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NOVITATES ZOOLOGICAE.

VOL. XXIII., 1916.

NOVITATES ZOOLOGICAE.

A Journal of Zoology

IN CONNECTION WITH THE TRING MUSEUM.

EDITED BY

LORD ROTHSCHILD, F.R.S., PH.D.,

DR. ERNST HARTERT, AND DR. K. JORDAN.

VOL. XXIII., 1916.

(WITH EIGHT PLATES.)



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The Parts of this Volume were issued as follows :

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Part IV. (Index, Title-page, Contents, and Errata): February 20th, 1917.

ERRATA AND CORRECTIONS.

Page 97, line 19: "*Astux*" should read "*Astur*."

Page 317, line 35: By some careless oversight it has been stated that Mr. Kaye "had advanced the theory that *eugenia* is the dry-season form of *adonis*." It should have been "**the wet-season form.**"

Page 337, line 18: "about 2 cm. shorter than the fourth" should read: "about 2 cm. shorter than the fifth."

Page 338, lines 26 and 27: By some carelessness the measurements of the wings have been reversed—the western birds being the smaller, the eastern the larger ones.

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NOVITATES ZOOLOGICAE.

Vol. XXIII.

APRIL 1916.

No. 1.

NEW GENERA AND SPECIES OF INDO-AUSTRALIAN *GEOMETRIDAE*.

By LOUIS B. PROUT, F.E.S.

SUBFAMILY OENOCHROMINAE

1. *Dichromodes exocha* sp. nov.

♂, 27 mm. Head whitish grey, irrorated and dotted with dark fuscous. Palpus rather more than twice as long as diameter of eye; above mixed whitish grey and dark fuscous, sides blackish fuscous, first joint beneath sharply whitish. Antennal pectinations about three times diameter of shaft. Thorax and abdomen whitish grey, mixed with fuscous; forefemur fuscous on inner side, foretibia and tarsus fuscous except at extremities of joints; hindtibia slender.

Forewing shaped about as in *stilbiata* Guen.; whitish grey, rather glossy, the markings blackish fuscous; a fine, slightly curved line near the base; a thicker but less dark line shortly beyond; a strong, fairly straight line from before one-fourth costa to beyond one-fourth hindmargin, accompanied distally by a dark shade which narrows to a point on costa; a rather narrow median band, its proximal edge indented on the veins, its distal with a moderate double projection in the middle and curving distad at hindmargin; an elongate-oval black cell-mark in this band (distally to its middle); a fine, slightly sinuous brown line nearly 3 mm. from termen, separated by a whitish grey line from a sharp blackish subterminal band, narrower and better-defined than that of *stilbiata* swollen near costa and again at hindmargin, and with a double distal projection at R^3-M^1 , reaching about halfway to termen; terminal line very slender or obsolescent, but with very sharp triangular black dots (almost wedges) between the veins; fringe weakly dark-spotted opposite the veins.—*Hindwing* fuscous, slightly paler at costa; faint traces of a sinuous pale postmedian line, best expressed at abdominal margin, where it is followed (towards tornus) by weak beginnings of alternately dark and pale lines.

Forewing beneath pale fuscous, with a darker submarginal band, its distal edge (especially anteriorly) darkest; a slight pale shade proximally to this band. Hindwing beneath slightly more irrorated with whitish grey, the subterminal band and its proximal pale shade better expressed.

Kelso, New South Wales, January 19–31, 1902 (A. Simmons), 2 ♂♂ in coll. Tring Museum.

2. *Heteralex aspersa albescens* subsp. nov.

♂ ♀, 40–42 mm. Larger and much clearer white than *H. aspersa aspersa* Warr. from Burma and the Malay Peninsula, the discal and terminal dots stronger, thus superficially recalling the pale forms of *H. rectilineata* Guen.

Hainan: Wuteryang (type) and Mount Wuchi, May 1903, in coll. Tring Mus. Also from Formosa.

3. *Heteralex unilinea* (Swinh.)

Epidesma unilinea Swinh., *Tr. Ent. Soc. Lond.* 1902, p. 640 (Tasmania, in err.).

Heteralex aspersa part. Prout, *Gen. Ins.* fasc. 104, p. 61 (Hong-Kong).

I find that *H. unilinea* Swinh., from Hong-Kong and Hainan, which I have hitherto sunk to *aspersa*, is a distinct, though exceedingly similar species, with the ♀ antenna shortly bipectinate (in *aspersa* merely serrate), the termen of forewing slightly more convex, its line not quite so oblique, hence reaching costal margin 1 or 2 mm. before the apex; the discal dot of the hindwing better developed.

4. *Derambila candidissima* sp. nov.

♂ ♀, 20–32 mm. Head white. Palpus white, tipped with fuscous, a fuscous spot at end of first joint. Antennal ciliation moderately long. Thorax, abdomen and legs white, the hairs beneath abdomen and in hindtibial pencil partly light ochreous brown.

Forewing pure, glossy white; lines blackish fuscous, composed of moderately large vein-dots; antemedian with the dot on M farthest from the base; postmedian fairly straight from SC⁵ at 2.5 mm. from termen to M¹ at 3 mm. from termen, and again from M² at 4.5 mm. from termen to hindmargin, the dot on SM² slightly enlarged, more or less confluent with one at hindmargin; discal dot large, triangular (as in extreme *zincaria*); subterminal line greyish, shadowy, very slightly interrupted at each cell-fold; terminal black dots sharp.—*Hindwing* with SC² not stalked; without first line, cell-dot small, postmedian line rather more noticeably sinuous than on forewing.

Underside much more weakly marked, excepting the cell-dots.

Dampier Island, February and March 1914 (Meek's expedition), type in coll. Tring Mus. Also from Rook Island, Astrolabe Bay (German New Guinea), Kumusi River (N.E. British New Guinea), and Goodenough Island, in the same collection.

5. *Derambila rectiscripta* sp. nov.

Closely related to *dentifera* Moore (= *efila* Swinh.), but with rather longer ♂ antennal pectinations, and distinguishable at a glance by the broader, less interrupted postmedian line of the forewing; this runs **straight** from the black spot on R¹ to the middle of hindmargin, not sinuate as in *dentifera*; the brownish spots close to termen are likewise rather better defined than in that species, and the postmedian line of the hindwing ends in a more sharply blackish (though smaller) inner-marginal spot.

Kapaur, Dutch New Guinea, low country, December 1896, type in coll. Tring Mus. Also from Ron Island and the Kei Islands, and in my collection from Kabroor (Aru Islands) and Fak-Fak (Dutch New Guinea).

Both *rectiscripta* and *dentifera* have hitherto been confused with *satelliata*

Walk. (= *galactina* Th.-Mieg), which is only known from Celebes, the Sula Islands and Ceram. *dentifera* inhabits N. India, Hainan, Formosa and Talaut, and the three may be regarded as representative species, but I think have passed beyond the stage of subspecies.

6. *Derambila strigicosta brunneicosta* subsp. nov.

Differs from *D. strigicosta strigicosta* Warr. (from New Guinea and its satellite islands) in several particulars, which perhaps indicate even a separate species.

Forewing with apex in ♂ perhaps slightly more produced; costal area suffused with light brownish, recalling that of *lumenaria* Hb.; discal dot small (in *strigicosta strigicosta* always large), spots larger, more inclining to become confluent; terminal spots light brown, not black.—*Hindwing* with the postmedian line and terminal spots showing the same distinctions.

Solomon Islands: Choiseul, Vella Lavella, Gizo, New Georgia, Rendova, S. Christoval. Type from S. Christoval, April 19-29, 1908 (A. S. Meek) in coll. Tring Mus.

7. *Callipotnia allognota* sp. nov.

♂ ♀, 37-41 mm. Closely similar to the two already known species; distal margin of forewing (especially in the ♀) slightly more sinuate in anterior half, the apex consequently appearing more produced. The dark colouring and the sharp angulation of the line of the hindwing (though this is generally not quite so strong **beneath**) recall *angulifera* Prout (*Nov. Zool.* xx. 394), but the elbow in the postmedian line of the forewing is rounded, nearly as in *multicolor* Warr., though not quite so broadly. The projection in front of R¹ of the forewing is more acutely pointed than in either, and the discal spot of this wing generally much larger. The hindtibial hair-pencil of the ♂ appears to be less strong than in the other species, but is ensheathed in both the examples. But the most definite structural difference which I have discovered in the three species is in the hairy clothing of the ♂ hindwing beneath, and is as follows:

multicolor Warr. Much reddish hair at base; a long dark tuft on M proximally to origin of M²; shorter, brownish hair on M distally and at base of M¹, also on SM².

allognota Prout. Less strong reddish hair at base; no long dark tuft on M, the short brownish hair stronger, encroaching into cell, between SM² and fold, etc.

angulifera Prout. Nearly as the preceding, but with strong brown, partly red-mixed clothing on distal part of SC and base of SC² and R¹.

Biagi, Mambare River, British New Guinea, 5000 ft., April 1906; 2 ♂♂, 2 ♀♀, February 1906, 1 ♀ (A. S. Meek), in coll. Tring Mus.

8. *Alex ochracea* sp. nov.

Closely akin to *palparia* Walk., of which it might almost be regarded as a subspecies except that the ♂ antennal pectinations are appreciably longer. Ground-colour brighter ochraceous, the oblique transverse line always well developed, the dark irroration rarely so strong as in *palparia*, a narrow clear area always persisting

proximally to the oblique line. Hindwing on an average less bulged in the middle than in *palparia*, **distal half of fringe not darkened.**

Celebes, widely distributed, the type from S. Celebes, August—September 1891 (W. Doherty); Sula Mangoli; Batchian. All in coll. Tring Mus.

The brightest examples strongly recall on the upperside *A. continuaria* Walk., with which it has probably been confused; but the lack of yellow costal margin of hindwing, the continuation of the line of the hindwing to the costal edge, less yellow underside and other characters readily distinguish it.

9. *Conolophia nigripuncta rudis* subsp. nov.

♂ ♀. Nearest to the rare aberrations of name-typical *nigripuncta* Hmps. in which the line of hindwing is weak above, entirely wanting beneath, the entire underside much spotted and blotched with grey. Distinguished by the strong dark markings of the forewing above, in particular by thick, elongate black spots on the hindmargin of the forewing at the end of the postmedian and the (otherwise almost entirely obsolete) antemedian line and conspicuous black dots placed on the postmedian of the same wing on SC⁵ and the radials and medians, tending to increase progressively in size posteriorly, so that on the medians they become confluent. In the ♂ there is also a large blackish cloud about the cell-spot, and a similar tendency, though less developed, is indicated in the ♀.

Penrisen Mountains, Sarawak, June 1892 (A. Everett), type and another ♂ and 5 ♀ ♀ in coll. Tring Mus.; Kina Balu, N. Borneo, 2 ♂♂ in the same collection.

Perhaps a distinct species.

10. *Naxa textilis parvipuncta* subsp. nov.

Differs from name-typical *textilis* Walk. in having the large discal ocellus of each wing reduced to a small dark spot or dot; subterminal dots also reduced in size.

S. India, the most extreme form known to me inhabiting the Nilgiris. Type, Nilgiris, in coll. Tring Mus.

11. *Celerena semperi* sp. nov.

Celerena eucnemis Semper, *Reisen Philipp.* (2) vi. 623 (1901) (nec Feld.).

♂, 68 mm. Similar to *palawanica* Pagenst., differing as follows: Palpus with third joint slightly longer. Proximal joints of antenna with longer ciliation (apparently not much shorter than diameter of shaft, but unfortunately a little affected by mould; in *palawanica* a mere pubescence), first joint of tarsus with the residue beyond the process half as long again (fully 1 mm.).

Forewing with the first band much broader (2 mm.) and straight, the black proximal edging to the grey border also much broader.—*Hindwing* with the proximal edging of the grey border correspondingly broadened; beneath without the dark costal edging of *palawanica* ♂.

Samar, Philippines, June—July 1896 (J. Whitehead). Type in coll. Tring Mus.

It is practically certain, from his brief remarks, that this is the *eucnemis* of

Semper, to whom I dedicate the species, but I do not erect it as "nom. nov." Similarly (though unaccountably, as he had access to Felder's type) Mr. Warren has labelled the Samar example *eucnemis* Feld. Semper had before him a very long series from Camignin, N. of Mindanao, and inclined to regard it as the southern representative of the northern and western *palawanica*, which he had from Luzon, Mindoro, Ylin, Camotes and Palawan; but the range seems to overlap, and the structural differences are too marked.

12. *Celerena mitis evitans* subsp. nov.

Differs from name-typical *mitis* Warr. in that the yellow ground-colour encroaches into the black along hindmargin almost to tornus, the black band meeting the black border along SM^2 ; in '*mitis mitis* black proximal clouding from the band runs to the hindmargin well before tornus. In the ♂ the distinction is often less striking than in the ♀, as some black shading shows faintly through from the underside; but in both sexes the character is racially constant. On an average larger and more deeply coloured than the name-type.

Solomon Islands, distributed from Bougainville to Guadalcanar. Type from Knlambangra, March 1, 1901 (A. S. Meek), in coll. Tring Mus.

Celerena mitis was founded on a single example from Sudest Island, from which locality it remains unique; and is rather unusually pale, with narrow borders. But it does not at present seem necessary to separate from it the form which occurs on Woodlark and St. Aignan, and which has been taken into account in the above comparisons.

13. *Celerena perithea keiensis* subsp. nov.

Larger than *perithea perithea* Cram. (= *connexa* Walk., *stenospila* Warr.), more brightly and deeply coloured, the yellow postdiscal band of forewing in both sexes broad (about 7 mm.), its distal edge posteriorly somewhat crenulate, the yellow proximal patch freer from dark dusting, usually also projecting along hindmargin—sometimes almost to tornus.

Kei Islands. Type from Great Kei (H. Kühn) in coll. Tring Mus.

14. *Celerena probola* sp. nov.

♂, 61 mm.; ♀, 56–58 mm. Similar to *prodroma* Meyr. (= *remutata* Prout), but belonging to the structure-group of *pallidicolor* Warr. and *exacta* Warr., the sexual clothing of the ♂ antenna developed, commencing rather near the base (but with a rather prominent tuft at about one-third, almost recalling that of *lerne* Bsd. or *cana* Warr.), the hindtarsus of ♂ with the second joint over twice as long as the unthickened extremity of first joint; tibial and tarsal processes fuscous.

Forewing with the black median band slightly more curved basewards at costa than in *prodroma* (at least the proximal edge), posteriorly not abbreviated, joining the narrow border along SM^2 .—*Hindwing* with the black border narrow, about one-half the width of that of normal *prodroma*.

Forewing beneath with the black band not thickened; hindwing beneath with the black border not continued along the distal part of costa.

Humboldt Bay, New Guinea, September–October 1892 (W. Doherty). Type ♂ and 2 ♀♀ in coll. Tring Mus.

15. *Celerena mutatypes* sp. nov.

♂, 57–60 mm. Head yellow, on vertex sometimes mixed with black. Palpus with third joint small; yellow, the extreme upper edge, end of second joint, and third joint black. Antenna with the proximal segments not ciliated, the modified sexual scales commencing quite near base. Collar yellow, somewhat marked with black. Thorax and abdomen yellow. Hindtibia yellow, the terminal process mixed with grey, longer than the first tarsal joint. Hindtarsus with first joint not very long, the triangular process strong, reaching nearly to its end, with the outer angle rounded off; mixed with grey; second joint fully three times as long as the unthickened extremity of the first.

Forewing rather narrow; furrow in cell strong; bright gold-yellow; costal margin black from base to transverse band; black band moderately broad, from costa before middle to tornus, joining a not very narrow black distal border, which widens gradually into the usual apical patch; the enclosed yellow area about as broad as the distance from its distal edge to apex.—*Hindwing* concolorous, with the black border of medium width, somewhat wider in anterior half than in posterior, its proximal edge not very regularly rounded.

Upper Aroa River, British New Guinea, January—March 1903 (A. S. Meek). Type and others in coll. Tring Mus. Ekeikei, British Central New Guinea, 1500 ft., January—April 1903 (A. E. Pratt); two pairs in coll. Brit. Mus.

Easily distinguished by the proportions and structure of the ♂ hindleg.

♀ smaller (48–54 mm.), usually with more black on front of thorax, the band across the forewing broader. Both sexes are, however, strongly variable in the latter respect, producing aberrations in which this band is as wide as the yellow space between it and the base. In a ♂ in my collection, merely labelled German New Guinea, it is on the contrary narrower than in any Aroa River specimen known to me, and the black of the distal margin is (except in its proximal part) greyer; hindleg clearer yellow. This will probably prove a local race, superficially recalling the structurally distinct species *mitis* Warr.

SUBFAM. HEMITHEINAE.

16. *Archaeobalbis cristata subspoliata* subsp. nov.

♂ ♀, 55–57 mm. Differs from *cristata cristata* Warr. (= *subopalina*) as follows:

Larger, both wings slightly broader, the termen slightly more convex, the cell-spots beneath somewhat enlarged, the submarginal band beneath without red admixture, on the forewing broad anteriorly, tending to obsolescence posteriorly and especially in middle (R^3 — M^1).

