fold, the anterior portion is greatly curved outwardly. HINDWING, somewhat circular, longer than broad ; *costa* much arched at base, less arched to apex ; *apex* rounded ; *outer margin* very convex to anal angle, slightly emarginate about termination of first median nervule ; *anal angle* rounded ; *abdominal margin* straight ; *costal nervure* arched, ending at the apex of the wing ; *first subcostal nervule* arising far before the apex of the cell ; *discoidal cell* broad, short, not nearly reaching to the middle of the wing ; *discoidal nervule* present, but very attenuated ; *disco-cellular* nervules upright, concave, of equal length ; *second median* nervule arising a little before the lower end of the cell ; *first median* arising about twice as far from the second as the second does from the first, arising much nearer to the lower end of the cell than to the base of the wing ; *submedian* and *internal nervures* straight. ANTENNÆ very long, a little less than two-thirds as long as the costa of the forewing, the club moderate, terminating in a long curved whip-like point. PALPI broad, densely hairy, the third joint hidden beneath the second. THORAX robust. ABDOMEN rather slender, not reaching to the anal angle of the hindwing. LEGS, hindleg, femur and tibia heavily fringed with long hairs, with two pairs of spines. FEMALE. Differs from the male only in the wings being broader, and in lacking the male brand on the upperside of the forewing. Type, *Zela zeus*, de Nicéville.

This genus is probably nearest to *Zea*, Distant, of which the "*Hesperia*" *mytheca* of Hewitson is the type. *Zea* has never been fully diagnosed, the only characters given are as follows:—"FOREWING. Outer margin subequal [instead of a little longer] in length to inner margin; upper disco-cellular nervule longer than lower; moderately oblique; base of second median nervule about twice as far apart from that of the lower as from that of the upper median nervule. HINDWING. Outer margin sinuated or more or less lobately produced near anal angle." These characters are drawn up from a female specimen. But the type species of *Zela* may instantly be known from the type species of *Zea*, if Mr. Distant's figure is to be relied on, by the hindwing being far shorter. *Zela* is also allied to the genera *Hidari*, Distant, and *Unkana*, Distant,* but may at once be distinguished from these by the middle disco-cellular nervule of the forewing being upright instead of strongly inwardly oblique; the outer and inner margins of the forewing also are of equal length, in both these genera the inner margin is much shorter than the outer. Mr. Distant says that the outer margin in *Zea* is subequal (instead of a little longer) in length to the inner margin, but according to my view of measurement (taken from his figure of the type species) the outer margin is considerably longer than the inner. The genus appears similar to *Perichares*, Scudder, confined to tropical America, as regards the secondary sexual characters. In general appearance it most resembles species of the genus *Matapa*, Moore.

44. ZELA ZEUS, n. sp., Pl. Q, Fig. 57, ♂.

HABITAT: Pulo Laut, Borneo; N.-E. Sumatra.

EXPANSE: ♂, 1.7; ♀, 1.8 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* dark shining hair-brown. *Forewing* with four hyaline shining stramineous spots:—an oval one touching the median nervule towards the outer end of the discoidal cell, a small round one in the subcostal interspace (absent in Sumatran specimens), a round one four times as large as the last-named spot towards the base of the second median interspace, a reversed comma-shaped spot posterior to the last in the first median interspace, the three last-named spots in a straight line; the sexual brand placed just within the posterior spot deep black, inconspicuous. *Cilia*

* Captain Watson has sunk this genus under *Erionota*, Mabilie.

cinereous. *Hindwing* immaculate. *Cilia* anteriorly cinereous, posteriorly orange. **UNDERSIDE**, *both wings* paler and duller than above, the markings similar. *Eyes* crimson. *Antennæ* black, the club beneath whitish. *Head, body, and legs* concolorous with the wings. **FEMALE**. Exactly as in the male except that the wings are broader, and it has no "male-mark."

On the upperside this species strongly reminds one of *Zea mythea*, Hewitson,* but differs in two particulars. In that species the spot in the cell of the forewing lies against the subcostal instead of the median nervure, and the subapical spot is wanting; this latter feature is also found in specimens from Sumatra. The underside of the hindwing of the two species is totally dissimilar; *Z. mythea* has a broad discal silvery-white fascia from the costa to the submedian fold, which is not found in *Z. zeus*.

Described from a single example (the type) taken in June, 1891, by Mr. W. Doherty, in the island of Pulo Laut, Borneo, and kindly given to me by Mr. H. J. Elwes. Subsequently Dr. L. Martin obtained two males in May from the Battak Mountains and Selesseh, and I a single female, all from N.-E. Sumatra.

Genus ZAMPA, nov.

MALE. FOREWING, *costa* nearly straight, a little arched only at the base and apex; *apex* acute; *outer margin* slightly convex only; *inner angle* somewhat rounded; *inner margin* strongly bowed outwardly in the middle, a little shorter than the outer margin; *costal nervure* barely reaching to the apex of the discoidal cell; *subcostal nervules* arising at nearly equal distances apart, arising slightly nearer the one to the other progressively from the base of the wing; *discoidal cell* narrow, reaching to beyond the middle of the wing; *upper disco-cellular nervule* short, straight, strongly outwardly oblique; *middle disco-cellular* nearly upright, a little inwardly oblique only, posteriorly strongly concave; *lower disco-cellular* quite straight, strongly inwardly oblique, shorter than the middle disco-cellular; *second median nervule* arising well before the lower end of the cell; *first median* arising at about midway between the base of the wing and the lower end of the cell; *submedian nervure* straight. **HINDWING**, longer than broad; *costa*

* Distant, Rhop. Malay., p. 377, n. 1, pl. xxxv, fig. 7, female (1886).