Nilgiris, type ♂ and ♀; Coorg (Mercara), a ♀; all in coll. Tring Mus.

Probably replaces *cristata cristata* throughout Southern India.

17. *Archaeobalbis cristata nigrescentipalpis* subsp. nov.

Like sharply marked examples of *cristata cristata* Warr.—with the following differences:

Palpus at tip (third joint and especially end of second joint) black or blackish. Foreleg rather more mixed with black. Hindwing with termen slightly more regularly convex. Both wings above with the dark shades (especially the proximal)

rather more mixed with reddish. Submarginal band of forewing beneath interrupted, black, placed on a very slightly reddish-flushed area; of hindwing wholly black.

S. Celebes, August—September 1891 (W. Doherty), 4 ♂♂ in coll. Tring Mus.

Perhaps a distinct species; *subtepens* Walk., with different ♂ hindtibia, occupies the intervening area.

18. *Pingasa aravensis* sp. nov.

♂, 53 mm.; ♀, 58 mm. Face velvety black in upper half, cream-colour in lower. Palpus with third joint elongate (in ♂ about 1 mm.—one-third of palpus; in ♀ about 1.5 mm.—nearly one-half of palpus); cream-colour, the first and second joints with dark mark along outer side. Vertex, thorax, and abdomen cream-colour to whitish. Femora and tibiae in ♂ yellower; tarsi fuscous.

Forewing white, with a faint pinkish tinge; the irroration rather sparse, mostly grey or black, slightly interspersed with ochreous; lines black; antemedian fine, the angles in cell and submedian area strong, especially the latter; cell-mark not very intense; postmedian line strong, at least posteriorly, from a costal spot 9 or 10 mm. before apex, about parallel with termen in posterior half, rather less oblique in anterior, the teeth strong, but less open (especially in anterior part) than in *lariaria* Walk.; the posterior half with marked lunules inwards; distal area mixed rufous and grey (intermediate between *lariaria* Walk. and *nobilis* Prout), interrupted by the thick, rather regularly dentate, subterminal line, slight white terminal spots at apex and a strong white spot from R^3 to the fold behind M^1 .—*Hindwing* with the crests strong; antemedian line and cell-spot wanting; a reddish sprinkling about R^3 and M^1 and at abdominal margin, between the crests and postmedian line; distal area as in forewing.

Both wings beneath orange-ochraceous proximally to the cell-spot, rather darker orange at abdominal margin of hindwing; both wings with black cell-spot, that of forewing large; the succeeding area white; a broad black marginal band, leaving free on the forewing a white patch from apex to R^1 and a second from radial fold or R^3 to behind M^1 , on the hindwing an elongate white patch from radial fold to M^2 , a small one at fold, very narrowly connected with the preceding along termen, and very small, very narrowly connected spots behind SC^2 and behind R^1 ; fringes white, that of forewing slightly fuscous-marked between the radials.

Arawa, Bougainville, December 1907 (A. S. Meek). A pair in coll. Tring Museum.

The first known *Pingasa* from the Solomons. Palpus of ♂ with longer third joint than in *lariaria* Walk. and *nobilis* Prout.

19. *Pingasa pseudoterpnaria gracilis* subsp. nov.

Pingasa gracilis Warr. MS.

Both wings above less strongly dusted with dark olive-brown than in *pseudoterpnaria pseudoterpnaria* Guen. from Japan and *pseudoterpnaria tephrosiaria* Guen. from N.W. India, thus superficially resembling *chlora* Cram., from which it is distinguishable by the shorter third joint of the palpus in the ♂, the shape of the antemedian and postmedian lines in the submedian area, the longer teeth of the

postmedian, with sharper dark dot at the end of each tooth, and the distinct discal spot of hindwing beneath. The submarginal band of the underside is on an average narrower than in the other races, but varies considerably in all the forms; the forewing beneath lacks the dark suffusion which in the other races is so often present behind the cell.

Assam: Khasi and Naga Hills, Shillong; Shan States: Maymyo. Type from the Khasis in coll. Tring Mus.

20. *Hypodoxa multidentata* sp. nov.

♂, 44 mm. Coloration of upperside about as in *H. emiliaria* Guen., but with the hair-tuft of the hindwing more rufous; differs at a glance in the antemedian line of the forewing, which forms four strong teeth proximad and three (besides a smaller costal one) distad, the middle one of the three latter larger but somewhat less acute, the other two very black and thick; the postmedian line is more strongly curved proximad at costa and here somewhat thickened, very slightly bent inwards between the radials and only slightly outwards on R^3 and M^1 , otherwise similar to that of the *emiliaria* forms; that of the hindwing shows a rather marked proximad bent between the radials. Underside quite different from the *emiliaria* group, more recalling *muscosaria* Guen., etc.; pale greyish, with large blackish cell-marks and broad dark borders, occupying at least two-thirds of the area between cell-marks and termen, its proximal margin nearly even throughout, a small pale spot at costa of forewing, but no other pale spots; extreme termen and fringe again pale.

Malay Peninsula (Adams). Type in coll. Tring Mus.

Three ♀♀ in the same collection—Penang, November 1898 (Curtis), Mount Marapok, Dent Province, British North Borneo, and "Borneo" without further detail—show the species to be rather variable in colour on the upperside. Larger than the ♂, median area of forewing more or less pale, distal area and most of hindwing with strong suffusions of rufous and blackish in varying proportions. Easily known by the underside.

21. *Hypodoxa regina* sp. nov.

♀, 48 mm. Face and palpus liver-brown mixed with black, the palpus pale beneath. Vertex green. Thorax green, mixed on tegulae and on metathoracic tuft with liver-brown and black; beneath partly pale brownish, partly ochre-yellow. Abdomen pale brownish, dorsally tinged with green and mixed with liver-brown, on sides ochre-yellow, first segment with a pale dorsal belt, containing some black scales at its extremities.

Forewing pale green, somewhat mixed with white in middle; markings liver-brown, mixed with black scales, the black prevailing in the proximal region; an irregular patch at base, from M to hindmargin; first line strong, from costa at 4 mm. to hindmargin at 5 mm. or beyond, tolerably direct, but with small teeth distally; accompanied proximally by an irregular band, which commences about SC and widens to hindmargin; discal dot small, black; postmedian line not thick, only in anterior part distinct, posteriorly green with a few black scales; dentate outwards on the veins and fold; arising at two-thirds costa, almost parallel with termen to radial fold, projecting distad in two stronger teeth on R^3 and M^1 , then strongly oblique inwards, forming a strong proximad curve between M^2 and SM^2 ,

thence nearly vertical to hindmargin little beyond middle; a band between this and the subterminal; subterminal formed of small teeth anteriorly and large whiter ones posteriorly; a line distally to the subterminal, except between radial fold and M^1 ; longitudinal patches from this to termen at R^2 and between M^1 and submedian fold; termen with dark interneural dots, that behind R^3 greener, that behind M^2 elongate into a short line; fringe greenish proximally, whitish distally; irregularly spotted opposite the veins.—*Hindwing* with the postmedian line central, less strongly inbent posteriorly than on forewing; ground-colour mainly liver-brown (black-speckled) to beyond this line, only with some green in the crests, cell-mark strong, deep black, the black shading also strong about the origin of the medians and at abdominal margin; distal area more nearly as on forewing, subterminal line feeble, additional liver-brown spots towards apex.

Forewing beneath with costal edge pale brownish; a bright ochre-yellow streak behind C from base to near middle; a very large black cell-spot, about which the ground-colour is white, while posteriorly it is mostly pinkish; a broad, proximally sinuous-edged submarginal band of very deep purple (almost black), containing white subterminal dots, and throwing out projections to the termen at R^2 and between M^1 and fold; border otherwise dirty white; fringe spotted. *Hindwing* with a narrow, slightly bent, white postmedian band; proximally to this ochre-yellow, becoming dark-dusted in distal part and containing a large black cell-spot; distal area as on forewing, subterminal dots obsolete.

Rook Island, July 1913 (A. S. Meek). Type in coll. Tring Mus.

22. *Aeolochroma viridimedia* sp. nov.

♂, 46–48 mm. Exceedingly like *prasina* Warr., differing as follows:

Antennal ciliation longer (nearly as long as diameter of shaft). Ground-colour somewhat lighter and yellowish green, in places with rather denser dark irroration.

Forewing with a more or less developed dark shade or band just proximally to the median area; median area predominantly of the ground-colour, only darkened in the vicinity of the antemedian line and slightly in the distal projection of the postmedian, the light-blue and white scaling in submedian area (sometimes indicated in *prasina*) usually developed into a conspicuous patch; antemedian line more deeply projecting in cell; postmedian more strongly dentate, with a rather stronger outward projection between R^1 and M^1 ; discal dot beneath smaller.—*Hindwing* beneath entirely without black shading at abdominal margin; postmedian white band broader; distal black band more mixed with red, especially in apical region (in one aberration from Ninay Valley predominantly red).

Biagi, Mambare River, British New Guinea, 5000 ft., February–April 1906 (A. S. Meek), 8 ♂♂, including type; Ninay Valley, Central Arfak Mountains, Dutch New Guinea, November 1908–January 1909, 2 ♂♂; all in coll. Tring Mus.

Smaller and shorter-winged than *intima* Prout, which has similar ♂ antenna; differently coloured, etc.

A ♀ from Biagi which probably belongs here is extremely like the ♀ of *albifusaria* Walk., but smaller, less richly coloured, the discal dots small, some light-blue and white scales developed in the same position as in the ♂, the white postdiscal patch of the forewing less conspicuous than in *albifusaria*, narrower and differently placed, running obliquely from DC^2 , bounded anteriorly by SC^5 , the dark line or shade proximally to the subterminal less developed.

23. *Aeolochroma prasina angustifascia* subsp. nov.

♂. Differs from name-typical *prasina* Warr. in having the median band of the forewing narrowed (posteriorly 2 mm. against 3 or 4 mm.), postmedian line (especially of hindwing) much less indented between SC^5 (SC^2) and R^1 , discal spots enlarged, forewing beneath with the black border strong, hindwing beneath with strong blackish clouding in submedian area proximally to the postmedian line, the black border very strong, narrowing suddenly on reaching submedian fold.

♀. Band of forewing less narrowed, obsolescent anteriorly; forewing, except basally and costally, and entire hindwing with dull purple suffusions, more recalling *albifusaria* Walk. ab. (? subsp.), *suffusa* Warr.; postmedian line as in ♂; under-surface not more suffused than in *prasina prasina*, discal spots large.

Dampier Island, February—March 1914 (Meek's expedition). Type in coll. Tring Mus.

24. *Aeolochroma albifusaria* (Walk.).

♀. *Boarmia albifusaria* Walk., *List Lep. Ins.* xxxv. 1589 (1866) (Mysol).

♂. *Actenochroma* (?) *prasina* ab. *suffusa* Warr., *Nov. Zool.* iii. 283 (1896) (Fergusson Island).

♂. *Aeolochroma suffusa* Prout, *Gen. Ins.* fasc. 129. p. 36 (1912).

I have seen no example from Mysol except Walker's badly discoloured type, but now that I am acquainted with both sexes in good condition from different parts of Dutch New Guinea I can with confidence sink Warren's *suffusa*. The ♂♂ entirely lack the white patches which generally characterise the ♀, and this— together with the fact of his having mistaken a rather dark aberration of *prasina* for the ♀ to his *suffusa*—accounts for Warren's and my own failure to discover the synonymy. On the other hand it is still possible that *suffusa* may prove tenable as a subspecies; although the ♂♂ seem quite indistinguishable, the only ♀ which I have yet seen from Fergusson Island (the original locality) entirely lacks the white patches of name-typical *albifusaria*, and the same applies to the ♀ form from some parts of British New Guinea. But the range of the *albifusaria* and the *suffusa* form appears somewhat to overlap in that country, and although I have not yet seen both forms from any single locality, I shall not be surprised if they prove to be mere aberrations. Hitherto the ♀ has been but rarely taken.

25. *Dysphania numana buruensis* subsp. nov.

♂. *Forewing* with all the yellow patches white, the postdiscal ones between the radials not materially reduced, the elongate one between R^3 and M^1 (often obsolescent in the other races) conspicuous; no pale spot at middle of hindmargin.—*Hindwing* with the large discal patch white, the cell-mark not (as is generally the case in *numana peregrina* Bastelb.) enlarged, the yellow submarginal spots not reduced.

Kayeli, Buru, March 1897 (W. Doherty). 3 ♂♂ in coll. Tring Mus.

The Obi race, *peregrina* Bastelb., is sometimes almost equally devoid of yellow, but differs markedly in the reduction of the postdiscal spots; the subform of *peregrina* from Morty, Halmaheira and Batjan (*albipunctulata* Bastelb.) is scarcely worth keeping separate therefrom, but is, curiously enough, slightly intermediate in coloration between the Obi form and Cramer's name-type from Ceram and Amboina. I do not think that *helenetta* Walk. (Ceram) is more than an aberration.

26. *Dysphania hyperedys* sp. nov.

♂ ♀, 80–88 mm. Head and upperside of thorax deep purple, marked with yellow on collar, patagia and tegulae. Breast yellow. Legs deep purple. Abdomen bright yellow, not banded; at base mixed with cream-colour above and with purple beneath.

Forewing not very narrow; deep purple with the markings opaque, whitish cream-colour, in part faintly suffused with purple; a yellow spot at base of SC, sometimes (especially in the single ♀) extended as a short line along the vein; an elongate median patch between SC and M ($-R^3$) extending 3 or 4 mm. proximally and distally of the very large cell-spot; a small triangular spot behind it (from origin of M^1 to that of M^2), only separated from it by the purple median vein; a still smaller spot (sometimes almost obliterated) behind M^2 and a long narrow patch at middle of hindmargin, bounded in front by SM^2 , tapering to a point proximally; subterminal spots connected into a strongly sinuous line or very narrow band, or merely very slightly interrupted at M^1 .—*Hindwing* with termen well rounded, only a little straighter from SC^2 about to R^2 , thus appearing slightly bent at SC^2 ; deep purple at base, then with a very extended whitish-cream band, roughly oblong but with a small anterior projection across SC to C; cell-spot small or moderate, generally touching the anterior margin of the whitish area; distal border deep purple, from R^2 nearly to abdominal margin with a paler purple proximal suffusion the contained cadmium-yellow band seldom interrupted, though always much constricted at R^2 ; commencing in front of R^1 (sometimes at SC^2), well away from termen, it suddenly widens at R^3 so as to touch termen, containing three or four irregular interneural purple spots, that behind M^1 largest, that in front of M^1 moderate, the posterior 2 very small, the last sometimes obsolete; fringe in posterior half yellow, purple-spotted between the veins.

Underside quite similar.

Yanuta, S. Christoval, April 19–29, 1908 (A. S. Meek). 7 ♂♂, 1 ♀ in coll. Tring Mus.

27. *Agathia diplochorda* sp. nov.

♂, 40 mm. Face red, except at upper and lower edges strongly mixed with black, lower edge whitish. Palpus reddish, third joint less short than in the typical group. Vertex and antenna dull reddish; occiput green. Thorax above green, with a purple-brown spot in middle. Abdomen with crests exceedingly slight and narrow; dorsally yellow (discoloured from green?), bounded on each side by a thick, narrowing purple-brown line.

Forewing with termen almost straight, no bend at R^3 ; of the normal green of the genus, the markings purple-brown, of about the same colour as in *pisina* Butl., etc., namely: narrow costal and distal margins, the former slightly wider from towards middle to near apex, the latter from R^2 to behind R^3 ; a small basal patch, not reaching costa; a slender single antemedian line, placed and shaped as the double line of *pisina*; a postmedian line from costal border at nearly four-fifths, incurved between SC^5 and R^2 , excurved between R^2 and R^3 , here becoming double, the two at first closely approximated and with slight pale purplish shade between them, the proximal interrupted at the fold but reappearing, farther from the distal, before SM^2 ; some yellow shading accompanying the postmedian line; fringe yellow.—*Hindwing* shaped about as in *laetata* F.; green, with slender red-purple inner-marginal line reaching the base, double postmedian line, roughly the reverse

of that of forewing (single from termen near tornus, becoming double between the medians and the two diverging anteriorly); terminal line extremely slender anteriorly, less so from R^1 , broad in the tail at R^3 , cut by a fine pale line on the vein itself, narrowing gradually to tornus; fringe yellow, with dark spots at R^3 , M^1 and tornus, and (slighter) at R^1 .

Underside much paler; similarly but more weakly marked.

Kina Balu, N. Borneo (J. Waterstradt). Type in coll. Tring Mus.

28. *Hipparchus (Chloroglyphica) glaucochrista* sp. nov.

♂, 47 mm. Face green. Palpus brown-grey, slightly tinged with olive. Vertex light-brown, mixed with fuscous, in front narrowly whitish (in the paratype predominantly white). Thorax above green, beneath mostly white. Abdomen above light-brown, tinged with green, spotted with white at ends of segments; beneath white. Legs whitish, the fore and middle tarsi partly infuscated.

Forewing green, nearly as in *variegata* Butl., but with a glaucous shade in middle, very shiny, extending from near base to beyond postmedian line and from SC^2 to behind fold, but not sharply defined, except anteriorly; extreme costal edge pale ochreous, with fuscous spots; costal margin otherwise, together with apical region, yellowish green; lines chocolate, whitish-edged proximally and distally; antemedian from beyond one-fourth hindmargin, slightly indented on veins and still more feebly on fold, obsolete anteriorly; discal dot minute; postmedian line from three-fifths hindmargin, parallel with termen as far as R^1 , feebly lunulate-dentate, obsolete anteriorly, but traceable as a faint whitish line which runs obliquely inwards and slightly curved to a white spot at or beyond three-fifths costa; some slight whitish, chocolate-mixed subterminal spots; termen with a chocolate spot on each side of SC^5 ; fringe tinged with chocolate from apex to behind R^1 , otherwise blue-green, becoming whitish at tips.—*Hindwing* without definite glaucous suffusion; postmedian line little beyond middle, lunulate-dentate; vague subterminal marks as on forewing; fringe blue-green proximally, whitish distally, chocolate at the tail at extremity of R^3 .

Underside similar, but the hindwing also with an extended whitish glaucous suffusion, ending at a lunulate-dentate whitish subterminal line.

Vrianatong, Tibet; 2 ♂♂ in coll. L. B. Prout.

Hercoloxia gen. nov.

Related to *Comibaena* Hb., differing as follows:

Foretibia not tufted. Hindtibia of ♂ not dilated, median spurs wanting. Both wings with discocellulars formed nearly as in *Spaniocentra* Prout, M^1 at its origin widely separate from R^3 . The second joint of the palpus is similar to that of *Comibaena*, but not quite so strongly rough-scaled. The wing-shape is nearly that of *C. tenera* Warr. The ♂ pectinations are very long, ceasing suddenly near the tip of the antenna.

Type of the genus: *Hercoloxia chlorochromodes* sp. nov.

29. *Hercoloxia chlorochromodes* sp. nov.

♂, 31 mm. Colour and aspect of *Comibaena tenera* Warr., for which it may probably have been passed over. Antennal pectinations distinctive. Anal tuft very white.

Forewing slightly narrower, costa less broadly white, the faint lines more yellowish, the antemedian straight and very oblique (from well proximal to one-third costa to middle of hindmargin), the postmedian more continuous, lunulate outwards between the veins and strongly oblique outwards (almost parallel with antemedian) at hindmargin. Base of costa beneath more strongly infuscated. Discal dots beneath obsolescent.

Dradjad, G. Kendang, Preanger R., W. Java. Type in coll. Tring Mus.

Apparently an endemic development of *Comibaena tenera*, which commonly has the median spurs rather weak and the discocellulars of the forewing somewhat approaching the *Hercologia* form.

30. *Gelasma dysgenes* sp. nov.

♂, 40–45 mm. Face black. Palpus with third joint short; black above, cream-whitish beneath. Vertex and antennal shaft dirty white; pectinations about three times as long as diameter of shaft. Thorax above blue-grey, beneath dirty whitish; abdomen dirty whitish. Foreleg mostly blue-grey, middle- and hindleg dirty whitish.

Forewing with apex rather more acute than in *fuscifimbria* Prout, termen rather straighter; blue-grey,* not very opaquely scaled, costal edge very narrowly ochreous; lines whitish, placed and shaped about as in *fuscifimbria*, the antemedian rather strongly angled inwards on SM², the postmedian rather deeply lunulate inwards at fold; cell-mark weak, elongate; a very fine pale line at base of fringe, tips also pale, the rest darker than the wing.—*Hindwing* with the tail at R³ more pronounced than in *glaucaria* Walk. and *fuscifimbria* Prout; antemedian line wanting; postmedian with the projections at R³ and M¹ rather pronounced.

Underside rather paler, the lines and cell-marks wanting; fringes slightly infuscated proximally, whitish distally.

Vrianatong, Tibet. Type and others in coll. L. B. Prout.

On account of the shape, this can scarcely be a very differently coloured form of *glaucaria* or of *fuscifimbria*, though evidently a close relative. Not at all variable.

31. *Gelasma magnipuncta* sp. nov.

♂ ♀, 23 mm. Face red. Palpus red above, pale beneath, third joint in ♂ moderate, in ♀ very long. Vertex and shaft of antenna white; pectinations long, ceasing abruptly at little beyond one-half. Thorax concolorous with wings, abdomen rather paler. Legs red above, whitish beneath.

Forewing with SC¹ stalked, anastomosing with C; dull olive, costa narrowly ochreous, strongly marked with fuscous; a darker olive line before one-third, somewhat lunulate-dentate; a large roundish or oval fuscous-olive cell-spot; a whitish postmedian line from costa at nearly two-thirds to hindmargin at three-fourths, strongly lunulate-dentate and curved somewhat basewards near the margins and opposite the cell, accompanied proximally by a dark olive shade which thickens somewhat at the lunules; terminal line dark olive; fringe concolorous.—*Hindwing* with termen waved, almost subcrenulate, moderately toothed at R³, M¹ about connate or just separate; similar to forewing, without antemedian line.

* "Succory blue," pl. 206. 3, 4, *Répertoire de Couleurs*, Oberthür, 1905, or with the least suspicion more of greenish.

Underside of forewing paler olive, the discal spot weakly indicated, sometimes (the ♀) a faintly darkened blotch at tornus; of hindwing whitish, the discal spot obsolete, sometimes (the ♀) a pale-olive blotch at apex and part of distal margin, fading out into the ground colour.

Sarawak, 4th mile, Rock Road, April 29, 1909, type ♂ in coll. Brit. Mus. Singapore (H. M. Ridley), a damaged ♀ in the same collection.

32. *Thalassodes grammonota* sp. nov.

♂, 29 mm.; ♀, 35 mm. Face red. Palpus reddish, beneath ochreous whitish. Antenna ochreous, towards base whitish. Vertex white; occiput green. Thorax and abdomen green above, whitish beneath; metathorax and abdomen with a conspicuous ochreous mid-dorsal line, slightly broader than in *dorsilinea* Warr. Legs whitish, mixed with ochreous; hindtibia in ♂ not dilated.

Forewing coloured and marked like *dorsilinea*, but of a yellower green, with the costal margin and fringe rather brighter yellow.—*Hindwing* with termen rather more strongly angled at R³ than in *dorsilinea*, postmedian line correspondingly more bent.

Underside much paler, almost unmarked.

Rook Island, August 1913 (A. S. Meek). Type in coll. Tring Mus.

Distinguished from *dorsilinea* Warr. by the red face. The palpus in both sexes is about as in that species, but with the third joint relatively a trifle longer. The rest of the group lack the dorsal line, unless it be present in *viridicapot* Warr., of which the unique type (from S. Celebes) has the abdomen discoloured; in *semihyalina* Walk., of which I have supposed *viridicapot* to be a small example, the line is certainly wanting. In any case, though *grammonota* shares with *viridicapot* the red face, it differs in being less bluish green, more dotted and strigulated with white, costal margin more broadly yellow, third joint of palpus a trifle longer.

33. *Prasinocyma rhodostigma* sp. nov.

♂ ♀, 25–29 mm. Face green. Palpus in ♂ fully 1½ times as long as diameter of eye, with third joint moderate, exposed; in ♀ with third joint longer; green, paler beneath. Crown green, with a snow-white fillet between antennae. Antennal shaft pure white in proximal half; pectinations in ♂ of moderate length. Thorax green above, white beneath. Legs whitish, the forelegs tinged with red; hindtibia in ♂ dilated, with hair-pencil and moderate terminal process. Abdomen dorsally green, becoming whitish at anal end.

Forewing bright yellow-green, costal edge white; lines whitish, not very sharp; antemedian from before one-fourth costa to nearly one-third hindmargin, somewhat sinuous and a little excurved behind middle; postmedian at about 3 mm. from termen, lunulate-dentate, slightly incurved between the radials and rather more between M² and SM²; discal dot moderate, red; terminal line fine, red, broken into interneural dashes, the intervals pale; fringe yellowish, with long reddish marks opposite the veins.—*Hindwing* with inner margin rather long, termen bluntly bent at R³; like forewing, but without antemedian line and with the red discal spot larger; postmedian line bent at R³.

Underside whitish green, unmarked, the forewing with faint suggestion of a dirty reddish flush.

Rook Island, August 1913 (A. S. Meek). Type in coll. Tring Mus.

Related to *oxycentra* Meyr. and *syntyche* Prout, distinguished by the large red discal dots, etc.; *ornatissima* Warr. is smaller, lacks the white costa, etc.

Metallothea gen. nov.

Characters of *Metallochloa* Warr., but the ♂ antenna shortly bipectinate to about three-fourths, the wings shaped almost as in *Eucrostes* Hb., termen of forewing strongly oblique. SC^2 of forewing arising before SC^5 . ♀ unknown.

Type of the genus: *Metallothea eucrostes* sp. nov.

34. **Metallothea eucrostes** sp. nov.

♂, 20 mm. Face and upperside of palpus orange-reddish. Vertex, thorax and abdomen concolorous with wings; abdomen with four metallic bronze crests, the first three large, the last small.

Forewing with SC^1 anastomosing with C, M^1 connate with R^3 ; fadell light green as in Warren's type of *Metallochloa meeki*, costa rather sparingly dotted with fuscous; a small fuscous discal dot; lines not very distinct, silvery, the first from about middle of hindmargin direct to cell-dot, then curving so as to pass round (almost touching) its distal side; postmedian from close to tornus, slightly curved, less oblique than termen, reaching costa at about three-fourths; terminal line blackish, interrupted at veins; fringe dark grey, with a green line at base. — *Hindwing* without fuscous dots; a curved silvery postmedian line; terminal line and fringe as on forewing.

Forewing beneath more coarsely dusted at costa, dusted also in cell; a fuscous cell-dot; a thick, curved postmedian line of fuscous irroration from costa at nearly two-thirds, becoming obsolete at hindmargin; termen and fringe as above. Hindwing similar, without dusting at costa and in cell.

Salisbury Plains, N. of Bowen, Queensland (A. Simson). Type in coll. Tring Mus.

35. **Hemistola rubricosta** sp. nov.

♂, 34–37 mm. Face deep red. Palpus scarcely as long as diameter of eye; red, narrowly (or scarcely) pale beneath. Vertex green, narrowly white in front. Antennal shaft marked with red at base; pectinations short, about as in *rubrimargo* Warr. Thorax above green. Abdomen with the dorsal red markings very narrow on segments 2–3 (just the crested part), then broad and virtually continuing to anus, the crests still more diminutive than in *rubrimargo* and scarcely paler than the red dorsum, but more or less bordered on each side with fuscous. Venation variable, R^2 more extremely placed than in *rubrimargo*.

Forewing rather blue-green (less blue than *rubrimargo*), costal margin red; lines whitish, less clear than in *rubrimargo*, the postmedian without red scales at proximal edge; discal dots dark green, well developed though minute; termen without red line; fringe white, tipped with pink, without pink dots opposite the veins. — *Hindwing* with tail short and obtuse; corresponding with forewing.

Sikkim: Tonglo, 10,000 ft., July 1886 (H. J. Elwes). Type and others in coll. Tring Mus. Also from Bhotan and in coll. Brit. Mus. from Yatung, Tibet, (A. E. Hobson).

The description has been drawn up to bring out the differences from *rubrimargo* Warr., with which, strangely enough, it has been mixed.

36. *Hemistola fuscimargo* sp. nov.

♂ ♀, 38–43 mm. Extremely close to *rubrimargo* Warr., but larger, the ♂ antennal pectinations rather shorter and thicker, less in number,* face reddish brown above, pale below (in *rubrimargo* more reddish, virtually unicolorous), wings rather less blue, the well-expressed, deeply lunulate-dentate white lines accompanied (the antemedian distally, the postmedian proximally) by very fine red-brown edging, at least in the teeth, minute blackish dots placed on DC³ at the cell-fold, terminal line and dots in fringe fuscous, not red. Wing-shape virtually the same as in *rubrimargo*, perhaps very slightly broader, apices sharp. In both the lines of the forewing, the submedian lunule is particularly deep and conspicuous; on the hindwing the line projects very noticeably at R³ and M¹.

Naga Hills, Assam, 2 ♂♂, 1 ♀, in coll. Tring Mus. (ex coll. Elwes).

37. *Pyrrhorachis* (?) *cosmetocraspeda* sp. nov.

♀, 20–21 mm. Face reddish? (abraded). Vertex white, mixed with rose-colour. Antenna white above. Thorax and abdomen dorsally green, the latter with white, rose-margined spots, the first of which also contains an admixture of rose-colour.

Forewing with costa slightly more arched and termen slightly more oblique than in typical *Pyrrhorachis*; cell less extremely short, DC³ strongly incurved, M¹ not stalked; green (nearly as in *Comibaena*, but not quite so bright), costal margin white mixed with rose-colour; discal dot small, rose-colour; lines indicated by rose-coloured vein-dots, those at hind-margin the largest, especially the postmedian one, which is placed a little beyond the middle of this margin; postmedian row accompanied distally by white ones; termen snow-white, edged proximally by a strongly crenulate dark rose-coloured line (which almost touches termen between the veins) and distally by a rose-coloured terminal line; fringe proximally rose-pink, distally yellowish.—*Hindwing* more elongate than in typical *Pyrrhorachis*, especially at inner margin, termen very slightly bent in middle; postmedian line of rosy and white dots present, the rosy ones smaller than on forewing; fringe as on forewing.

Underside whitish green, unmarked.

Digboi, Assam (L. Brunt), 2 ♀♀ in coll. Tring Mus.

Both specimens have lost the hindlegs, but the species is so conspicuous that it is safe to make it known.

SUBFAM. STERRHINAE.†

38. *Antitrygodes pirimacula* sp. nov.

♂, 33–34 mm. Smaller than *divisaria* Walk., antennal ciliation longer (almost as in *agrata* Feld.), distal margins scarcely so deeply crenulate (approaching *agrata*), coloration the same, but with the following differences in pattern:

Forewing with the dark green subbasal patch more oblique-edged, central patch

* In *rubrimargo* over thirty joints may be called pectinate before they become mere rudiments, in *fuscimargo* about twenty-two joints. The ♀ antenna, as in *rubrimargo*, is simple; my grouping of the genus in *Gen. Ins.*, fasc. 129, pp. 226, 227, is not quite accurate, having been based in part on insufficient material and erroneous information.

† I have hitherto employed the older name of *Acidaliinae* for this subfamily, but as the generic name *Acidalia* proves unavailable in the *Geometridae* (see *infra*), it is necessary to revert to *Sterrhinae*, used by Meyrick (as *Sterrhidac*), Warren and Hulst. *Idaeinae* (*Idaeidae* Moore, *Lep. Ceyl.* iii. 447) would be older, but is also founded on a name which does not correctly belong to the subfamily (see *Trans. City Lond. Ent. Soc.* xx. 25). In my opinion *Sterrha* Hb. is merely a subgenus of *Ptychopoda* Steph., published probably in the same year (1826); it is not certain that it will not have to be given priority, but in any case it is potentially valid in the subfamily.

not indented proximally on M, distally forming a strong curve in its posterior half, so as to meet the outer line on hindmargin; DC and the whitish mark on it more oblique outwards, outer line rather more markedly excurved, closely approaching central patch at costa, the outer pale patch consequently pear-shaped.—*Hindwing* with the central patch much broader and more solid, its proximal edge rather near base, not indented, DC as on forewing, subterminal spot between radials much enlarged.

Fak-Fak, Dutch New Guinea, 1700 ft., January—February 1908. Type and paratype in coll. L. B. Prout.

39. *Problepsis craspediata rotifera* subsp. nov.

Differs from Warren's name-type (*Nov. Zool.* iv. 222), from German and British New Guinea in that the forewing bears a large, round (though not perfectly solid) blackish spot shortly beyond (distally to) the discocellulars.

Dutch New Guinea: near Oetakwa River, Snow Mountains, up to 3500 ft., October—December 1910 (A. S. Meek), type in coll. Tring Mus.; also from Ninay Valley, Central Arfak Mountains, 3500 ft., November 1908—January 1909.

Scopula Schrank.

Scopula Schrank, *Fauna Boica* ii. (2), 162 (1802).

Acidalia Tr., *Schmett. Eur.* v. (2) 438 (1825), (nec Hb. *Verz.* 31, 1818).

Calothysanis Hb., *Verz.* 301 (1826?).

Emmiltis Hb., *Verz.* 309 (1826?).

Leptomeris Hb., *Verz.* 310 (1826?).

Arrhostia Hb., *Verz.* 311 (1826?).

Craspedia Hb., *Verz.* 312 (1826?).

Dosithea Dup., *Hist. Nat. Léop.* vii. (2) 108 (1829).

Cymatida Sodoff., *Bull. Mosc.* x. (6) 91 (1837).