greatly arched at base, less arched to costa ; *apex* rounded ; *outer margin* well rounded, slightly excised at the end of the submedian nervure ; *anal angle* rounded ; *abdominal margin* convex ; *costal nervure* slightly curved, ending at the apex of the wing ; *first subcostal nervule* arising rather close to the apex of the cell ; *discoidal cell* broad, very short, not nearly reaching to the middle of the wing ; *disco-cellular nervules* very short, slightly outwardly oblique, concave ; *discoidal nervule* absent ; *median nervure* greatly distorted, instead of being straight (or nearly so) throughout its length,* the portion between the bases of the first and second median nervules is inclined forwards, and the portion between the bases of the second and third median nervules is inclined still more forwards, almost indeed at right angles to the normal direction of the median nervure, thus giving the outer end of the cell a most unusual shape, being composed of four nearly straight portions of nearly equal length, *viz.* :—(1) that portion of the subcostal nervure from the point where the first subcostal nervule arises to the base of the second subcostal, (2) the disco-cellular nervules, (3) that portion of the median nervure between the bases of the third and second median nervules, and (4) that portion of the median nervure between the bases of the second and first median nervules ; *second median nervule* arising well before the end of the cell, at about the same distance from its end as the first subcostal arises from the apex of the cell ; *first median* arises a little further from the second than the second does from the first ; *submedian* and *internal nervures* straight ; *secondary sexual characters* consist of a very dense patch of long setæ springing from about the middle of the cell on the upperside and lying across the bases of the median nervules ; on the underside of the wing the basal portions for some distance of the second subcostal, third, and second median nervules are much swollen, this character being correlated with the tuft of hairs on the upperside of the wing. ANTENNÆ very long, a little less than two-thirds the length of the costa of the forewing ; the club elongated, moderate, the whip-like apex long. THORAX robust. ABDOMEN rather slender, not quite reaching to the anal angle of the hindwing. Type, *Zampa zenon*, de Nicéville.

* I reckon this vein to terminate at the point where the third median nervule arises.

Probably nearly allied to *Zela*, de Nicéville, but the secondary sexual characters are entirely different. To compare the two genera effectually, the females of both the type species are required. The secondary sexual characters of the hindwing described above are probably unique. The bowed-out inner margin of the forewing with the same portion on the underside highly polished is doubtless also a male characteristic.

45. ZAMPA ZENON, n. sp., Pl. Q, Fig. 58, ♂.

HABITAT : Pulo Laut, Borneo.

EXPANSE : ♂, 1·8 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* shining dark ochreous-brown. *Forewing* with an oval hyaline white spot at the base of the second median interspace, a similar comma-shaped spot a little obliquely inwardly below the first spot in the first median interspace, the convexity of the spot directed to the base of the wing. *Cilia* cinereous. *Hindwing* unmarked ; the sexual tuft of long recumbent hairs in the middle of the wing inconspicuous and concolorous with the wing. *Cilia* anteriorly narrow, cinereous, posteriorly becoming much longer and orange-coloured. UNDERSIDE, *both wings* have the ground-colour paler than on the upperside. *Forewing* has the apex and outer margin broadly paler, this pale area dying away to nothing towards the anal angle of the wing ; the inner margin as far as the median nervure and first median nervule pale and highly polished ; the disco-cellular nervules defined by a narrow pale line ; the two hyaline spots as on the upperside. *Hindwing* has the disco-cellular nervules defined by a narrow pale line as on the forewing ; otherwise unmarked.

In general appearance this species resembles *Z. zeus*, de Nicéville, described above, but has only two instead of three or four spots on the forewing. On the underside of the forewing the present species has a broad outer pale fascia, which is not found in *Z. zeus*.

Described from a single example in Mr. H. J. Elwes' collection captured in June, 1891, by Mr. W. Doherty.

Genus MIMAS, nov.

MALE. FOREWING, *costa* nearly straight ; *apex* acute ; *outer margin* slightly convex ; *inner angle* rounded ; *inner margin* straight, as long as the outer margin ; *costal nervure* not reaching to the apex of the

discoidal cell ; *first subcostal nervule* arising nearer to the apex of the cell than to the base of the wing ; *second, third and fourth* subcostals arising progressively nearer together ; *discoidal cell* narrow, less than two-thirds the length of the forewing ; *upper disco-cellular nervule* short, strongly outwardly oblique ; *middle* disco-cellular very long, strongly inwardly oblique, at its posterior end curved outwards ; *lower* disco-cellular short, half the length of the middle disco-cellular, strongly inwardly oblique and in the same straight line with the middle disco-cellular ; *median nervure* between the bases of the third and second median nervules distinctly deflected forwards ; *lower discoidal nervule* curved forwards in the basal portion of its length, lying about midway between the third median and upper discoidal nervules for the greater portion of its length, but arising considerably nearer the third median ; *second median* nervule arising long before the lower end of the cell ; *first* median arising nearer to the base of the wing than to the lower end of the cell ; *submedian nervure* straight. HINDWING, much longer than broad ; *costa* much arched at the base, thence slightly arched to the apex ; *apex* rounded ; *outer margin* evenly rounded to the anal angle, slightly, if at all, excavated at the end of the first median nervule ; *anal angle* rather square ; *abdominal margin* straight ; *costal nervure* slightly curved only, ending at the apex of the wing ; *first subcostal nervule* arising well before the apex of the cell ; *disco-cellular* nervules sinuous, outwardly oblique ; *discoidal* nervule absent ; *second median* nervule arising close to the lower end of the cell ; *first* median arising about twice as far from the second as the second does from the first, arising much nearer the end of the cell than the base the wing ; *submedian* and *internal nervures* straight. ANTENNÆ long, more than half as long as the costa of the forewing, the club moderately stout, the terminal crook acuminate, long, about twice as long as the breadth of the club. HEAD broad. PALPI, second joint broad, very hairy, third joint rather short, naked, conical. THORAX robust. ABDOMEN rather slender, not reaching to the outer margin of the hindwing. LEGS, foreleg, tibia with an epiphysis ; hindleg, tibia with two pairs of spurs. Type, "*Ismene*" *miltias*, Kirsch.

This genus would appear to find its natural position in the subfamily *Pamphilinæ*, Section B, of Captain E. Y. Watson's classification, and to come close to the genus *Carystus* of Hübner, *vide* Proc. Zool. Soc.

Lond., 1893, p. 93, the type of which is *C. jolus*, Cramer, from South America. Of the Asiatic genera hitherto diagnosed it comes nearest to *Lotongus*, Distant, from which, however, it may instantly be known by the inner and outer margins of the forewing being of equal length, in *Lotongus* the inner is much shorter than the outer margin. The only species of this genus known to me have very much the aspect from the upperside of species of the genus *Ismene*, Swainson, but they differ from all species of the *Ismene* group in the form of the antennæ and palpi and in the neurulation. The male has a short rather indistinct discal black streak of modified scales running obliquely and continuously from the origin of the third median nervule to just beyond the first median nervule and appearing again as a raised spot on the submedian nervule.

(1) MIMAS MILTIAS, Kirsch.

Ismene miltias, Kirsch, Mitth. K. Zool. Museum, Dresden, vol. i, pt. 2, p. 128, n. 127, pl. vii, fig. 6, female (1877).