Synelys Hulst, *Tr. Amer. Ent. Soc.* xxiii. 300 (1896).

On the nomenclature of this large and very natural genus a good deal has been already written. In *The Entomologist*, xxxix. 266, I showed that Schrank's name of *Scopula* had for its type *ornata* Schrank, but I thought that that name might possibly be restricted to the immediate group of *ornata*, and that the large residue might continue to be called *Acidalia* (*Trans. City Lond. Ent. Soc.* xx. 30). But I am now convinced they cannot possibly be separated generically, and as it is now accepted that Hübner's *Acidalia* was published before Treitschke's (see Sherborn and Prout, *Ann. Mag. Nat. Hist.* (8) ix. 179), the time has arrived for the drastic and final change. I may add that in *Trans. City Lond. Ent. Soc.* xx. 25–26, I cited the types of nearly all the generic names involved, but by an unfortunate printer's error a line was dropped out. *Pycetis* Hb. 309 has type *aureolaria* Hb. (L.B.P. sel.) and the published note refers to *Leptomeris* Hb. 310. For *Calothysanis* the first selection of a type was Butler's (*Trans. Ent. Soc. Lond.* 1881, p. 342), namely *imitaria* Hb.; an exceedingly bad choice, the only advantage of which is that it saves the long-used name *Timandra* Dup. for *amata* L.

40. *Scopula bifalsaria grisescens* subsp. nov.

Lacks the brownish admixture of name-typical *bifalsaria* Prout (Seitz, *Macrolep.* iv. 65) and the lines are not diffused into bands.

Vrianatong, Tibet. A series in coll. L. B. Prout.

41. *Scopula discrepans* sp. nov.

♂, 16–17 mm. Face and upperside of palpus black. Vertex and base of antennal shaft cream-colour; antennal ciliation long. Thorax, abdomen, and legs cream-colour, the abdomen dorsally with a few minute black dots; hindtibia thickened, rather longer than femur, fringed with projecting scales above; tarsus slender, nearly three-quarters tibia.

Forewing rather broad, apex blunt, termen sinuous, very faintly subconcave anteriorly, rather ventricose posteriorly; cream-colour, slightly washed with pale greyish as far as postmedian line, and with a few scattered black scales; costal edge and a slight terminal shading more ochreous; antemedian line fine and very indistinct, ochreous-tinged, very oblique outwards from one-third costa to discal dot, here right-angled, thence oblique inwards and sinuous; discal dot minute, black; postmedian line fine and not very strong, black, from costa before three-fourths, very slightly curved outwards anteriorly and inwards at radials, then straightish to hindmargin not far from tornus; a narrow, slightly ochreous shade distally to this line, mixed with grey scales at tornus and marked distally with two confluent black teeth (forming a sort of **W**) between R^3 and M^2 ; terminal line slight, ochreous, mixed with blackish scales; fringe ochreous.—*Hindwing* with termen irregularly convex, slightly prominent at R^1 and at R^3 , feebly sinuate between and again near tornus; a minute black discal dot; a very faint sinuous ochreous line beyond it, followed by a band of greyish shading as far as the pale submarginal area; distal margin, terminal line and fringe as on forewing.

Both wings beneath smoky grey from base to a darker grey postmedian band; distal area cream-colour, thus strikingly contrasted; costal edge of forewing and all fringes more ochreous.

Kumusi River, N.E. British New Guinea, low level, August 1907 (A. S. Meek). Five ♂♂ in coll. Tring Mus.

42. *Xenocentris subcolorata* sp. nov.

♂ ♀, 14–16 mm. Similar to, and agreeing in leg-structure with *gravipes* Warr. (*Nov. Zool.* xiv. 138, *Argyroscelia*), but smaller, antennal ciliation apparently longer (unfortunately a little damaged in *gravipes* type).

Forewing slightly less elongate towards apex, rather more glossy, costal margin darkened with purplish grey gloss (towards base redder), sinuous reddish lines more or less indicated, the antemedian at hindmargin only, or obsolete, the proximal subterminal more or less broadened into a band, sometimes nearly meeting the postmedian, ending in a more distinct spot at hindmargin, spots on fringe minute and weak.—*Hindwing* with termen more gibbous, the reddish lines more or less continued.

Forewing beneath clouded with vinous anteriorly, in cell, and (more or less band-wise) in distal area; hindwing with two ill-defined vinous bands distally.

Goodenough Island, 2500–4000 ft., March 1913 (type ♂) to May 1913 (A. S. Meek), in coll. Tring Mus.

43. *Timandra punctinervis* sp. nov.

♂ ♀, 31–36 mm. Face and palpus reddish brown. Head and body concolorous with wings.

Forewing nearly as in *amata* L., but with a rather dense grey irroration giving it nearly the tone of *extremaria* Walk., the lines, however, remaining well

expressed; antemedian fine, gently curved; median very oblique, from a dark costal spot 1 mm. before apex to hindmargin well proximally to middle, accompanied distally by a very faint suggestion of a dark shade; postmedian moderately sinuous (about as in *convectaria* Walk.), slightly dark-dotted on the veins and followed distally by conspicuous black dots on SC^5 and R^1 ; cell-dot rather large and conspicuous; terminal line fine, dull reddish; fringe concolorous with wing.—*Hindwing* with costal margin relatively somewhat longer than in the allied species, tail at R^3 moderately strong; median line placed rather near base; a **distinct black cell-dot**; postmedian line somewhat variable, in the ♂ almost as sinuous as in *amata* L., in the ♀ hardly more so than in *correspondens* Hmps. n.; faint indications of a row of vein-dots distally to the postmedian.

Underside, especially of forewing, strongly and coarsely irrorated; discal dots, median and postmedian lines well developed.

Java: Sindanglaya, June 25, 1910, ♂ type; Tosari, July 5, 1910, ♀ (E. A. Cockayne); in coll. L. B. Prout, presented by the discoverer.

I know of no other species in the genus with distinct discal dot on the hindwing. Easily distinguished from *convectaria* by absence of dark costa. Shape and coloration, also the oblique course of the median line, recall the darkest, most reddish-tinged examples of *correspondens* Hmps. n., in which the antemedian line of forewing and the postmedian of hindwing are usually straight.

44. *Ptochophyle oophora* sp. nov.

♂, 21 mm. Face and palpus dull rosy. Vertex more purplish. Thorax rosy, paler beneath. Fore and middle legs mixed with rosy. Abdomen above rosy in anterior half, becoming paler posteriorly; beneath quite pale.

Forewing with costa rather strongly shouldered at base, then straight nearly to apex; termen almost vertical to middle, then strongly oblique; rose-pink proximally, this colour bounded by a fairly regular, very oblique curve, which runs from costa near base to tornus; succeeding area pale yellowish; a large oval, darker-edged rose-pink, violaceous-tinged distal patch reaching almost from costa to M^1 , touching the termen (and even encroaching slightly on the fringe) at R^3 and M^1 , very narrowly separated therefrom by the pale yellowish shade anteriorly; some small, pale yellow spots in this patch; fringe mostly pale yellowish.—*Hindwing* with termen slightly waved, almost inappreciably bent at R^3 ; rose-pink, tinged with violaceous distally; an indistinct dark dot on DC^2 and a smaller one on DC^3 ; extreme distal edge and fringe pale yellowish, encroached on by the rose-colour at R^3 .

Underside similar, rather paler, especially the yellow parts.

Sarawak district: Matang Road, July 16, 1911. Type in coll. Brit. Mus., presented by the Sarawak Museum.

About the shape and coloration of *miniosa* Warr. (*Nov. Zool.* vi. 332). Perhaps akin to *crucioraria* Warr. (*op. cit.* iv. 49), but lighter and brighter, rosy (not dull purple), the two colours much more sharply defined, the abdomen red, not golden, the termen of hindwing not strongly projecting.

45. *Ptochophyle* (?) *auricosta* sp. nov.

♀, 35 mm. Face crimson. Palpus decidedly longer than diameter of eye, third joint exposed, but considerably shorter than second; crimson, slightly paler beneath. Vertex and proximal part of antenna snow-white; antenna with

extremely short ciliation. Occiput crimson. Thorax and abdomen crimson, paler beneath.

Forewing with apex pointed, almost subfalcate, the termen being very faintly subconcave in its anterior half; SC^5 from areole close to its apex, SC^{1-4} long-stalked from apex of areole; crimson, tinged with purple, the extreme costal edge golden yellow, this shade also suffusing the entire costal region (to SC^4) distally; first line obsolete; cell-spot white, faintly grey-edged; median shade beyond, rather broad, but little darker than ground-colour, parallel with termen; post-median line rather near termen, indicated by rather indistinct dark vein-dots (very short dashes), those on R^2 and M^2 more proximally placed than the others; veins in distal area tinged with yellow; terminal interneural dark spots weak; fringe crimson, somewhat paler distally.—*Hindwing* with termen very little convex, quite straight in middle part; costal margin whitish, the rest as in forewing.

Under-surface similar, but with the cell-marks nearly obsolete, costa of forewing and veins of both wings more strongly gold-yellow, costa of hindwing not whitish, on the other hand with the inner margin of both wings whitish.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., February 1911 (A. S. Meek). Type in coll. Tring Mus.

I suspect this species and the following, together with *aurora* Warr. (*Nov. Zool.* x. 366), will have to be removed from *Ptochophyle*, on account of their *Cosymbia*-like venation.

46. *Ptochophyle eos* sp. nov.

♀, 28 mm. Similar to the preceding, but differing, apart from the smaller size, as follows:

Palpus mostly whitish beneath, with third joint rather longer and more slender, intermediate towards *Anisodes*; legs in part whiter.

Forewing with apex slightly less produced, costa not yellow.—*Hindwing* with termen rather more convex. Both wings orange-red (slightly dusted with yellow) from median shade nearly to termen; lines grey, the antemedian indicated on both wings, deeply lunulate-dentate (the teeth pointing basewards on veins), accompanied proximally by some slight red and yellow shading, postmedian consisting of rounder dots, curving proximad anteriorly; discal dots smaller; termen with some slight grey shading, terminal line of dashes grey. Underside almost unmarked, pinkish crimson.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus.

47. *Chrysocraspeda flavimacula* sp. nov.

♂, 25 mm. Face purplish crimson. Palpus crimson, pale beneath. Head and thorax olivaceous greyish, with slight crimson suffusion, a crimson mark across middle of crown, the suffusions in part strong on antenna. Fore and middle legs strongly crimsoned. Abdomen variegated with similar shades to the hindwing, thus with the first two segments dorsally much mixed with orange.

Forewing with termen gently curved, not at all projecting at R^3 ; SC^1 arising well before SC^5 ; ground-colour from near base predominantly dull purplish, really extremely variegated, brighter rosy-purple scales prevailing proximally, darker red-brown ones distally, a dark admixture also in base behind cell, some greyish scales

on principal veins, a bright yellow admixture between the radials; base and a broad costal border (as far as SC and R¹) olivaceous greyish, becoming somewhat browner distally, dotted here and there with dark red-brown, small patches of this colour also at extreme base, on C close to the base and between C and SC¹ at two-sevenths, the latter forming the beginning of the antemedian line; distal margin narrowly violet-grey, the area between this and the postmedian line mainly concolorous with costa, but more mixed with yellow (at least between the radials proximally) and bearing some coarse dark red-brown dots and spots; antemedian line ill-defined except anteriorly, bent in cell, then straight to hindmargin at two-sevenths; postmedian line scarcely discernible on pale costal area, arising at four-sevenths costa, very strongly oblique outwards to R¹, thence nearly vertical to behind R³, then curving so as to become parallel with termen; cell-mark black, somewhat elongate, followed distally by a bright yellow patch (lunulate or approaching cordiform); termen with small red-brown dots at vein-ends; fringe yellow, deeper (more orange) proximally.—*Hindwing* at extreme base pale, then orange (proximally mixed with rosy), then mixed pinkish-grey and yellowish to end of cell (at abdominal margin more orange), crossed by a curved orange line continuing the antemedian of forewing and terminated by an elongate white discal mark, to which follows immediately a curved orange median shade; distal half mainly yellow (more orange at abdominal margin), sparsely speckled with red-brown, an orange postmedian shade from two-thirds abdominal margin about to R³, here nearer the termen than at its commencement; distal border, as on forewing, violet-grey, separated from the yellow area by a vague orange shade; termen with an almost continuous line of dark red-brown irroration; fringe as on forewing.

Forewing beneath nearly all clouded with purple, of two or three shades, the basal part, except at costa, the brightest (almost rose-colour), proximal half (or more) of costal area and an oblique, broadening shade from cell to tornus dark purple-grey, apical area paler and vaguer purplish, being somewhat mixed with olive-grey scales; discal mark as above, the yellow spot beyond it much paler, distally ill-defined; fringe yellow. Hindwing beneath mostly pale yellowish, costal area to beyond one-half (with most of cell) rosy, distal border purplish, broadest and darkest (purple-grey) apically; fringe pale yellow.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). Type in coll. Tring Mus.

Related to *praegriseata* Warr. (*Nov. Zool.* xiv. 139).

48. *Chrysocraspeda eutmeta* sp. nov.

♂, 25 mm. Face white, tinged with red at edges. Palpus red on outer side. Vertex and antennal shaft reddish. Thorax and abdomen cream-colour, mixed with cinnamon on upperside.

Forewing with apex rather sharp, termen oblique, especially from M¹ to tornus, rather straight, tornus well marked; cream-colour, with sparse, rather coarse cinnamon irroration; costal edge cinnamon; first line weak, forming an acute angle outwards in cell (somewhat V-shaped), slender and obsolescent from M to hindmargin, strongly oblique inwards; discal dot blackish; postmedian line dark brown, strongly oblique outward subcostally (at nearly two-thirds), bent about R¹, thence fairly direct (slightly curved and sinuous) to hindmargin close to tornus; a lighter brown shade accompanying this line distally; terminal line dark reddish, accom-

panied proximally by a very narrow dark-brown shade; fringe ochraceous.—*Hindwing* with termen almost evenly rounded, tornus prominent; costal margin coloured like forewing, the rest mostly shaded with cinnamon; a rather large, pure white discal mark, with a very short projection along R^2 , thus somewhat hammer-head-shaped; a large smoky cloud distally to this; termen and fringe nearly as on forewing.

Both wings beneath paler, with the markings much fainter than above, the hindwing without the cinnamon shading.

Snow Mountains, Dutch New Guinea: near Oetakwa River, up to 3500 ft., October—December 1910, type and others; Upper Setekwa River, 2000–3000 ft., September 1910. In coll. Tring Mus., collected by A. S. Meek.

49. *Chrysocraspeda semiocellata* sp. nov.

♂, 24 mm. Head and body dull purple; the body pale brown beneath and at tip of abdomen.

Forewing broad, apex acute, termen bluntly bent at R^3 , very faintly curved anteriorly, almost straight posteriorly; dull purple, mixed of browner and purpler shades, and with blackish irroration, becoming redder purple against the yellow border; markings vague, formed of condensation of the dark irroration; antemedian line from costa beyond one-fourth, very oblique outward, then strongly bent and curving so as to run obliquely inward to one-fourth hindmargin; longitudinal dark clouding between this line and postmedian, just behind middle of wing; postmedian from scarcely beyond middle of costa, extremely oblique outward to R^3 , then curving so as to become progressively less oblique, but becoming obsolete about M^1 not far from termen; termen for about .5 mm. width cadmium yellow, the ground-colour forming minute outward teeth on the veins and running out obliquely at extreme apex and at tornus; fringe cadmium yellow.—*Hindwing* with termen almost evenly rounded; markings black; antemedian line close to base; coarse black irroration in almost the entire region between this and the postmedian; discal dot white, broadly black-ringed; postmedian line from middle of costa, broken into spots, strongly excurved, near inner margin incurved; termen and fringe as on forewing.

Underside more smoky, especially of hindwing; markings less; termen and fringe as above, but paler.

Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

50. *Chrysocraspeda oxyporphyris* sp. nov.

♂, 25 mm. Face, palpus and antennal shaft pinkish vinaceous. Vertex and thorax above predominantly olivaceous, abdomen more mixed; body beneath paler, brownish, the fore and middle legs mixed with vinaceous.

Forewing with apex acute, termen oblique, nearly straight, tornus pronounced; vinaceous, with purple irroration; shading off rather paler and duller in anterior part; discal dot minute; a dark purple line from hindmargin at about three-fifths, forming a scarcely appreciable inward curve and becoming very slightly more oblique than termen; fading out anteriorly to R^1 ; ground-colour slightly deepened close to termen, termen very narrowly gold-yellow from tornus almost to apex, the

edge of the ground-colour gradually encroaching so as to make the wing appear more acute than is really the case; fringe yellow.—*Hindwing* with apex squared, termen convex, abdominal margin fairly long; colour as on forewing or slightly deeper; discal mark minute, whitish; line of forewing continued, about median, very slightly curved; termen narrowly gold-yellow; fringe yellow.

Underside duller, the forewing, except distally, slightly smoky; markings scarcely discernible; termen and fringe as above, but paler.

Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

51. *Chrysocraspeda informiplaga* sp. nov.

♀, 23 mm. Face pale yellow, mixed with liver-brown below. Palpus pale yellow, mixed with liver-brown on outer side. Vertex and antennal shaft pale yellow. Occiput and upperside of thorax and abdomen liver-brown, the abdomen with a few yellow spots; thorax and abdomen beneath, pale olive yellow. Forecoxa, femur and tibia reddish above and on innerside.

Forewing fairly broad, costa somewhat arched, apex moderate, termen bowed, oblique (straighter near apex), tornus not sharp; liver-brown, finely irrorated with pale violet, strongly mixed with yellow along costal margin except at base; an interrupted yellow antemedian line from SC, forming a V-shaped angulation outward at M, somewhat thickened at fold, reappearing as a spot on SM² at just beyond one-third; a very irregular yellow median band, reduced to partly confluent yellow spots anteriorly and posteriorly, clear from about R² to SM², its anterior end throwing out projections anteriorly, proximally and distally, slightly encroached upon by a cell-spot of the ground-colour; its proximal side forming a strong, rounded projection behind M²; postmedian line parallel with and scarcely 2 mm. from termen, represented merely by spots at SC⁵, between the radials and at submedian fold, distal margin from apex to middle yellow with liver-coloured terminal spots, posteriorly spotted with yellow; fringe mostly yellow except at end of M¹ (damaged).—*Hindwing* with termen strongly convex, especially about R³–M¹, slightly sinuous; concolorous with forewing, the yellow patch fairly broad, rather near base, reaching costa, containing in its middle the rather large cell-dot, and with distal projections at R³ and M² and narrow bar from M to abdominal margin near base; postmedian spots vaguely reproduced, in anterior part only; termen and fringe as on forewing.

Underside similarly marked, much more washed-out.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

52. *Chrysocraspeda flavisparsa* sp. nov.

♂, 22 mm. Face rosy, deepest at upper edge. Palpus rosy, paler beneath. Crown rosy, spotted with yellow. Thorax and abdomen above rosy, mixed (especially the middle segments of abdomen) with yellow; beneath dirty olive-yellow. Fore and middle legs pink on upperside.

Forewing with costa markedly shouldered at base, then straight; termen anteriorly almost straight and little oblique, becoming suddenly very oblique from M¹, tornus rounded; rosy, tolerably evenly spotted and dotted (except along costa) with yellow, the spots in places confluent but forming no definite pattern; fringe

yellow, spotted with rosy at vein-ends.—*Hindwing* with costa not long, apex not sharp, termen somewhat irregularly waved, strongly convex, most prominent about M^1 , tornus squared, abdominal margin rather long; as forewing.

Underside paler rosy, the forewing, except at distal- and hindmargin, scarcely mixed with yellow, the hindwing feebly mixed with yellow; fringes as above, but paler.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., March 1911 (A. S. Meek). Type in coll. Tring Mus.

53. *Chrysocraspeda cambogiodes* sp. nov.

♂, 24 mm. Face whitish, narrowly red above. Palpus mixed with red on outer side. Crown ochreous, densely irrorated with dull red, a narrow white fillet between antennae. Antennal shaft white on inner side, red on outer. Thorax and abdomen above ochreous irrorated with dull red, beneath whitish ochreous.

Forewing not very broad, apex not sharp, termen oblique, especially from M^1 to tornus, tornus not well marked; yellow ochreous, with coarse dark reddish irroration; this is dense in costal region, otherwise sparse; first line obsolescent; discal dot strong, blackish; postmedian line strongly excurved, from subcostal shading at about two-thirds, thick and dark in its anterior half, slighter posteriorly; no terminal line; fringe concolorous, without irroration.—*Hindwing* with termen prominent at R^3-M^1 , thus appearing slightly bent at both these veins, straight between them; nearly as forewing, costal irroration less dense, the dot and line rather more proximally placed.

Both wings beneath very pale yellowish with an indistinct discal dot; forewing with base, cell and costal region vinaceous.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000 ft., February 1911 (A. S. Meek). Type in coll. Tring Mus.

54. *Heteroctenis indopurpurea* sp. nov.

♀, 22 mm. Face very light brown. Palpus tinged with purple. Vertex purple. Antenna strongly bipectinate. Thorax and abdomen above purple, beneath light brown. Legs light brown, the foreleg slightly marked with purple.

Forewing dull "Indian purple," with a narrow yellow border, which narrows very slightly about M^1 , widens very slightly behind, then tapers to a point at tornus; fringe yellow.—*Hindwing* with termen nearly straight from apex to R^2 , and again nearly straight or faintly subconcave from M^1 to tornus, thus prominent at R^3-M^1 ; as forewing, the purple ground-colour projecting more strongly at R^3 .

Underside slightly paler.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October–December 1910 (A. S. Meek). Type in coll. Tring Mus.

Except in its much darker colour and absence of yellow discal mark of hindwing, and in the venation and pectinate antenna, this species may be described as a counterpart of *Ptochophyle flavipuncta* Warr. (*Nov. Zool.* vi. 331), from the Philippines. I refer to *Heteroctenis*, all the species of *Chrysocraspeda* which have unipectinate or bipectinate ♀ antennae, but doubt whether the status of the so-called genus should be more than sectional.

55. *Heteroctenis flavimedia* sp. nov.

♀, 28 mm. Face and palpus dull, pale pink, the face paler in the middle. Crown red-brown, with a narrow whitish fillet between the antennae. Antennal shaft white on inner side, mostly red-brown on outer; pectinations long, biseriate. Thorax and abdomen concolorous with wings.

Forewing with termen slightly bent at M^1 ; ground-colour formed of a mixture of ferruginous, lilac-grey and yellow scales, the yellow almost entirely wanting along costal margin to about two-thirds; an irregular yellow postdiscal patch, mostly over 2 mm. broad, but constricted and slightly dusted with ferruginous in middle, reaching R^1 anteriorly and SM^2 posteriorly; ground-colour slightly more purplish distally to this patch than proximally; a yellow distal border of about 1.5 mm. width, not sharply defined proximally, being here dusted with ferruginous; fringe yellow.—*Hindwing* with termen waved, fairly straight from apex to R^3 and from tornus to M^1 , bent at these veins; nearly as forewing, costal margin pale, ground-colour projecting almost to termen at the gibbosity of R^3-M^1 .

Underside paler, the ground-colour uniform vinaceous, not dusted.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

As ab. *perspersa* nov., I describe a superficially very different form in which the yellow ground-colour is almost uniformly dotted and strigulated with liver-brown, leaving only a very small, ill-defined clear patch just beyond the discocellulars and on the hindwing also just within the cell; both wings with a conspicuous dark cell-spot; costal region of forewing as in the name-type.

56. *Anisodes flavissima* ab. *ophthalmicata* ab. nov.

Together with typical *flavissima* Warr. (*Nov. Zool.* xiv. 143) in both sexes, there occurs at Mount Goliath, Dutch New Guinea (January—February 1911, A. S. Meek), also in both sexes, an aberration for which I propose the above name, characterised by having on each wing a large black, pale-centred, discal ocellus, visible also, though less strong, on the underside.

Warren founded the species on a ♀ and queried the genus. It is a true "*Perixera*," in sens. Warr., i.e. an *Anisodes* of the Old-World section—♂ hind-leg simple, long, with terminal spurs only. In *Perixera* Meyr. (= *Phrissosceles* Warr.) the ♂ hindfemur is tufted.

SUBFAM. LARENTIINAE.

57. *Asthena argyrorrhyses* sp. nov.

♂, 21 mm. Closely similar to *argentipuncta* Warr. (*Nov. Zool.* xiii. 107), possibly a local form of it, rather smaller, but the abdomen is relatively shorter, the forewing appears slightly narrower, its costal margin rather more arched in distal part, the termen of hindwing less gibbous. The lines and spots are more slender, particularly the antemedian and postmedian, the brown surroundings of the silver slighter, but the silver colour itself transversely elongate, so as almost (in places quite) to unite into strongly sinuous transverse lines; the subapical spot of the forewing is similarly elongate into a fine short line, reaching to SC^5 and with minute broken continuations (of which *argentipuncta* shows no trace) nearly to R^3 . Size of *subditaria* Warr. (*loc. cit.*), which has about the same shaped forewing

(slightly less narrow), but more gibbous hindwing, and further differs in having a smaller cell-mark, larger antemedian and postmedian spots, not so strongly confluent into lines, and restricted subapical mark like that of *argentipuncta*.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

58. *Pomasia amplificata interrupta* subsp. nov.

Differs chiefly from name-typical *amplificata* Walk. (*List Lep. Ins.* xxii. 658) in having the postmedian band of the hindwing interrupted, a streak of the ground-colour running out between R^3 and M^1 to join the subterminal; a spot at the bifurcation of R^3 – M^1 stands well isolated from the patch at middle of abdominal margin.

New Guinea: Oetakwa River, October–December 1910, type ♂ and another; Upper Setekwa River, August–September 1910, 2 ♀♀; Mount Goliath, February 1911, 2 ♂♂; Biagi, Upper Mambare River, April 1906, 1 ♀; all in coll. Tring Mus., collected by A. S. Meek; Fak-Fak, Dutch New Guinea, 1700 ft., December 1907 (A. E. Pratt), in coll. Brit. Mus. et coll. L. B. Prout.

Bihastina gen. nov.

Face smooth. Palpus short and slender. Tongue present. Antenna in ♂ almost simple, with extremely minute ciliation. Femora glabrous. Hindtibia with all spurs developed. Forewing with costa almost straight, apex acute, termen curved, with pointed teeth at SC^5 , R^1 , R^3 and the medians, small rounded excisions between—that between R^1 and R^3 the deepest; cell not quite one-half; areole double, SC^1 from well before apex of distal areole, R^1 stalked or connate with SC^{3-5} , M^1 separate. Hindwing with termen toothed at the same veins as the forewing and at tornus, the excisions deeper, that between R^1 and R^3 profound; cell short; C anastomosing to near end of cell, SC^2 stalked, R^2 from before middle of DC, M^1 separate.

Type of the genus: *Bihastina albolucens* Prout, sp. nov.

Differs from *Hastina* in the double areole and point of origin of SC^1 of the forewing; from *Asthena* in shape.

59. *Bihastina albolucens* sp. nov.

♂, 27 mm. Face with rather more than one-half white, the upper part olive-brown. Palpus olive-brown, pale on the inner side. Vertex and base of antenna white, a slender olive transverse streak near posterior extremity of head. Front of collar white. Thorax and abdomen white, strongly mottled dorsally and more faintly ventrally with olive; anal extremity white.

Forewing somewhat iridescent white, the opaque veins purer white; markings dark greyish olive; a small basal patch, darkest at costa, otherwise mixed with white except at its sinuous edge; two sinuous lines (markedly incurved in submedian area) follow, broader anteriorly than posteriorly, arising from dark costal spots and darkened where they cross M and SM^2 ; a very faint line midway between the outer of these lines and median area; median area bounded proximally by a rather weak, slender, curved, crenulate line, which arises from a large costal spot and is most distinct on the veins, and distally by two broad lines, between the veins more or less confluent, the outer of them enlarged at the costa, both following about the same course as the termen; a minute cell-dot not far beyond the antemedian

line, anterior to it a subcostal bar (intersected by the vein), connecting the ante-median with the first postmedian; the white band distally to the postmedian is moderately broad and is scarcely visibly bisected except at costa; subterminal line broad, bounded on each side by a strongly crenulate olive line; these (especially the proximal) are thickest anteriorly and are connected between the radials by two thick longitudinal dashes; termen with olive patches on the veins, confluent with the outer boundary-line of the subterminal and containing white dots (the anterior two or three minute) at the extremities of the teeth; fringe white, dark-spotted at the ends of the veins.—*Hindwing* with the two distal lines of median area continued, the white space beyond broadening from R^3 , containing olive dashes on R^3 , M^1 , M^2 and SM^2 ; subterminal area, termen and fringe nearly as on forewing.

Forewing beneath strongly marked in anterior half, extremely feebly in posterior; hindwing very feebly throughout.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Closely related to *viridata* Warr. (*Nov. Zool.* xiii. 107, as *Hastina*), which must be transferred to this genus; longer-winged and much more white.

60. *Heterophleps sinuosaria nubilata* subsp. nov.

♂, 40 mm. Much less brown than *sinuosaria sinuosaria* Leech, the ground-colour of the forewing being drab, with a strong purplish-grey suffusion in proximal half; discal mark feeble; hindwing rather paler; lines less sharp, especially beneath.

Vrianatong, Tibet. Type in coll. L. B. Prout.

61. *Sauris fasciata graphica* subsp. nov.

Distinguishable from the N. Indian race *fasciata* Moore (= *normis* Hmps.) by having the lines of the forewing better expressed, the postmedian marked with short black dashes proximally, subterminal with dark shading proximally in addition to the blotch at the radials, discal spot generally large and thick.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

I have not yet been able to study the species throughout the intermediate regions.

62. *Megaloba rubripicta* Warr.

The insect which Warren (*Nov. Zool.* xiii. 111) described as the ♀ of his *rubripicta* certainly belongs to the following new species. I have before me a ♀ from Mount Goliath, January 1911, which may be the missing ♀, as typical *rubripicta* was taken at the same time and place (but so, too, was the new species in both sexes). Size of the ♂, forewing closely similar, slightly more sharply marked, the light bands which limit the median area paler and broader; hindwing above and both wings beneath uniformly rosy.

63. *Megaloba crypsipyrha* sp. nov.

♂ ♀, 40–41 mm. Similar to *rubripicta* Warr., but larger, more strongly glossy.

Forewing much more sharply marked, very pale green, with blackish green

markings, consisting of: a small mark close to base; a bar at about one-sixth, oblique outwards from costa, acutely angled in cell, then oblique inwards, with a triangular distal expansion in posterior half; a pair of streaks from costa at one-third, the distal the stronger and thicker; opposite to these a large triangular patch at or near hindmargin, the apex of the triangle pointing basewards; a bar across middle of wing, moderately straight and thick except at hindmargin, where it narrows and forms a proximad angle or strong curve; a thick, sinuous postmedian line, nearly meeting the preceding behind M^2 , triangularly thickened outwards before SM^2 , ending on hindmargin similarly to the preceding; an ill-defined costal half-band, with strong distal projections, placed just beyond the postmedian; a series of dark spots distally to the pale outer band (which is rather more sinuous and more strongly bent behind R^3 than in *rubripicta*), those before SC^5 , behind R^1 and in submedian area the largest and strongest; a subapical spot and some smaller lunules distally to the submarginal line, which is rather near termen and is itself broken into threadlike pale lunules; in addition there is a much larger cell-spot than in *rubripicta*, and a small, obliquely-placed blackish spot proximally to the median line, the two with whitish circumscription and somewhat recalling the reniform and orbicular spots of the Noctuidae.—*Hindwing* purple-red, paler distally.

Underside largely bright red, especially the costa and postmedian area of the forewing and nearly the whole hindwing; distal border of forewing pale grey, of hindwing more vaguely shaded with darker grey.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January–February 1911 (A. S. Meek). Type and others in coll. Tring Mus. Also from the Angabunga River, British New Guinea, 2 ♀♀ mistaken by Warren for the ♀ of *rubripicta*. It seems to agree in structure, except that the ♂ hind-tarsus is slightly longer.

64. *Phthonoloba praeëminens* sp. nov.

♂ ♀, 57–59 mm. Head dirty pale green. First joint of palpus and a small patch on upper part of side of second joint at its base blackish fuscous, the rest pale green. Thorax above green, with black spots, one in front and one beside it on tegula slightly raised or roughened, a pair in middle rather large or confluent, a pair posteriorly narrower. Abdomen extremely long (in ♂ 17 or 18 mm., in ♀ 15 or 16), first segment dorsally yellow, second with a narrow mediadorsal stripe and narrow posterior belt yellowish (forming together an inverted T), otherwise fuscous, third and fourth segments fuscous, narrowly pale posteriorly, the succeeding segments with progressively decreasing pairs of fuscous spots on their anterior part.

Wings (especially the hindwing) narrower than in typical *Phthonoloba*, glossy.—*Forewing* pale green, shaded with somewhat darker green; the markings consisting of fine whitish, yellow-mixed lines and velvety-blackish rows of spots or bands; first white line close to base, not reaching costa, accompanied distally by a small blackish patch from costa to SM^2 ; second at 3 mm., from a small black costal spot, curving inwards at SM^2 , very finely dark-edged distally; third at 5 mm., slightly sinuous, rather oblique outwards at hindmargin, followed by dark spots in anterior half and one at hindmargin; fourth at 8 mm., more sinuous, mostly accompanied (except in posterior half proximally) by dark spots or broken line; fifth at 11 mm., bent in same direction as fourth, but less strongly, a clear

green band proximally, double series of dark spots (interrupted lines) distally; sixth at about 16 mm., very tortuous; in bent costally and at R^3-M^1 , indented at SM^2 , oblique outwards at hindmargin, accompanied distally by dark spots; seventh roughly parallel with sixth (at about or nearly 3 mm. distance), but lacking the deep costal curve, accompanied proximally by small dark spots; eighth and ninth parallel with and not far from seventh, rather less distinct, separated from one another by dark spots; tenth (subterminal) running to tornus, interrupted at veins, and with V-shaped proximal bends at R^2 and R^3 and broader, less deep ones at M^1 and M^2 ; dark spots between this line and ninth near costa, between radials and posteriorly, much smaller dark marks distally in all the cells; termen with black triangles on the veins, their apices at the margin itself, their bases finely white-edged; a large oval or reniform blackish discal spot, with white circumscription, proximal to the sixth line.—*Hindwing* bronzy fuscous, with small cell-spot and vague dark distal border, narrowing to tornus.