HABITAT : Jobi Island near New Guinea (*Kirsch*) ; Humboldt's Bay, North New Guinea (*de Nicéville*).

DESCRIPTION : MALE. UPPERSIDE, *both wings* and *cilia* dark shining bronzy-brown. *Forewing* with the basal third of the surface from the costa to the inner margin rich ferruginous, and with the black streak peculiar to the genus on the disc. *Hindwing* also with the basal third of the surface and the abdominal margin almost to the anal angle rich ferruginous. UNDERSIDE, *forewing* with rather more than the basal third of the costa and extending outwardly into the discoidal cell rich ferruginous. *Hindwing* with the basal half of the costa extending slightly into the cell rich ferruginous. *Thorax* above clothed with ferruginous setæ. *Abdomen* dark brown above, the segments beneath narrowly banded with ochreous. *Antennæ* black, the club beneath cinereous.

Herr Th. Kirsch does not mention the sex of the example of this species which he described, but from the coloration and stoutness of the abdomen, as shewn in his figure, I would judge it to have been a female.

Described from a single example in my collection kindly given to me by its capturer, Mr. William Doherty.

46. (2) MIMAS MELIE, n. sp., Pl. Q, Fig. 55, ♀.

HABITAT : New Guinea.

EXPANSE : ♀, 1.8 inches.

DESCRIPTION : FEMALE. UPPERSIDE, *both wings* shining fuscous with a distinct vinous sheen in some lights. *Cilia* fuscous. *Forewing* with the basal fourth from the costa to the inner margin clothed with long grey setæ. *Hindwing* with the basal third clothed with long grey setæ. UNDERSIDE, *both wings* with the ground-colour as above. *Forewing* with six subapical small white spots placed between the veins, the anterior one on the costa lies between the second and third subcostal nervules ; the second spot, about twice as long as the first, lies between the third and fourth subcostals ; the third spot is the smallest of all and lies between the fourth subcostal nervule and the terminal portion of the subcostal nervure (the fifth subcostal nervule of some writers) ; the fourth spot lies in the subcostal interspace and is equal in size to the fifth spot ; the fifth spot lies in the upper discoidal interspace ; the sixth spot is of the same size as the two above it, and lies in the lower discoidal interspace ; there is a large transverse spot in the discoidal cell towards its end, the spot slightly constricted at the middle ; a still larger spot in the first median interspace, its inner edge convex, its outer edge concave, extending completely across the interspace ; posterior to this again is a large quadrate patch, almost reaching the outer margin, occupying the outer half of the submedian interspace, and extending posteriorly to the inner margin, along which it is continued towards the base of the wing. *Hindwing* with an irregularly-shaped discal white spot placed between the second subcostal and upper median nervules (there is no discoidal nervule in this genus, so the spot really extends across two interspaces) ; another round spot about twice the size of the first spot at about the middle of the submedian interspace. *Thorax* and base of the *abdomen* above clothed with long grey setæ, the rest of the *abdomen* fuscous narrowly banded with grey. *Antennæ* black, the base of the club prominently white. *Palpi* and *head* beneath grey. *Legs* and *thorax* beneath fuscous.

This is a very conspicuously-marked species, especially so on the underside. I do not know any species to which it is even remotely allied.

Described from a single example in my collection presented to me by Mr. W. Doherty, who captured it himself at Humboldt's Bay, North-West New Guinea.

Genus EETION, nov.

MALE. FOREWING, elongated, narrow; *costa* nearly straight, slightly arched only; *apex* acute; *outer margin* at the apex nearly at right-angles to the *costa*, afterwards strongly inwardly oblique, straight; *inner margin* straight, equal in length to the outer margin; *costal nervure* ending on the *costa* before the apex of the discoidal cell; *subcostal nervules* counting from the base of the wing arising from the subcostal nervure at decreasing distances apart; *discoidal cell* narrow, long, extending to nearly two-thirds the length of the wing from the base; *upper disco-cellular nervule* short, strongly outwardly oblique; *middle* disco-cellular long, recurved, strongly inwardly oblique; *lower* disco-cellular short, nearly half the length of the middle but twice as long as the upper disco-cellular, strongly inwardly oblique; *lower discoidal* nervule in consequence of the greater length of the middle disco-cellular arising much nearer to the third median than to the upper discoidal nervule; *second* median nervule arising far before the lower end of the cell; *first* median arising a little farther from the second than that nervule does from the third, arising much nearer to the base of the wing than to the lower end of the cell; *submedian nervure* slightly curved; *secondary sexual characters* consist on the upperside of the wing of a narrow inwardly oblique band or line of scales arising from the second median nervule just after its origin, extending across the first median interspace, and ending on the submedian internervular fold; and on the underside of the wing of a strong tuft or brush of hairs directed forwards and arising near the base of the wing in the middle of the sutural area. HINDWING, much longer than broad; *costa* greatly arched at base, gently arched from thence to the apex; *apex* rounded; *outer margin* regularly curved to the termination of the submedian nervure, beyond which the margin is produced lobe-like; *anal angle* rounded; *abdominal margin* nearly straight; *costal nervure* long, gently curved throughout its length, ending at the apex of the wing; *first subcostal nervule* arising far before the apex of the cell; *disco-cellular* nervules slightly concave, slightly

outwardly oblique, the upper a little longer than the lower; *discoidal* nervule apparently present, but very fine; *second median* nervule arising well before the lower end of the cell; *first median* arising about twice as far from the second as the second does from the third, arising much nearer the lower end of the cell than the base of the wing; *discoidal cell* broad, short, not nearly reaching to the middle of the wing; *median nervure* slightly anteriorly deflected between the bases of the first and second, strongly deflected between the bases of the second and third median nervules; *submedian* and *internal* nervures straight. ANTENNÆ a little more than half the length of the costa of the forewing, the club moderate, with a long terminal whip-like crook, about three times as long as the greatest breadth of the club. PALPI broad, densely hairy, third joint but very slightly projecting beyond the second. THORAX rather robust. ABDOMEN reaching just to the outer margin of the hindwing. LEGS, foreleg, tibia with an epiphysis; hindleg, tibia with two pairs of spurs. FEMALE. Differs from the male only in the absence of the brand on the upperside and tuft of hairs on the underside of the forewing. Type, "*Hesperia*" *elia*, Hewitson.

This genus comes into Capt. E. Y. Watson's subfamily *Pamphilinæ*, Section B (*vide* Proc. Zool. Soc. Lond., 1893, p. 70), but differs from the genera in that section, though agreeing with some of those in Section C, in having a long crook to the club of the antenna. It is allied to *Lotongus*, Distant, *Cretens*, *Zela*, *Zampa*, de Nicéville, *Zea*, *Hidari*, Distant, and *Mimas*, de Nicéville, but the shape of the wing will separate it from all these except *Zea*, to which it is nearest allied, but the second median nervule of the forewing is much more remote from the end of the discoidal cell, being almost equidistant between the first and third. The secondary sexual characters of the male are unique in the *Hesperiidæ* as far as I am aware, no other species having both a brand above and tuft of hairs below the forewing.

(1) EETION ELIA, Hewitson.

Hesperia elia, Hewitson, Trans. Ent. Soc. Lond., third series, vol. ii, p. 489, n. 9 (1866); *Carystus elia*, Druce, Proc. Zool. Soc. Lond., 1873, p. 359, n. 2; *Cobalus elia*, Butler, Trans. Linn. Soc. Lond., Zoology, second series, vol. i, p. 554, n. 1 (1877); *Unkana elia*, var., Distant, Rhop. Malay., p. 370, n. 2, pl. xxxiv, fig. 25, *female* (1886); id., Watson, Proc. Zool. Soc. Lond., 1893, p. 123; *Hesperia eburus*, Plötz, Berl. Ent. Zeitsch., vol. xxix, p. 226, n. 8 (1885); idem, id., Stet. Ent. Zeit., vol. xlvii, p. 92, n. 1216 (1886).

HABITAT : Sumatra (*Hewitson* and *colls. Martin* and *de Nicéville*) ; Borneo (*Druce*) ; Malacca (*Butler* and *Plötz*) ; Province Wellesley and Singapore (*Distant*) ; Perak (*coll. de Nicéville*).

Genus GEHENNA, Watson.

Gehenna, Watson, Proc. Zool. Soc. Lond., 1893, p. 108, n. 27.

MALE. FOREWING, *costa* nearly straight ; *apex* acute ; *outer margin* nearly straight, slightly convex only ; *inner angle* acute ; *inner margin* straight, about the same length as the *outer margin* ; *costal nervure* ending on the *costa* before the *apex* of the *discoidal cell* ; *subcostal nervules* arising from the *subcostal nervure* at decreasing distances apart from the base of the wing ; *discoidal cell* more than half but less than two-thirds as long as the wing ; *upper disco-cellular nervure* short, straight, strongly outwardly oblique ; *middle disco-cellular* very long, upright, straight ; *lower disco-cellular* short, about the same length as the *upper disco-cellular*, straight, inwardly oblique ; *lower discoidal nervule* arises therefore much nearer to the third median than to the upper discoidal nervule ; *second median nervule* arises well before the lower end of the cell ; *first median* arises close to the base of the wing ; *submedian nervure* straight. HINDWING, elongated, much longer than broad ; *costa* much arched at the base, then nearly straight to the apex ; *outer margin* curved regularly and evenly to the anal angle, not at all emarginate ; *anal angle* rounded ; *abdominal margin* straight ; *costal nervure* ending at the apex of the wing ; *costal* and *subcostal nervures* with an apparently common origin, but soon separating, at the point of separation the two veins assume the form of a "tuning-fork ;" *first subcostal nervule* arising long before the apex of the cell ; *discoidal cell* rather long, reaching to the middle of the wing ; *disco-cellular nervules* sinuous, the general direction being slightly outwardly oblique ; *discoidal nervule* obsolete ; *second median nervule* arising a little before the lower end of the cell ; *first median* arising also close to the end of the cell, not quite twice as far from the second as the second arises from the third ; *submedian* and *internal nervures* straight. ANTENNÆ long, more than half (nearly two-thirds) as long as the *costa* of the forewing ; club moderately large, elongated, with a rather long and fine apex or point. PALPI very broad, densely hairy, porrect, the third joint very small. HEAD

broad. THORAX broad. ABDOMEN rather stout, of the same length as the hindwing. LEGS, hindleg with the tibia slightly fringed, and furnished with two pairs of spines. *Secondary sexual characters* consist on the forewing of a dense tuft of long hairs attached to the base of the inner margin and turned under and forwards; the basal portions of the median and submedian nervures on the underside furnished with raised lines of scales: and on the hindwing there is a small oval oblique streak on the upperside close to the base of the wing, this gland is almost certainly correlated with the curious "tuning-fork" shape of the base of the costal and subcostal nervures.

Gehenna appears to be nearest to the genus *Halpe*, Moore, from which it differs in the forewing in the first median nervule arising much nearer to the base of the wing; the male also has a tuft of hairs on the inner margin near the base of the wing; and the swollen bases of the median and submedian nervures are not found in any species of *Halpe*; in the hindwing it differs in the curious "tuning-fork" bifurcation of the costal and subcostal nervures, with an oval gland in the male placed between the bases of the prongs of the fork; in *Halpe* in the male only the first subcostal nervule makes a "tuning-fork" at its origin from the subcostal nervule; in the female these veins are normal; the discoidal cell is much longer, extending to at least the middle if not beyond the middle of the wing; the first subcostal nervule arises much nearer the base of the wing; the hindwing too differs greatly in shape, being very much longer than broad in the type species of *Halpe* (which I take to be *H. moorei*, Watson, from which Mr. Moore must have diagnosed his genus, and not from the true *H. beturia*, Hewitson, from Celebes), the hindwing is exactly as broad as long in both sexes. I have drawn up this diagnosis from *Gehenna græce*, de Nicéville, having been under the impression till Captain Watson pointed out my oversight that the genus was undescribed. The description is published as it is somewhat more full than Captain Watson's, which was drawn up from "*Hesperia*" *abima*, Hewitson, the only other known species in the genus.

47. GEHENNA GRÆÆ, n. sp., Pl. Q, Fig. 59, ♂.

HABITAT : N.-E. Sumatra.