Both wings beneath glossy dark fuscous, with elongate blackish discal mark and feeble pale sinuous postmedian line; forewing in addition with still fainter traces of pale antemedian lines and with a conspicuous row of subterminal white spots.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

A very handsome species, much larger than the rest of the group.

65. *Pseudoschista pallidipalpis* sp. nov.

♂, 35 mm. Closely similar to *nigrifusalis* Warr. (*Nov. Zool.* iii. 120), from the Khasis, but with the palpus uniform light olivaceous (in *nigrifusalis* blackish beneath).

Forewing more ochreous olivaceous (but possibly a little discoloured), first line accompanied by stronger dark shading, median line less dark except in submedian area, where it forms a sharper angle proximad, falling vertically on hindmargin (in *nigrifusalis* obliquely outwards), the dark median shade more solid, but neither reaching the median line nor the hindmargin.—*Hindwing* and underside less fuscous (more tinged with ochreous).

Lower Oetakwa River, Dutch South New Guinea, November 17–28, 1910 (A. S. Meek). Type in coll. Tring Mus.

66. *Ziridava brevicellula* sp. nov.

♀, 25 mm. Structure of *xylinaria* Walk., except that the cell of hindwing is shorter (scarcely over one-third the wing-length, in *xylinaria* two-fifths). Coloration of the less rufous examples of that species; smaller and differing essentially in the position of the fuscous markings.

Forewing fuscous along costa for a breadth of 1 mm. or more, but somewhat interruptedly, the more conspicuous interruption being distally to the median area; a dark fuscous streak (thick line) along cell-fold, 1.5 mm. long, ending at DC; a dark fuscous patch at distal end of median area, extending from the darkened costa to the fold between R^1 and R^2 ; a dark fuscous dash near termen between R^3 and M^1 ; there are also, as in *xylinaria*, a few tiny dashes or dark teeth accompanying some of the vague transverse lines.—*Hindwing* with a small dark mark at inner margin near base (the beginning of the band of *xylinaria*),

and a large dark cloud (about 2 mm. in breadth) at distal margin from R^3 to tornus.

In addition, the face and palpus are blacker above, thorax more deeply infuscated anteriorly, abdomen with stronger dark marks dorsally opposite the proximal dark mark of hindwing and additional dark mark near anus, correlated to the tornal blotch; postmedian line a little farther from termen.

Goodenough Island, 2500-4000 ft., April 1913 (A. S. Meek). Type in coll. Tring Mus. I believe I have seen it from other localities in the Papuan subregion.

67. *Prosthetopteryx eusemozona* sp. nov.

♂, 18 mm. Head and thorax light brown, darker spotted. Abdomen mostly pale. Fore and middle legs dark, becoming pale at extremities of joints.

Forewing smooth-scaled, very pale green, inclining to olive-yellow; markings red-brown, finely dark-edged; basal patch slightly crenulate at its edge; a costal spot between this and median band; median band very narrow, straight-edged, gradually tapering posteriorly; an elongate costal triangle from apex, its inward point at R^1 , a slight pale interruption indicating the subterminal line; a moderately broad oblique-edged terminal cloud from hindmargin about to R^2 , where it ends in a point; subterminal line faintly traceable hereon; termen with black dashes, weaker posteriorly; fringe red-brown, weakly dark chequered.—*Hindwing* with slight, shallow excision in termen behind R^2 ; rather paler than forewing; a patch of specialised black scaling along R^3 - M^1 , recalling that of *Tripteridia albimixta* Warr. (*Nov. Zool.* xiii. 131), but broader.

Forewing beneath more greyish, paler posteriorly; weakly marked with median and subterminal bands, which tend to dissolve into lines and to become obsolete posteriorly. Hindwing with still vaguer traces of curved transverse lines.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Perhaps nearest *infantilis* Warr. (*Nov. Zool.* xiv. 158), which has the anterior excision of hindwing very much larger, the band of forewing much less straight and concise.

Syzyx gen. nov.

Face with projecting cone of scales. Palpus long, second joint rough-scaled above and with long, forward-projecting scales beneath, third joint smooth, elongate. Tongue present. Antenna in ♂ ciliated. Femora glabrous. Hindtibia in ♂ with terminal spurs only. Metathorax rather strongly crested. Abdomen loosely crested. Forewing shaped as in broad-winged *Eupithecia*; DC nearly vertical; areole single, ample. Hindwing shaped nearly as in *Eupithecia*, in ♂ with slight excision in distal margin at tornus, a fold along abdominal margin below, as in the *Chesias* group; DC nearly straight; SC^2 stalked, R^2 from slightly behind middle of DC, M^1 well separate, M^2 and SM^2 wanting.

Type of the genus: *Syzyx postfulvata* sp. nov.

68. *Syzyx postfulvata* sp. nov.

♂, 21 mm. Head and palpus ochreous, the face with a slight tinge of olive. Thorax above more mixed with olive, metathorax with some slight dark spots; beneath pale. Fore and middle tibiae and tarsi blackish, with whitish spots at

extremity of joints. Abdomen somewhat variegated (ochreous brown, olivaceous and fuscous), with a dark dorsal patch on second segment.

Forewing glossy pale olive-green, the markings deeper olive-green with a fuscous admixture; basal patch scarcely over 1 mm., its edge tolerably direct; a narrow, ill-defined band between this and the central fascia, connected with the latter by some diffuse shading behind cell; some slight dark shading in cell proximal to central fascia; central fascia rather narrow (little over 2 mm., narrowing at hindmargin), its proximal edge irregularly crenulate and slightly concave, its distal very bluntly angled outwards before R^1 , weakly indented at R^2 , slightly bilobed before and behind M^1 , slightly crenulate posteriorly; a lavender-coloured smear on this band, commencing at its distal edge between the medians, curving proximad and hindwards, to end in its proximal part about the fold; a fine white line edging the band distally; a triangular costal patch anterior to the almost obsolete subterminal line, continued as a dark, proximally white-edged line between the radials; a much vaguer dark shade opposite it at hindmargin, slightly mixed with lavender and white; ground-colour very slightly darkened distally to the subterminal; no definite terminal line.—*Hindwing* glossy bright ochreous, unmarked.

Forewing beneath as far as the postmedian line mostly infuscated, with indications of crenulate lines; distally ochreous, with crenulate dark lines indicated in anterior half, one corresponding to the triangle and line of the upperside distinct. Hindwing beneath ochreous, with two crenulate, rather ill-defined lines in distal half, both bending basewards near costa; faint indications of another at costa about middle of wing.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911. Type in coll. Tring Mus.

69. *Horisme illustris* sp. nov.

♂ ♀, 27–30 mm. Face whitish. Palpus long (over twice diameter of eye), second joint with long-projecting scales, third joint elongate, smooth; dark brown on outer side. Vertex pale brown, sometimes dark-mixed. Thorax above mostly dark brown, beneath with a whitish spot in front. Abdomen above with a pale belt at base, otherwise mixed with russet and dark brown; beneath without russet. Legs mostly dark, with slight pale spots at ends of joints.

Forewing with termen slightly curved, rather strongly oblique; glossy; basal patch dark brown, darkest distally, edged by a fine, curved, slightly crenulate whitish line; a less dark, quite ill-defined band in the succeeding area, narrowing posteriorly; median band about 5 mm. wide at costa, about 3.5 mm. at hindmargin, its proximal edge angled about fold, running obliquely inwards to hindmargin, its distal edge irregularly crenulate, indented at SC^5 , somewhat lobed behind R^3 and more slightly behind M^1 , oblique inwards to M^2 ; ochraceous, overlaid with dark lines and clouding proximally, especially in anterior part, and with similar darkening distally at costa only, a narrow pale space in middle of interior half containing the elongate black cell-mark; very narrow whitish bands proximally and distally to the median band, each traversed by a weak, interrupted dark thread; distal area brown, traversed proximally to the subterminal line by crenulate dark lines; subterminal line lunulate-dentate, whitish, slightly dusky where it traverses a darkened cloud about the radials; this darkened cloud runs obliquely to the apex, bounded anteriorly by an oblique whitish line which cuts the subterminal; termen with pairs of large dark dots; fringe slightly darker proximally than distally, and

weakly dark-spotted opposite the veins.—*Hindwing* not very broad; glossy pale greyish; discal dot dark; a pale postmedian band, traversed by an indistinct grey thread and angled behind R^3 ; a fine, pale subterminal line.

Both wings beneath marked much as hindwing above, but more brownish and with crenulate lines slightly traceable on the dark areas.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., February 1911, type ♂, and January 1911, both sexes (A. S. Meek) in coll. Tring Mus.

Referred to *Horisme* on account of the double areole, but the palpus suggests affinity with *Micromia*. Perhaps this species and the two which follow, together with several of Warren's New Guinea *Eucymatoge*, will form a new genus.

70. *Horisme aeolotis* sp. nov.

♂, 25 mm. Face white, with a small black-mixed tuft at lower edge. Palpus stout, with strongly projecting scales; mostly blackish, extreme tip white. Vertex white, posteriorly with a slight brownish tinge. Antenna dark. Thorax mixed white and blackish; metathorax with strong, bifid white crest, black-marked in front. Abdomen fuscous, with a black dorsal spot near base, crests rather strong, mostly brownish white.

Wings glossy.—*Forewing* very variegated; base white, with a slight brown admixture, from SC to costa blackish; basal patch otherwise blackish, cut by a light brown (in some lights shot with purple) streak at fold, its distal edge at costa 2.5 mm. from base, incurved on SC, with double pointed projections before and behind M, then curving obliquely inwards; succeeding area white, cut by a brown, blackish-mixed streak at fold, also with a blackish dot at costa and a lunulate-dentate, somewhat interrupted line from SC to the fold-streak, distally shaded with pale brownish; median area broad, at costa 5 mm., its proximal edge rather deeply curved and somewhat sinuous, its distal with a rather sharp-pointed indentation at SC^5 , a projecting lobe at R^3 (its anterior margin more gradually sloping than its posterior), sharp indentations on M^1 , M^2 and SM^2 ; proximal part narrowly black, interrupted by the fold-streak, which here and as far as the middle of the area has again the purple gloss; distal part very narrowly and interruptedly preceded proximally by two or three dentate dark lines, middle of the area light brown (mixed, especially at costa and distally to the cell-spot, with white), a slight purple suffusion between the medians at their origin, a vague suffusion between R^3 and M^1 , interrupting the postmedian dark markings; cell-spot strong, black, crescentic; a narrow brownish-white band distally to the postmedian, intersected by a brown line and bounded distally by an interrupted black one; between this and the subterminal line stand a duplicating, still more interrupted dark line, pairs of blackish spots at costa and between radials, a single one between medians and a very pale blue spot anteriorly to R^1 ; subterminal line rather slender, lunulate-dentate, white, in places tinged with blue; terminal area light brownish, with some darker shadings and black spots; terminal line interrupted at veins and (at least in part) midway between; fringe white, with very slight dark dividing-line and with strong dark spots opposite the veins.—*Hindwing* light purplish grey, darker distally to a very faint pale double postmedian stripe, the dark area showing traces of a very fine white subterminal; discal dot small and weak.

Underside glossy fuscous, with small, somewhat crescentic discal dots and faint traces of pale, divided outer band; distally to this somewhat less glossy and

more variegated, with traces of fine whitish subterminal line; fringes nearly as above.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Perhaps nearest to *brunneata* Warr. (*Nov. Zool.* xiii. 116), but with much sharper coloration, the bands differently formed, etc.

71. *Horisme subtilis* sp. nov.

♀, 20 mm. Head green, spotted with fuscous. Palpus more strongly spotted with fuscous, the greenish ground-colour almost obscured, except beneath. Thorax and abdomen dorsally green, spotted with fuscous, the latter colour prevailing towards anus.

Wings smooth-scaled, rather glossy.—*Forewing* yellow-green, the extreme costal edge, the markings and the fringe purplish fuscous; basal patch moderately large, enclosing some green spots (especially one near the base), its distal edge slightly angled outwards in cell and slightly incurved between M and fold; median band just beyond middle of wing, very slenderly white-edged, nearly 3 mm. wide at costa, narrowing to radial area, both its edges sinuous and especially incurved in this area, the distal edge afterwards excurved at R^2-M^1 and incurved at fold; an elongate subapical patch between costa and SC^5 , containing the beginning of a dentate white subterminal line; a rather narrow distal border from SC^5 (narrowest between R^3 and M^2), containing near its proximal edge a dentate (or posteriorly lunulate-dentate) white subterminal line and distally some green terminal spots.—*Hindwing* without markings, reddish ochreous, paler proximally.

Under-surface nondescript pale fleshy greyish, with close but not strong darker irroration, both wings showing traces of a somewhat bent postmedian and some indefinite distal dark shading.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft. February 1911 (A. S. Meek). Type in coll. Tring Mus.

72. *Eupithecia synclinogramma* sp. nov.

♂, 20 mm. Head pale olivaceous. Palpus rather long (about twice diameter of eye), with third joint elongate and exposed. Antennal ciliation minute. Thorax above olivaceous, dark-marked on the tegulae; beneath pale. Abdomen pale, the crests rudimentary.

Forewing moderately broad, the costal margin somewhat arched anteriorly, termen not very strongly oblique, becoming more so behind R^3 ; glossy seal-brown; very feeble subbasal and antemedian lines of pale olivaceous, both becoming a little more distinct at costa; a rather large, roundish black cell-spot; a fine, strongly excurved, pale olivaceous line from beyond two-thirds costa to about three-fourths hindmargin, distally accompanied by a darker olive line; a broader, anteriorly incurved line from apex to tornus, touching the previous olive line from about R^2 to M^2 ; fringe concolorous.—*Hindwing* not very short; pale brown-grey, unmarked.

Forewing beneath grey as far as the postmedian line, with faint discal dot and traces of lines beyond; distally very pale brownish, with traces of lines. *Hindwing* beneath very pale brownish, with four or five curved lines, one in the middle the strongest.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Rather recalls *basichlora* Warr. (*Nov. Zool.* vi. 340) and *chlorophora* Swinh. (*Ann. Mag. Nat. Hist.* (6) xvi. 295), but without the green base and with the distal edge of the dark area forming a more regular curve.

Sterrhochaeta gen. nov.

Face sloping, rough-scaled or with projecting tuft below. Palpus long, strong, second joint rough, triangularly scaled, third joint smooth, rather small. Antenna in both sexes simple. Hindtibia with all spurs. Thorax often with long, low, narrow crest (dorsal ridge). Forewing not broad, termen very slightly curved, oblique; underside with stiff hairs arising in posterior part,* and projecting more or less over the cell; cell less than one-half, DC incurved, posteriorly extremely oblique outwards; areole double, SC^2 arising from stalk of SC^{3-5} or at least (*argyrastrape*) from apex of cell. Hindwing rather narrow, costa relatively long, apex and termen rounded; cell short, especially anteriorly, DC strongly biangulate, R^2 nearer to R^3 than to R^1 .

Type of the genus: *Sterrhochaeta fulgurata* (Warr.) = *Chaetolopha fulgurata* Warr. (*Nov. Zool.* xiii. 94).

Near *Chaetolopha* Warr. (*Nov. Zool.* vi. 41) both in structure and facies, but distinguished by the double areole. The following of Warren's species also belong here: *rectilineata* (*Nov. Zool.* v. 246, xiii. 95), *Axilinea* (xiii. 94), *pictipennis* (xiii. 95), *ruptistriga* (ibid.), *splendens* (ibid.), and *semiradiata* (xiv. 145).

73. **Sterrhochaeta rectilineata dilatans** subsp. nov.

♂ ♀, 22-26 mm. On an average larger than name-typical *rectilineata* Warr., from British New Guinea, the median band and distal shading rather darker and greyer, but especially distinguished by having the pale distal boundary-line of the median band slightly bent in the middle and broader—particularly its posterior half in the ♂, where it becomes whitish. Underside also rather darker, the line of hindwing more bent.

Goodenough Island, 2500-4000 ft., April and May 1915 (A. S. Meek). Type in coll. Tring Mus.

74. **Sterrhochaeta chaea** sp. nov.

♂, 24 mm. Head, thorax, legs and upperside of abdomen concolorous with forewing, abdomen beneath with hindwing. Palpus just over twice as long as diameter of eye.