EXPANSE : ♂, 1.4 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* shining dark reddish-brown. *Forewing* with five semi-transparent ochreous spots, two placed inwardly obliquely at the end of the discoidal cell, the upper small and round, the lower three times as large as the upper and linear, a small round subapical one placed in the subcostal interspace, a rounded one of about the same size as the posterior spot in the cell towards the base of the second median interspace, a triangular one, the largest of all, with its base against the base of the second median nervule, its apex against the submedian nervure in the first median interspace. *Hindwing* immaculate. UNDERSIDE, *both wings* as above, but the costa and apex widely of the forewing, and the whole of the hindwing frosted over with scattered golden-yellow scales. *Forewing* with the hyaline spots as above; the sexual tuft of hairs at the base of the inner margin turned under and forwards black. *Hindwing* immaculate. *Cilia* of the forewing concolorous with the wings; of the hindwing paler, dusky ochreous. *Antennæ* black; the club beneath, all except the whip-like termination, ochreous-white. *Head, palpi, thorax, and abdomen* above dark reddish-brown; beneath and *legs* greenish-ochreous.

Near to "*Hesperia*" *abima*, Hewitson,* from Macassar in Celebes, but that species appears to have a single deeply sinuated spot instead of two in the discoidal cell of the forewing, and both wings are much clothed with ochreous hair. On the underside of the hindwing in *G. abima* there are five undefined brown spots, in *G. grææ* that wing is immaculate.

Described from a single example captured by Hofrath Dr. L. Martin himself in the virgin forest at Namoe Oekor, N.-E. Sumatra, on 23rd January, 1893.

Genus ITON, nov.

MALE. FOREWING, triangular; *costa* nearly straight, slightly arched at the base; *apex* acute; *outer margin* convex at apex, then straight; *inner angle* rounded; *inner margin* straight, of the same length

* Ann. and Mag. of Nat. Hist., fourth series, vol. xix, p. 83 (1877).

as the outer margin ; *costal nervure* ending on the margin a little before the apex of the discoidal cell ; *subcostal nervules* arising at decreasing distances apart ; *discoidal cell* narrow, less than two-thirds the length of the costa ; *upper disco-cellular nervule* stout, straight, short, strongly outwardly oblique ; *middle* disco-cellular thin, long, nearly twice as long as the lower disco-cellular, strongly inwardly oblique, at first straight, the posterior portion curved outwardly ; *lower* disco-cellular short, straight, in the same straight line as the middle disco-cellular ; *second median* nervule arising far before the lower end of the cell ; *first* median arising nearer to the lower end of the cell than to the base of the wing, rising in fact about twice as far from the second median as that vein does from the third ; *submedian nervure* bowed, the curvature being in the direction of the costa ; a long and thick *tuft of hairs* (in the type species only) attached to the wing-membrane on the underside towards the base of the wing between the submedian nervure and the inner margin, the tuft turned forwards. HINDWING, much longer than broad ; *costa* strongly arched at base, thence straight to apex ; *apex* well rounded ; *outer margin* convex on the whole, but between the second median nervule and the submedian nervure it is emarginate ; *anal angle* well rounded ; *abdominal margin* convex ; *costal nervure* ending at the apex of the wing, well curved throughout its length ; *first subcostal nervule* arising well before the apex of the cell ; *discoidal cell* short, not reaching to the middle of the wing, broad ; *disco-cellular nervules* thin, nearly straight, outwardly oblique ; *discoidal* nervule wanting ; *second median* nervule arising well before the lower end of the cell ; *first* median arising about as far (perhaps a little farther) from the second as the second does from the third, all three median nervules crowded together near the lower end of the cell ; *submedian* and *internal nervures* straight. FEMALE differs from the male in lacking the tuft of hairs on the forewing, the hindwing is rather broader, and the disco-cellular nervules are strongly concave instead of nearly straight. ANTENNÆ almost exactly half the length of the costa of the forewing, with a long well-formed club ending in a short whip-like terminal crook. PALPI broad, second joint densely hairy, third joint very short. THORAX robust. ABDOMEN not quite reaching to the anal angle of the hindwing when the butterfly is at rest

with its wings folded over its back. LEGS, hindleg, tibia with two pairs of spines. Type, "*Hesperia*" *semamora*, Moore.

Capt. Watson in Proc. Zool. Soc. Lond., 1893, p. 123, places *I. semamora*, Moore, and *I. watsonii*, de Nicéville, doubtfully in the genus *Unkana*, Distant, of which *U. batara*, Distant (= *I. attina*, Hewitson, = *G. cruda*, Herrich-Schäffer) is the type. The type of *Iton* differs from the type of *Unkana* in the following characters:—The forewing is not so elongated, the apex is less acute, the outer margin is convex instead of straight, it is also of the same length as the inner margin, instead of being considerably longer; the middle disco-cellular is nearly twice as long as the lower, instead of being exactly the same length; there is a sexual tuft of hairs in the type species of *Iton* which is lacking in *Unkana*; in the hindwing the disco-cellular nervules are much more outwardly oblique, instead of being nearly upright; lastly, the antennæ are shorter with a much shorter crook, in *Unkana* the antennæ are more than half the length of the costa of the forewing. Captain Watson has recently sunk the genus *Unkana* under *Erionota*, Mabille. The genus *Iton* contains but two species, the first with a tuft of hairs in the male, the second without. The position of this tuft is, as far as I know, unique in the family, except in the genus *Eetion*, de Nicéville, in which there is a similar tuft.

(1) ITON SEMAMORA, Moore.

Hesperia semamora, Moore, Proc. Zool. Soc. Lond., 1865, p. 791; *Hesperia* (?) *semamora*, de Nicéville, Journ. A. S.B., vol. 1, pt. 2, p. 60, n. 125 (1881); *Parnara semamora*, Watson, Hesp. Ind., p. 46, n. 61 (1891); *Unkana semamora*, id., Proc. Zool. Soc. Lond., 1893, p. 123; id., Swinhoe, Trans. Ent. Soc. Lond., 1893, p. 328, n. 496; *Hesperia barea*, Hewitson, Trans. Ent. Soc. Lond., third series, vol. ii, p. 490, n. 12 (1866).

HABITAT: Bengal (*Moore*); Sikkim; Khasi Hills; throughout Burma; Perak; N.-E. Sumatra; North Borneo.

As will be seen from the localities given above, the species has a very wide range. I have specimens in my collection from Sikkim to Sumatra and North Borneo. It is omitted from Mr. Elwes' Catalogue of the Lepidoptera of Sikkim, and from Mr. Distant's Rhopalocera Malayana. The description of "*Hesperia*" *barea*, Hewitson, from Sumatra, agrees exactly with this species.

(2) ITON WATSONII, de Nicéville.

Parnara watsonii, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. v, p. 223, n. 19 (1890); idem, id., l. c., vol. vi, p. 388, pl. G, fig. 29, male (1891); id., Watson, Hesp. Ind., p. 46, n. 62, (1891); *Unkana watsonii*, id., Proc. Zool. Soc. Lond., 1893, p. 123.

HABITAT: Burma.

I possess a long series of this species from Telin Yaw, Younzalin, Papun, and Thoungyin, taken in December, February, and March by Captain E. Y. Watson and Lieutenant-Colonel C. T. Bingham.

The type of the genus *Unkana* is the "*Hesperia*" *attina*, Hewitson 1866), = "*Hesperia*" *latreillei*, Felder (1867), = "*Goniloba*" *cruda*, Herrich-Schäffer (1869), = *Unkana batara*, Distant (1886).

I possess specimens from Bassein, Henzada, and Maulmain (all in Burma) and from Java. It occurs also in Malacca, Singapore, N.-E. Sumatra, and again in Palawan and Mindanao, two of the Philippine Isles. In the verandah of Colonel C. T. Bingham's bungalow at Maulmain, during the month of October, the butterfly comes commonly to the flowers of the Eucharist Lilies to rob the honey. The males are far commoner than the females. The flight of this large "Skipper" is very swift and headlong, but when settled on the flowers busily engaged drinking the honey it may be caught between the fingers. Mr. Distant, in describing *Unkana batara*, a MS. name of Mr. Moore's, did not recognise that it is the opposite (male) sex of *U. attina*, owing doubtless to the very great superficial dissimilarity between the sexes. My own observations on the live animals had, however, convinced me of the fact before Herr Georg Semper had published the same conclusion in his Butterflies of the Philippine Isles, p. 288, n. 417.

48. BAORIS (*Parnara*) PHILOTAS, n. sp., Pl. Q, Fig. 60, ♂.

HABITAT: North Kanara and Trevandrum, both in South India.

EXPANSE: ♂, 1·2 inches.

DESCRIPTION: MALE. UPPERSIDE, both wings dark brown with a vinous reflection. Cilia cinereous. Forewing with a quadrate dot at the base of the second median interspace; a quadrate spot, four times as large as the dot anterior to it, near the middle of the first median interspace. Hindwing with two hyaline white dots just beyond the

discoidal cell divided by the second median nervule ; the base of the wing clothed with long ochreous-green setæ. **UNDERSIDE**, *both wings* dark purplish-brown, this ground-colour appearing, however, only broadly on the inner margin of the forewing, all the rest of the surface (as seen under a strong magnifying glass) being thickly covered with "old-gold" coloured scales ; the pair of spots on each wing as on the upperside. *Antennæ*, *head* and *body* above fuscous ; *antennæ* beneath have the base of the club, *palpi*, *legs* and *body* beneath pale ochreous.

This distinct little species appears to be nearest to *B. bevani*, Moore, with which it agrees in size, but instead of from five to eight spots on the forewing and three to five on the hindwing, it has a pair of spots on each wing only.

Described from a single example taken in August at Trevandrum Travancore, by Mr. Harold S. Ferguson, and another in Mr. T. R. Bell's collection taken in North Kanara, Bombay Presidency.

49. *ISMENE IONIS*, n. sp., Pl. Q, Fig. 61, ♂.

HABITAT : Sambawa ; Western Java.

EXPANSE : ♂, 1.8 inches.

DESCRIPTION : **MALE**. **UPPERSIDE**, *both wings* shining ochreous-brown. *Forewing* with a prominent narrow black androconal streak extending parallel to the outer margin from the middle of the submedian nervule to near the base of the second median nervule. *Cilia* cinereous. *Hindwing*, the whole surface clothed, except the costa and outer margin rather broadly, with long orange-yellow setæ. *Cilia* anteriorly narrow and cinereous, posteriorly becoming long and orange-yellow. **UNDERSIDE**, *both wings* shining purplish fawn-colour, crossed by a common broad straight discal purplish-white band. *Forewing* has the discal band short, commencing at the costa, becoming lost posteriorly in a large ochreous-white area ; this latter occupies the whole of the inner margin, and extends broadly on to the disc as far as the second median nervule. *Hindwing* has the discal band extending right across the surface, its inner edge sharply defined, its outer edge diffused, posteriorly the band is recurved to the abdominal margin ; the small anal lobe bears a fuscous patch. *Head* and *thorax* clothed with long orange-yellow setæ. *Abdomen* fuscous,

tipped with orange-yellow. *Hindleg* has the tibia greatly swollen, almost as much so as in *I. mahintha*, Moore.

I. ionis is closely allied to *I. mahintha*, Moore,* from Silcurei, Cachar; the Khasi Hills; Kalewa in the Chindwin Valley, Bernardmyo, Theyetmyo, the Ataran Valley, the Daunat Range, and Kungpadie—all in Burma, from which it differs in the shape of the “male mark,” this latter in *I. mahintha* being very broad, as broad as long, instead of four times as long as broad as it is in *I. ionis*. In *I. mahintha* the “male-mark” is somewhat variable, being in some specimens a solid square, in others it is broken up into two, three, or four streaks, the streaks being separated from one another by the veins and internervular folds. The coloration of the upperside differs in the two species also, the long setæ which clothe the wings being orange-yellow in *I. ionis*, rich orange-red in *I. mahintha*. *I. ionis* has no discal hyaline spots on the forewing, in *I. mahintha* there are two in the female divided by the second median nervule; usually two (but the spots, especially the posterior one, are always smaller than in the female), always one, in the male on the underside, the anterior one of these in the second median interspace sometimes shewing through on the upperside, sometimes absent. On the underside *I. ionis* has a prominent discal purplish-white band across both wings, in *I. mahintha* there is the very faintest trace only of this band on the hindwing in some specimens. *I. ionis* is also allied to *I. antigone*, Röber,† from Flores, but from the figure that species appears to have the “male-mark” reduced to two small round clumps of scales, and the discal band on the underside is confined to the hindwing. Lastly, *I. ionis* is allied to *I. iluska*, Hewitson,‡ from Macassar in Celebes, which, like *I. mahintha*, has no discal band on the underside, and has the “male-mark” on the upperside as large as in that species, but of quite a different shape, being anteriorly rounded.

Described from a single example kindly given to me by Mr. H. J. Elwes, captured by Mr. W. Doherty in the island of Sambawa in September, 1891. He did not meet with this species apparently on

* Proc. Zool. Soc. Lond., 1874, p. 575, pl. lxvii, fig. 4, male.

† Tijds. voor Ent., vol. xxxiv, p. 320 (1891); vol. xxxv, pl. v, fig. 6, male (1892).