Forewing above deep, bright reddish ochreous, the markings white; first line from one-sixth costa to one-fifth hindmargin, fairly straight, very slender and interrupted (almost obsolete), but thicker and conspicuous in cell; proximal boundary line of median area from one-third costa, rather oblique inwards, very slender and weak, in cell forming a rather thick, less oblique, conspicuous mark, behind cell still slightly thicker, running vertically to hindmargin at one-fifth, interrupted by SM^2 , then narrowing; median area very slightly darkened, especially at its edges; distal boundary of this area from costa just proximally to two-thirds, at first parallel with antemedian, but slightly more bent outwards or approaching

* Probably at SM^2 ; I have no material for dissection.

R², somewhat angled at R³, thence very slightly incurved, reaching hindmargin just beyond two-thirds; faint at costa and between radials, otherwise conspicuous, its distal half gradually widening in middle; subterminal line very slender and inconspicuous, only whitish in anterior part, where it is rather nearer to postmedian line than to termen; about R¹ it is somewhat curved outwards, but from this point it is only represented by some faintly grey shading.—*Hindwing* much paler ochreous, darkening very slightly distally; unmarked.

Forewing beneath considerably paler than above, with only the feeblest indication of the upperside markings; hindwing beneath scarcely so pale as above; a darker, very slightly incurved, diffuse line from abdominal margin to R³ just beyond cell, here angled, becoming somewhat oblique inwards, but soon fading out; a weaker, but more complete, curved subterminal dark line.

Goodenough Island, 2500–4000 ft., May 1913 (A. S. Meek). Type in coll. Tring Mus.

Very near *ruptistriga* Warr., but without white on face, thorax and abdomen, the lines rather less broken, posteriorly thicker and falling vertically (in that species strongly obliquely) on hindmargin.

75. *Sterrhochaeta argyrastrape* sp. nov.

♀, 31 mm. Face fulvous, mixed with red. Palpus nearly three times diameter of eye; fulvous, the outer side (except the small third joint) strongly mixed with red. Vertex mostly red, mixed with fulvous posteriorly. Antenna pale yellowish. Thorax concolorous with forewing, metathorax with an elongate silver spot. Abdomen narrowly pale at ends of segments and with a pale stripe on side except towards anal end; ovipositor prominent.

Forewing fulvous, strongly shaded with red-brown, and with some fine black irroration, which becomes strong as an edging to the silvery markings and a cloud behind M and M¹ between the median and postmedian lines; some not very conspicuous silvery interneural dashes in proximal half of wing; lines silver-white, extremely tortuous and angular, in places rather thick, but irregular, interrupted with black in crossing some of the veins; antemedian extremely angled outward anteriorly; median arising from a comma-shaped spot, angled outward at M, strongly oblique inward at hindmargin; postmedian strongly zigzag in its middle (first outward, then inward); subterminal very acutely dentate, thick between SC⁵ and R¹; a silvery comma at apex; fringe proximally unmarked, distally clear fulvous with blackish spots.—*Hindwing* much paler fulvous, almost unmarked.

Forewing beneath with the principal silvery markings indicated; hindwing frosted with shiny pale-bluish scales, a dark cell-spot and two dark transverse lines in distal part.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Larger, etc., than *S. fulgurata* Warr. (*Nov. Zool.* xiii. 94), lines of forewing far more irregular.

76. *Spectrobasis impectinata* sp. nov.

♂♀, 26–31 mm. Face olivaceous. Palpus ochreous on innerside and at ends of joints, otherwise much mixed with blackish. Vertex blackish in middle, narrowly ochreous at each side. Antennal shaft heavily irrorated with black,

merely serrate, with slender paired fascicles of cilia. Thorax and abdomen ochreous, mixed with blackish; tegulae green.

Forewing pale ochreous, clouded nearly all over with greyish fuscous; costal edge blackened at base and in irregular elongate spots farther out, otherwise remaining of the ground-colour, which also shows very slightly as a bent postmedian line and the costal commencement of a dentate subterminal, followed by a subapical costal patch; a light green anterior patch close to base, continued for a little way as a subcostal streak; a small black cell-spot; fringe at base rufescent or fuscous, throughout heavily dark-chequered.—*Hindwing* still more uniformly clouded, only with scarcely noticeably paler band in middle and again at termen; fringe chequered, sometimes infuscated almost throughout.

Forewing beneath smoky, darkening near costa; terminal region rufous or fuscous; costal margin at base blackish, then with a broad, narrowing ochreous patch, distally rufous, the veins sometimes remaining ochreous; an oblique whitish streak from apex and a shorter one from costa near it (both almost obliterated in dark examples by fuscous clouding). Hindwing beneath predominantly rufous mixed with blackish fuscous; an ill-defined pale antemedian band, at least in inner-marginal region; the beginning of a similar postmedian band at inner margin; a much interrupted pale subterminal line, chiefly indicated as anterior spots and a sinuous streak from tornus.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January and February 1911 (A. S. Meek). Type (February) in coll. Tring Mus.

Forms a new section of the genus, all the hitherto known species (*Nov. Zool.* xiii., xiv.) having strongly pectinate ♂ antennae; otherwise curiously similar to *maligna* Warr. (xiv. 149; for “2 ♀ ♀” read “2 ♂ ♂”).

77. *Anapalta aurifera circumfumata* subsp. nov.

♀, 49 mm. Larger than *aurifera aurifera* Warr. (*Nov. Zool.* x. 373), further distinguished as follows:

Forewing with the green markings in central fascia reduced to a longitudinal streak on M and a single, much interrupted transverse line; fuscous blotches in distal area larger, a strong one occupying more of radial area.—*Hindwing* with costa narrowly, apex more broadly and most of cell infuscated.—Forewing beneath with yellow much reduced, but with a small pale yellowish spot at apex and another at termen between R³ and M¹; hindwing with **broad** fuscous distal border and a curved postmedian series of fuscous vein-dots.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

78. *Xanthorhoë succerasina* sp. nov.

♀, 48 mm. Intermediate between *X. cerasina* Warr. (*Nov. Zool.* xiii. 104, t. 10, f. 5) and *interrupta* Warr. (*loc. cit.* 105, f. 10). Larger than either.

Forewing with median band of more uniform breadth throughout, without the strong subcostal indentation proximally of *cerasina* or the distal protuberance of *interrupta* and scarcely narrowed posteriorly to M²; the space distally to this band more broadly and more decidedly pale than in *interrupta*, less broadly than in *cerasina*, with a slight pink tinge; a dentate subterminal line much better developed than in either of the allies.—*Hindwing* also intermediate, all the four outer lines distinct at abdominal margin, the proximal pair of them traceable across wing.

Underside nearly as in the allies, the pale line just beyond the cell-spot less curved anteriorly.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft., February 1911 (A. S. Meek). Type in coll. Tring Mus.

79. *Cataclysmo plurilinearia murina* subsp. nov.

♂, 39-42 mm. Much darker than *plurilinearia plurilinearia* Leech, drab-grey, finely and closely irrorated with mouse-grey, quite without the yellow shadings of the name-typical form.

Vrianatong, Tibet. 11 ♂♂ in coll. L. B. Prout.

SUBFAM. GEOMETRINAE

80. *Aplochloa eucosmeta* sp. nov.

♀, 32 mm. Head and body concolorous with wings.

Forewing broad, stalk of SC^{1-2} arising from that of SC^{3-5} near its base, anastomosing with C, SC^2 afterwards anastomosing rather strongly with SC^{3-4} ; dirty pale olive-green, not glossy, with coarse but sparse and irregular irroration of dull dark reddish (anteriorly more blackish); a rather large blackish, slightly red-mixed cell-spot; two spots at just beyond two-thirds wing-length, formed of conglomerated irroration, one before and the other behind R^3 ; terminal spots blackish, only the anterior three or four present, the first the largest.—*Hindwing* with cell-dot smaller, postmedian spots best developed **anteriorly** (before and behind SC^5).

Both wings beneath pale ochre-yellow to beyond middle, then vaguely fleshy-tinged; discal dots present; forewing in addition with large roundish grey blotch near tornus, from M^2 to hindmargin.

Mount Goliath, Central Dutch New Guinea, 5000-7000 ft., February 1911 Type in coll. Tring Mus.

Forewing broader, termen less oblique, than in *subflava* Warr. (*Nov. Zool.* iii. 392, x. 383), hindwing with abdominal margin relatively a good deal less elongate, discal dot of forewing larger, coloration both above and beneath more variegated. Agrees with that species in having SC^1 arising out of stalk of SC^{3-5} .

81. *Plutodes drepanephora* sp. nov.

♂, 32 mm. Face and palpus orange-yellow. Vertex and base of antennal shaft paler yellow. Thorax light yellow in front; upperside of body otherwise mixed with orange and slightly with violaceous.

Forewing yellow, becoming orange-yellow distally, except at hindmargin; a slightly irregular silvery line along M from base to nearly 4 mm., then forming an almost semicircular forward curve, its distal end running along DC^3 ; a very oblique silvery line from about two-fifths hindmargin to M^2 ; a proximally convex silvery line from SC^4 about 3 mm. from apex to hindmargin at nearly three-fourths, its anterior part broken into an irregular streak and two dots; a curved silvery line close to termen, from SC^4 to fold, interrupted at the veins; the space between the proximal two silvery lines (and to base) wholly, that between the distal two proximally, weakly suffused with violet-grey.—*Hindwing* similarly coloured, close to base violaceous, the proximal silvery lines almost entirely obsolete, the hindmarginal traceable in places, particularly as a spot beyond middle of abdominal margin;

abdominal margin proximally to this spot tinged with orange; distal area nearly as on forewing, but with the first silvery line almost straight, scarcely at all interrupted.

Underside almost unicolorous, markings of distal half very feebly indicated.

♀ slightly larger, the violet-grey shades stronger.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

82. *Heterolocha citrina* sp. nov.

♂, 3♂ mm. Face purplish fuscous. Palpus dark fuscous above, orange-yellow beneath. Thorax, abdomen, and legs yellow; fore and middle legs marked with blackish fuscous, hindleg with reddish.

Forewing with costa arched, apex rather sharp but not produced; pale lemon-yellow, with scattered minute greyish strigulae, especially in distal area; costa suffused with vinaceous at base, minutely dotted with blackish grey throughout; lines vinaceous; first feeble, except as a rather large costal spot at almost one-fourth; deeply excurved in cell and less deeply in submedian area; cell-mark narrow, vinaceous; outer line thick, running obliquely and straight from apex to R^3 , very feebly incurved in posterior half, reaching hindmargin beyond three-fourths; accompanied proximally by disconnected blackish marks between the veins, the first four lunulate and strong, the others very small or obsolescent; a vinaceous terminal line; fringe deeper yellow, with an oblique purple spot at apex.—*Hindwing* more whitish, except in abdominal region and posterior half of distal area; a postmedian band, more purple than that of forewing, tapering from three-fourths abdominal margin to R^3 , anteriorly obsolete; a blackish grey proximal edging to this band; vague indications of a cell-mark; terminal line thicker and more diffuse than on forewing.

Underside with strigulation much stronger, dark purplish; markings coloured as on hindwing above; base of forewing suffused; band of hindwing complete; an elongate cell-mark well developed on both wings.

Vrianatong, Tibet. Type in coll. L. B. Prout.

Euctenostega gen. nov.

Face smooth. Palpus rather short, second joint shortly rough-scaled, third joint smooth, exposed, moderate. Tongue present. Antenna in both sexes bipectinate to beyond two-thirds, the branches long in the ♂, moderate in the ♀. Hindtibia in ♂ dilated; all spurs present. Forewing rather broad, apex moderate, termen smooth, curved, oblique; cell short, DC somewhat curved; SC^{1-2} coincident, free, arising from cell, SC^{3-5} normal, R^2 connate or stalked with R^1 , M^1 approximated to R^3 . Hindwing with termen rounded; cell short; C approximated to SC shortly near base, rapidly diverging, SC^2 just separate from R^1 , R^2 wanting, M^1 just separate from R^3 .

Type of the genus: *Euctenostega hypsicyma* sp. nov.

Already three or four genera of the *Stegania* group are known in which R^2 of the forewing arises with or close to R^1 , but the new species cannot be referred to any of them. From the African *Xenostega* Warr. (= *Pseudocrociniis* Swinh. nov. syn.), which shares with it the pectinate antennae, it differs in the longer third joint of palpus, shorter cells, and in the point of origin of SC^{1-2} of the forewing.

83. *Euctenostega hypsicyma* sp. nov.

♂ ♀, 23–24 mm. Face and palpus red-brown, pale ochreous below. Vertex pale ochreous, spotted with red-brown. Thorax and abdomen the same above, mostly pale beneath.

Forewing pale ochreous, becoming deeper and brighter distally and in part along costal margin; densely though rather irregularly irrorated with red-brown, leaving free (or almost free) four narrow, ill-defined, very sinuous pale stripes, the first (and worst-defined) close to base, the antemedian with strong distal bends at SC, M and SM² and deep inward curves between, the postmedian following a similar course, the subterminal with an additional inward tooth on M¹; ochreous remnants also at termen; fringe chequered, the red-brown spots being between the veins. — *Hindwing* similar.

Underside similarly but rather less strongly marked.

Sarawak: Matang Road, February 16–19, 1910. Type in coll. Brit. Mus., paratypes in coll. Sarawak Mus. et coll. L. B. Prout.

84. *Zamarada lepidota* sp. nov.

♂, 34 mm. Head blackish, somewhat mixed with deep red scales; lower extremity of face and third joint of palpus pale. Antennal pectinations not very long. Thorax and abdomen concolorous with wings, the abdomen with slight indications of lighter and darker dorsal spots. Hindtibia strongly dilated, with hair-pencil, terminal spurs short; hindtarsus short.

Forewing with termen slightly more oblique than in most of the genus, the scaling much more uniform, proximal part scarcely hyaline, in some lights with violet reflections; light ochreous brown from base to nearly two-thirds, distally rather more purplish, the two colours not at all sharply differentiated; between SC and C more purplish, spotted with blackish, extreme costal edge blackish; a small, pale-pupilled discal ring; extremely faint indications of a postmedian line of dots or spots from beyond two-thirds costa to almost two-thirds hindmargin; a terminal row of interneural black dots; fringe light ochreous brown, slightly paler in distal half. — *Hindwing* with inner margin relatively rather long; as forewing.

Underside proximally rather paler, the discal marks narrower, that of hindwing almost linear; distal area much darker, purplish fuscous, with no indication of postmedian spots nor of terminal dots.

Sarawak: Matang Road, November 10, 1909, March 27, 1911; Banting, May 21, 1909. Type in coll. Brit. Mus., paratypes in coll. Sarawak Mus. et coll. L. B. Prout.

Apparently related to "*Lomographa*" *tenebrosa* Swinh., *Tr. Ent. Soc. Lond.* 1902, p. 605; if so, the ♀ antenna is simple and the two should form a new section of the genus.

Eurychoria gen. nov.

Face slightly oblique, with appressed scales. Palpus shortish, second joint shortly rough-scaled below, third joint small. Antenna in ♂ pointed at extremity, pubescent, each joint with a pair of short, very slender bristles. Pectus and femora hairy. Hindtibia in ♀ not dilated; all spurs well developed. Abdomen in ♂ long and slender, smooth-scaled; genitalia and anal tuft strongly developed. *Forewing*

with apex slightly pointed, termen smooth, rather oblique, not very long; fovea wanting; cell more than one-half, DC³ in ♂ deeply inangled; SC¹ anastomosing slightly or connected with C, SC² from stalk of SC³⁻⁵, anastomosing at a point or very shortly with SC¹ and then with SC³⁻⁴, R² from before middle of DC, M¹ remote from R³. Hindwing with costa slightly arched, termen smooth, convex, torus well expressed; cell about one-half, DC³ oblique; C rather shortly approximated to cell near base, rapidly diverging, SC² separate, R² wanting, M¹ widely separate.

Type of the genus: *Eurychoria oenoptila* sp. nov.

Near the South American *Oenoptila* Warr.; differing in position of R² and in the ♂ DC and subcostal venation, which is sometimes very remarkable, the first areole formed by the subcostal anastomoses being very broad; the stalk of SC²⁻⁵ diverges very sharply from R¹ and the distal areole is narrow.

85. *Eurychoria oenoptila* sp. nov.

Face dark red. Vertex and clavola snow-white; occiput deep red. Collar reddish. Thorax and abdomen concolorous with wings; anal tuft lighter.

Forewing reddish ochreous, more or less irrorated (in the type densely and almost uniformly throughout) with deeper, more purplish red; lines still darker, but very indistinct, their position made prominent by small white dots on the veins; their obverse sides minutely accompanied by blackish dots; antemedian at about 5 mm., gently curved; postmedian within 4 mm. of termen (thus nearer thereto than in *vulpina* Warr., *Nov. Zool.* ix. 369, in which it is 5 mm. from termen), very slightly curved basewards at costa and near hindmargin; a small black discal dot, closely followed by a nearly straight, not conspicuous median shade, which reaches hindmargin near the postmedian.—*Hindwing* without the antemedian line.