‡ Ex. Butt., vol. iv, pl. *Ismene* ii, figs. 10, 11, male (1867).

his first visit to the island in 1887.* Mr. H. Fruhstorfer has also given me two males captured by himself in August, 1892, on Mount Gede, 4,000 feet, in Western Java.

50. HASORA (*Parata*) SIMPLICISSIMA, Mabilie, Pl. Q, Figs. 62, ♂ ; 63, ♀.

Ismene simplicissima, Mabilie, Bull. Soc. Ent. France, fifth series, vol. vi, p. xxv, n. 1, (1876); idem, id., Ann. Soc. Ent. France, fifth series, vol. vi, p. 265, n. 11 (1876); id., Staudinger, Iris, vol. ii, p. 138 (1889); *Parata simplicissima*, Semper, Schmett. Philipp., p. 292, n. 428 (1892); *Ismene philetas*, Plötz, Stet. Ent. Zeit., vol. xlv, p. 56, n. 14 (1884).

HABITAT : Moluccas (*Mabilie*) ; Palawan in the Philippines, Minahassa in Celebes (*Staudinger*) ; Babuyanes, Luzon, Mindoro, Samart Bohol, Camiguin de Mindanao, Mindanao (*Semper*) ; Philippines (*Plötz*) ; Yunzalin Valley, Tenasserim, Burma ; N.-E. Sumatra.

EXPANSE : ♂, 1.7 to 1.9 ; ♀, 1.8 to 1.9 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* dark shining hair-brown. *Forewing* with an oblique discal narrow somewhat indistinct black streak of modified scales from the inner margin to the third median nervule. *Hindwing* immaculate. UNDERSIDE, *both wings* ochreous-brown, more or less faintly glossed with violet. *Forewing* with the inner margin broadly somewhat paler than the rest of the wing ; a broad discal fascia somewhat darker than the rest of the wing parallel with the outer margin from the costa to near the submedian nervure. *Hindwing* with the discal band of the forewing continued as far as the submedian interspace, where it ends in a small ochreous spot ; the anal lobe purplish-black. *Cilia* pale ochreous throughout. FEMALE. UPPERSIDE, *both wings* dark shining hair-brown. *Forewing* with the base of the wing and basal half of the inner margin heavily clothed with long ochreous setæ ; three, two, one, or no minute sub-apical diaphanous "old-gold" dots ; an oblique quadrate similar spot at the middle of the discoidal cell ; a small rhomboidal one placed obliquely across the middle of the second median interspace ; a similar one twice as large as the last-mentioned spot and placed inwardly obliquely posterior to it in the first median interspace ; in one specimen there is still another small obliquely-placed similar spot

* Journ. A. S. B., vol. lx, pt. 2, p. 141 (1891).

touching the middle of the submedian nervure in the submedian interspace. *Hindwing* with the abdominal half of the wing heavily clothed with long ochreous setæ. **UNDERSIDE**, *both wings* paler (more ochreous) than in the male. *Forewing* with all the spots as on the upperside; the inner margin broadly ochreous-yellow. *Hindwing* as in the male, except that there is a pale ochreous spot at the end of the cell.

Very near to *H. badra*, Moore, first recorded from Java in the Cat. Lep. Mus. E. I. Co., p. 245, n. 532 (1857), afterwards described from Bengal in Proc. Zool. Soc. Lond., 1865, p. 778, from which *H. simplicissima* differs in both sexes in the absence of the "small bluish-white spot" in the discoidal cell on the hindwing on the underside, the spot anterior to the anal lobe is also smaller and pale ochreous instead of "purple-white," the male also has a distinct "male-mark" on the upperside of the forewing which is entirely wanting in *H. badra*.

Described from one male taken in April by Colonel C. T. Bingham in the Yunzalin Valley, five males and four females from N.-E. Sumatra, and a pair of specimens from the Philippine Isles sent to me by Herr Georg Semper. I possess specimens of *H. badra* from Sikkim, Calcutta, Trevandrum, Ceylon, Sibsagar in Upper Assam, the Naga Hills, the Khasi Hills, Cachar, Chittagong, Maulmain, the Andaman Isles, Perak in the Malay Peninsula, N.-E. Sumatra, and Java; and it has been recorded from Upper Burma, Rangoon, North Tenasserim, Engano, Sumba, Sambawa, Celebes, and Palawan in the Philippine Isles. Mr. Leech once recorded *H. badra* from Kiukiang, Yangzee River, China, but subsequently seems to have considered this specimen to be *H. anura*, de Nicéville. The specimens figured are from Sumatra; they are somewhat smaller than those from the Philippines.

51. HASORA CHABRONA, Plötz.

Ismene chabrona, Plötz, Stet. Ent. Zeit., vol. xlv, p. 56, n. 16 (1884); *Hasora vitta*, Distant (nec Butler), Rhop. Malay., p. 375, n. 2, pl. xxxv, fig. 4, *male* (1886); id., Semper, Schmett. Phillip. Ins., p. 291, n. 424 (1892); id., Swinhoe, Trans. Ent. Soc. Lond., 1893, p. 329, n. 505.

HABITAT: Malacca (*Plötz*); Perak; Malacca (*Distant*); Luzon, Cebú, Bohol, Camotes, Camiguin de Mindanao, Mindanao—all in the Philippine Isles (*Semper*); Shillong; Sikkim; several places near Bombay; Khasia Hills (*Swinhoe*); Karinja Island, Bombay; North Kanara,

Bombay Presidency ; Bangalore ; Ganjam ; Orissa ; Calcutta ; Sikkim ; Shillong, North Khasi Hills, Sibsagar—all in Assam ; Kalewa in the Chindwin Valley, Rangoon, Daunat Range, Ataran Valley—all in Burma ; Andaman Isles ; Perak ; N.-E. Sumatra ; Java (*coll. de Nicéville*).

Colonel Swinhoe writes of *Hasora vitta* :—"It has been mixed up in Indian collections with the commoner Indian *Parata alexis*, Fabricius,* but can easily be distinguished by the subapical white [not white, distinctly ochreous] spot on the upperside [on both sides] of the forewing, and the entire absence of the very characteristic subgeneric [*sic*] sexual character of *Parata*, i.e., an oblique glandular streak of laxly raised scales below the cell in the forewing above." This writer uses *Parata* in a generic sense, while speaking of its "subgeneric" characters. For my own part, I think *Parata* might with advantage be used as a subgenus, as its "male-mark" is a very useful character by which to separate off certain species, such as *chromus* and *alexis*, from typical *Hasoras*, such as *badra*, *coulteri*, *hadria*, *anura*, and *chabrona*, which do not possess this "male-mark."

The confusion regarding this species is very great. As far back as 1881, the late Mr. Wood-Mason and I in discussing the butterflies of the Andaman Isles,† wrote of *Ismene chromus*, Cramer :—"Andaman females all have only a single small semi-transparent subapical speck between the last two branches of the subcostal [nervure] of the anterior wing ; but those from Continental India have sometimes one and sometimes two besides this on the disc of the same wing, which in one from Bangalore in South India are enlarged into two conspicuous reversed comma-shaped spots." The identification of the species is incorrect, *Hasora chromus* does not occur in the Andamans, the species referred to is *H. chabrona*. At the time of writing we had only received males of *H. chabrona* from the Andamans ; we did not recognise this fact, taking them to be females, as we expected to find in the males of this species a similar "male-mark" to that present in

* The species here meant is more probably *Hasora chromus*, Cramer. *Hasora alexis* is a scarce species, being, as far as I know, confined to South India (Ootacamund and Coonoor in the Nilgiri Hills, North Kanara, and Travancore), and to Ceylon. Colonel Swinhoe records both *Hasora chromus* and *H. alexis* from "Shillong," the latter in error I think.

† Journ. A. S. B., vol. 1, pt. 2, p. 254, n. 104 (1881).

Hasora malayana, Felder, a common Andamanese butterfly. It is possible that the late Carl Plötz has also incorrectly recorded "*Ismene*" *vitta* from the Philippines as well as from Sarawak (Borneo) from whence the type of *H. vitta* came. In this Herr Georg Semper in his Philippine Butterflies follows Plötz, as he records *H. vitta* from numerous islands in the Philippine group. Strangely enough he does not give "*Ismene*" *chabrona* as a synonym of *H. vitta* as Mr. Distant does, nor refer to the species in any way, though Plötz records it, as noted above, from the Philippines, but he notes the presence in his specimens of the characteristic spot of *H. chabrona* towards the apex of the forewing. Again, Mr. A. G. Butler records* "*Hesperia*" *vitta* (his own species) from Malacca. In this he may be correct, though I doubt it, but cannot be sure, not having seen the specimen in question. He also remarks on the characteristic spot, and notes two of them in his male specimen; in some examples there are as many as three. My impression is that *Hasora vitta* is confined to Borneo. It may be at once known from *H. chabrona* by the absence in the male (the only sex described and figured) of the small subapical spot in the forewing.† It is by this feature alone I am able to distinguish between the females of *H. (Parata) chromus* and *H. chabrona*, the former never possessing this spot, while in the latter it is invariably present. The males of the two species are at once differentiated by the presence or absence of the "male-mark." In addition to this character the sexes of *H. chabrona* can be at once distinguished by the male lacking and the female possessing two somewhat large spots in the median interspaces of the forewing. *H. coulteri*, Wood-Mason and de Nicéville,‡ from Cachar, is very closely allied to *H. chabrona*, the females of the two species may be distinguished on the underside of the hindwing by both the edges of the discal white band being sharply defined in *H. coulteri*, much blurred in *H. chabrona*. The female of *H. coulteri* possesses the subapical spot to the forewing, which is lacking in the male, and by the absence of which, together with the discal band, it is distinguished

* Trans. Linn. Soc. Lond., Zoology, second series, vol. i, p. 554, n. 2 (1877).

† *Hesperia vitta*, Butler, Lep. Ex., p. 167, n. 3, pl. lix, fig. 9, male (1874).

‡ Journ. A. S. B., vol. iv, pt. 2, p. 378, n. 201, pl. xviii, figs. 8, male; 8a, 8b, female (1887).

from the same sex of *H. chabrona*. Should the test of the presence or absence of the subapical spot to the forewing be found ultimately to fail, then I think *H. chabrona* will have to fall before *H. vitta*.

EXPLANATION OF THE PLATES.

PLATE N.

- Fig. 1. *Lethe (Rangbia) gulnihal*, de Nicéville, ♀, p. 259.
 „ 2. *Melanocyma faunuloides*, n. sp., ♀, p. 259.
 „ 3. *Apatura (Rohana) artaxes*, n. sp., ♂, p. 261.
 „ 4. „ „ „ „ ♀, p. 261.
 „ 5. „ „ *nakula*, Moore, ♂, p. 262.
 „ 6. „ „ „ „ ♀, p. 263.
 „ 7. *Euthalia binghamii*, n. sp., ♂, p. 264.
 „ 8. „ „ „ „ ♀, p. 264.
 „ 9. *Taxila burnii*, n. sp., ♀, p. 266.
 „ 10. *Abisara atlas*, n. sp., ♂, p. 268.
 „ 11. „ „ „ „ ♀, p. 268.

PLATE O.

- Fig. 12. *Paragerydus pætus*, n. sp., ♂, p. 269.
 „ 13. *Simiskina phalena*, Hewitson, ♀, p. 270.
 „ 14. *Cyaniris cossæa*, n. sp., ♂, p. 271.
 „ 15. „ „ „ „ ♀, p. 271.
 „ 16. „ *corythus*, „ ♂, p. 273.
 „ 17. „ „ „ „ ♀, p. 273.
 „ 18. „ *carna*, „ ♂, p. 274.
 „ 19. „ *musina*, Snellen, ♂, p. 275.
 „ 20. „ *catreus*, n. sp., ♂, p. 276.
 „ 21. „ „ „ „ ♀, p. 276.
 „ 22. „ *camenæ*, „ ♂, p. 278.
 „ 23. *Surendra stimula*, „ ♂, p. 279.
 „ 24. *Nacaduba nelides*, „ ♂, p. 280.
 „ 25. *Arhopala arvina*, Hewitson, ♂, p. 282.
 „ 26. „ *aboë*, n. sp., ♂, p. 281.
 „ 27. „ *adala*, „ ♂, p. 282.
 „ 28. „ *adulans*, „ ♂, p. 284.
 „ 29. „ „ „ „ ♀, p. 284.
 „ 30. „ *arama*, „ ♂, p. 285.
 „ 31. „ *apha*, „ ♂, p. 287.



Nicéville, Lionel de. 1895. "On new and little-known butterflies from the Indo-Malayan region." *The journal of the Bombay Natural History Society* 9(4), 366–410.

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