Underside dull ochreous, with coarse but not very strong grey dots and strigulae, discal dots present, lines and median shade weakly reproduced, without white dots. Very variable; the following are the most noteworthy aberrations:

ab. **sticticata** nov. Each wing with one or two bright clear ochreous spots between R³ and M¹; when only one is present it is proximal to the postmedian line; the second, when present, is distal thereto.

ab. **variegata** nov. Basal area (only for a very short distance on hindwing) and a large patch from median shade nearly to termen and from SC⁵ to M² bright clear ochreous, cut longitudinally by a streak of reddish at R² and transversely by a lunulate-dentate blackish postmedian line (less deeply dentate than that of *flavirupta* Warr.)

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., February 1911 (A. S. Meek). 4 ♂♂, 6 ♀♀, in coll. Tring Mus.

The peculiarities of the ♂ venation are in this species exaggerated:—SC of forewing bends away from C distally, the proximal areole being therefore very broad and four-sided; SC² is connate or only very shortly stalked with SC³⁻⁵, and arises steeply.

86. *Eurychoria flavirupta* (Warr.)

Oenoptila flavirupta Warr., *Nov. Zool.* x. 402 (1903).

This was described from a ♀, from Aroa River, British New Guinea. I have before me also a ♂ from Ninay Valley, Central Arfak Mountains, Dutch New Guinea, and a ♂ and two ♀♀ from Goodenough Island; similar to *vulpina* Warr.,

Nov. Zool. ix. 369 (which is perhaps also a *Eurychoria*, though I believe "*Peratostega pallidicosta* Warr., *Nov. Zool.* x. 269, to be its ♂) but differing in the more ochreous underside; otherwise variable. One ♀ is identical with the Aroa River type, the other nearly unicolorous, with broad but weak grey transverse shades; the ♂ is almost as unicolorous above as *vulpina*.

87. *Trochistis felix* sp. nov.

♂, 33 mm. Extremely similar to the ♀ of *rufoliva* Warr. (*Nov. Zool.* xiii. 153), differing from that species in having the crown, antenna and upper extremity of face pale, abdomen without blackish admixture on posterior segments above (overlooked in Warren's description), anal tuft stronger.—*Forewing* with apex perhaps slightly blunter; the olive-grey parts slightly more yellowish, more extended than even in ♀ *rufoliva*, uninterrupted along costa, broader in median area and forming larger and more numerous spots in distal area; white discal spot smaller, red-ringed; the red lines rather more strongly bent.—*Hindwing* with similar increase in the pale olivaceous colouring; red lines better expressed, more bent; scattered bluish white scales, which appear in places on the red areas of *rufoliva*, are entirely wanting.—Underside slightly more reddish than in *rufoliva*, the submarginal grey shade on hindwing weaker.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

88. *Polycrasta ocellata* Warr.

♂ *Polycrasta ocellata* Warr., *Nov. Zool.* iii. 302 (1896).

♀ *Petelia inconspicua* Warr., *Nov. Zool.* iii. 400 (1896).

This synonymy, in spite of strong sexual dimorphism, is indisputable; the forms regularly occur together and agree in all essentials. *Polycrasta ocellata* Warr., *Nov. Zool.* ix. 369, also ♂, is presumably an aberration, at most a local race (Solomons). The species is distributed in New Guinea and its satellite islands and reaches North Australia.

89. *Eugnesia sciagraphica* sp. nov.

♂, 29–32 mm.; ♀, 36 mm. Extremely like *decolorata* Warr., *Nov. Zool.* x. 383), but larger, slightly more yellowish, the greyish shades still weaker, first line of forewing and second of hindwing rather straighter, and differing markedly in the palpus. In *decolorata* the face has a dark red spot on each side, placed about the middle, the first joint of the palpus has a blackish spot on middle of outer side, the second joint is externally blackish except at base, the third joint almost wholly blackish. In *sciagraphica* the spots on face are more mixed with black (usually smaller), the first joint of palpus nearly as in *decolorata*, the outside of second joint only blackish in its middle, the third joint entirely light, except a few scales at base of upperside.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January—February 1911 (A. S. Meek). 7 ♂♂, 1 ♀ in coll. Tring Mus.

In addition to the differences noted above, the dark spots in outer area (behind R³ near second line and on R¹ near termen) are more concise (and generally smaller) on forewing, obsolete on hindwing.

90. *Eugnesia correspondens papuensis* subsp. nov.

Apparently not separable specifically from *correspondens* Warr. (*Nov. Zool.* iv. 77), described from the Philippines, and I think only known from western localities in the Malayan Region, but duller coloured (light brownish rather than fulvous), the underside more strongly marked, especially in respect of a subterminal series of dark spots. The upperside of the forewing shows also two rather characteristic elongate cloudings distally to the postmedian line, the anterior (and longer) behind R^3 , the posterior behind M^1 ; the postmedian line of the hindwing is straight in the ♂, curved in the ♀.

Mount Goliath, Central Dutch New Guinea, January—February 1911 (A. S. Meek). Type in coll. Tring Mus.

It is reasonable to expect that the three ♀♀ of *correspondens* recorded by Warren (*Nov. Zool.* x. 384) from the Upper Aroa River will prove to belong to this race or a similar one.

91. *Eugnesia polita* sp. nov.

♂ ♀, 27–31 mm. Face whitish, lower half marked with red on the sides. Palpus straw-yellowish, first and second joints mostly blood-red on outer side and beneath, extremities remaining pale. Vertex pale. Postorbital rim and collar mixed with red. Patagia tipped with red. Tegula red at base.

Forewing glossy pale straw-colour, with very sparse red-brown irroration; costal edge more or less mixed with reddish; a red-brown, generally blackish-mixed spot on SC near base; first line from costa at nearly 4 mm., reddish, rather thick but ill-defined, except at veins, where it projects basewards, thickens and deepens, and is accentuated by blackish proximal admixture; discal mark not large, somewhat crescentic, red mixed with blackish; postmedian line about 4 mm. from termen, similarly formed to antemedian, but with the projections in the opposite direction and with a marked proximal curve posteriorly to R^3 ; usually a red, black-mixed spot distally to the postmedian between R^3 and M^1 ; subterminal line indistinct, white or whitish, dentate, accompanied proximally by a reddish spot at costa and distally by one on R^3 ; terminal dots sharp, red mixed with blackish, placed on the veins and extending on to base of fringe; veins in distal area sometimes strongly reddened.—*Hindwing* pale, finely and feebly irrorated, with very little marking; a minute discal dot; the beginning of a postmedian line at abdominal margin and usually interrupted traces of subterminal markings, never reaching costa.

Underside similarly marked, less shiny, forewing with base of costa more broadly red, hindwing rather less pale, its postmedian line sometimes reappearing at costa.

Mount Goliath, Central Dutch New Guinea, January—February 1911 (A. S. Meek). 6 ♂♂, 1 ♀ in coll. Tring Mus.

Very distinct in its smooth, polished appearance and weakly marked hindwing.

92. *Eugnesia lineata* ab. *cumulata* ab. nov.

Differs from typical *lineata* Warr. (*Nov. Zool.* i. 409, x. 384) in that the forewing has a large red-brown blotch in the central area, extending from the

hindmargin nearly to the discal dot and from the postmedian line more than half way to the antemedian, its proximal edge curved so that it narrows anteriorly.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek), together with the normal form.

93. *Eugnesia subapicata* sp. nov.

♂ ♀, 32–37 mm. Face very pale ochreous-brown, marked above with red-brown and with two large, partly confluent red-brown spots on lower part. Palpus whitish brown, becoming fuscous on the outside at end of first joint, greater part of second joint, and near base of third. Vertex mostly pale. Thorax and abdomen very pale ochreous brown, more or less irrorated with red-brown; a red-brown band across front of thorax, a large fuscous metathoracic spot and similar dorsal spots near base of abdomen and near anus.

Forewing very pale ochreous brown, irrorated with red-brown and very sparsely with blackish fuscous; costal margin red-brown, more strongly dotted with fuscous; lines broad, red-brown; antemedian from before one-third costa to beyond one-third hindmargin, forming two outward curves, with fuscous teeth proximally at M and SM²; postmedian from costa at five-sevenths, nearly straight or in posterior part slightly curved, distally with projecting red-brown teeth on the veins; discal dot rather large, black; an irregular red-brown patch distally to the postmedian line between R³ and M², sloping obliquely away from it and containing a blackish spot in each cellule; a large round terminal black spot at R¹, slightly cut with red-brown on the vein itself; two smaller blackish dots or dashes shortly before (proximal to) this, more widely separated by red-brown shading at the vein (R¹); terminal line red-brown, with fuscous dots or spots at the vein-ends; fringe dark-marked opposite the veins.—*Hindwing* with discal dot rather smaller; postmedian line continued; midway between this and termen a small dark spot on radial fold and two more conspicuous interneural spots between M¹ and SM²; terminal dots rather strong, in the teeth of the strongly crenulate margin.

Underside with the markings reproduced, lines of forewing fuscous, that of hindwing more slender than above.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

Possibly a form of *sordidata* Warr. (*Nov. Zool.* xiv. 165), somewhat analogous to *varians* ab. *melanospila* Warr. (*loc. cit.*).

94. *Syntaracta semipectinata* sp. nov.

♂, 34–35 mm. Very similar to *S. nigrellata* Warr. (*Nov. Zool.* xiii. 136), differing as follows:

Rather smaller, antennal pectinations quite short, abdomen not or scarcely black-dotted, wings with rather brighter reddish-fulvous irroration and markings, all the dots and spots much reduced, the subterminal ones virtually wanting; postmedian line of hindwing straighter.

Mount Goliath, Central Dutch New Guinea, January–February 1911 (A. S. Meek). Type and others in coll. Tring Mus.

A ♀ which may belong here is rather paler, with duller irroration and stronger black markings, thus even nearer to *nigrellata*.

95. *Syntaracta polynesia* sp. nov.

♂, 34 mm. ; ♀, 38 mm. Face ochreous, with a reddish band (sometimes interrupted) below middle. Palpus ochreous, each joint with a reddish spot or patch on the outer side, near the base. Antenna in ♂ with rather short pectinations. Crown ochreous, posteriorly mixed with red. Ends of patagia red, marked with black. Metathorax and abdomen with paired black dorsal spots, those of abdomen confluent, on first and second segment united into a large patch.

Forewing light bright ochreous, in ♂ sparsely, in ♀ more strongly irrorated with deep fulvous; costal margin strongly (distally more minutely) spotted with black; a conspicuous black spot on SC near base; lines thick, deep fulvous; antemedian at 4 mm., excurved in cell and in submedian area, marked on veins with black dots proximally; cell-dot rather large, black; postmedian line 5 or 6 mm. from termen, nearly straight, rather ill-defined proximally, with triangular projection between R^3 and M^1 , very slightly incurved posteriorly, marked distally by some black spots, especially between R^3 and M^1 and at hindmargin; subterminal line indicated by some ill-defined fulvous proximal shading, on which stand confluent pairs of black spots at R^1 , R^3-M^1 (very large) and hindmargin, the two former pairs accompanied (distally to the subterminal) by smaller pairs; terminal dots black, placed on ends of veins.—*Hindwing* with the lines continued, the black dots and spots much slighter, the only large ones being the two confluent subterminal pairs at R^3 .

Under-surface similar, rather paler.

Mount Goliath, Central Dutch New Guinea, February 1911, 2 ♂♂, 2 ♀♀.

96. *Nadagara tractata* sp. nov.

♂, 30 mm. Face ferruginous, at edges whitish. Palpus grey, mixed with ferruginous, tip whitish, first and second joints below, except at extremities, whitish. Vertex and antenna ferruginous, clavola whitish. Collar and front of thorax ferruginous. Thorax and abdomen otherwise pale grey, dorsally with a lilacine tinge.

Forewing pale lilacine grey, along costal edge and veins with a browner tinge, throughout with sparse dark-grey irroration; first line obsolete; discal dot black; a not very distinct, very slightly curved light-brown postmedian line midway between this and termen, accentuated by black or blackish dots on its distal edge; terminal line black, very fine except between apex and SC^5 , slightly interrupted at the veins, accompanied proximally by a very narrow ferruginous shade (line); fringe grey, with a whitish line at base and with slight dark spots opposite the veins.—*Hindwing* similar, without discal dot; postmedian line straight, scarcely beyond middle.

Forewing beneath dirty whitish, strongly shaded with light-brown except at hindmargin and distally to postmedian line; nearly throughout marked with coarse grey strigulae; discal mark strong, elongate; postmedian line itself obsolete, the dots distally to it strong; a blackish-grey apical shade and slighter tornal one. Hindwing similar, with much less brown suffusion, the dark apical shade slightly connected with the tornal by vague submarginal shading.

Rook Island, July 1913 (A. S. Meek). Type in coll. Tring Mus.

Near *intractata* Walk. (*List Lep. Ins.* xxiv. 1097), especially in colour;

postmedian line more as in *scitilineata* Walk. (*tom. cit.* 1094); underside different from both.

97. *Nadagara reprensata* sp. nov.

♂, 38 mm. Head and front of thorax coloured nearly as in the preceding; thorax and abdomen otherwise fawn-colour.

Forewing with termen crenulate anteriorly, merely waved posteriorly; pale fawn-colour, scarcely irrorated, the costal edge with some dark dots; principal veins darkened, browner; discal dot rather large, triangular, blackish; lines brown, somewhat inclining to ferruginous, narrowly pale-edged on their reverse sides, shading off into the ground-colour on their obverse; antemedian from one-fourth costa, very oblique outwards, acutely angled at cell-fold, oblique inwards and almost straight to beyond one-fourth hindmargin; postmedian from four-fifths costa, angled outwards on SC⁵, then fairly straight to hindmargin proximally to two-thirds, its anterior part faintly crenulate; subterminal line whitish, indistinct, slightly receding from termen between radials, suddenly bent outwards at R³ and again more slightly behind M², very weakly dark-shaded proximally; terminal line weak, somewhat interrupted; fringe feebly spotted.—*Hindwing* similar, with costal margin pale; antemedian line wanting; cell-dot smaller, not triangular; postmedian line gently curved near costa, not crenulate.

Underside rather paler (especially hindwing), with fine short grey strigulae, except at posterior margin of forewing; forewing washed with ochreous in cell; both wings with black discal dot and fine, curved brown outer line, about 3.5 mm. from termen; terminal line darker than above; fringe rather more distinctly spotted.

Tosari, Java, January 5, 1910 (E. A. Cockayne). Type in coll. L. B. Prout, presented by the discoverer.

Near *comprensata* Walk. (*List Lep. Ins.* xxiv. 1095).

98. *Chiasmia* (?) *phoebe* sp. nov.

♂, 28 mm.; ♀, 30–33 mm. Head pale straw-colour, the face with a red-brown spot at each side—in the ♂ more extended red-brown. Palpus whitish at base, otherwise ochreous mixed with red-brown. Antennal shaft with some brownish or fuscous dots; ciliation in ♂ at least as long as diameter of shaft. Thorax and abdomen whitish straw-colour, the latter with single dark dorsal spots (weak in one ♀). Hindtibia in ♂ dilated, with hair-pencil.

Forewing rather long and narrow, termen strongly oblique, scarcely sinuous; very pale glossy straw-colour, with scattered coarse brown irroration, the veins more or less strongly ochreous-brownish; lines ochreous-brownish or slightly ferruginous, variable in strength, in the ♂ type (which, however, is slightly rubbed) chiefly indicated as antemedian and postmedian vein-dots, in the ♀ complete; antemedian curved, from one-fourth costa (or proximally thereto) to before one-third hindmargin; median fine and slight, curving round or almost crossing the large fuscous oval or roundish cell-spot, which contains some light violet-grey scales; postmedian very slightly nearer to cell-spot than to termen, almost parallel with the latter except anteriorly, where it makes a slight curve proximad; accompanied distally by a slight ferruginous shade; position of subterminal line indicated by interneural black dots, the costal and subcostal rather large and strong, the rest smaller, in part obsolescent; terminal line not strong, interrupted.—*Hindwing*

with termen quite feebly crenulate; rather whiter than forewing; a very small grey discal dot; the beginning of a fine median line at inner margin; a thick (or double and partly confluent) postmedian from inner margin about to M^1 , becoming obsolete; conspicuous subterminal dots before and behind M^2 , rest of series entirely obsolete.

Forewing beneath with the cell-spot reproduced, markings otherwise weak except at costa; hindwing nearly as above, markings traceable at costa.

Mount Goliath, Central Dutch New Guinea, January—February 1911 (A. S. Meek). Type in coll. Tring Mus.

Akin to "*Chiasmia*" *papuensis* Warr. (*Nov. Zool.* xiv. 179), but larger, slightly narrower, termen of both wings rather less irregular, irroration much slighter. Even further from typical *Chiasmia* (*clathrata* L.) in shape and facies than Warren's species.

99. *Chiasmia* (?) *subcostistriga* sp. nov.

♂, 29 mm. Face and palpus pale brown, mixed with ferruginous. Palpus longish. Vertex whitish; occiput pale brown, mixed with ferruginous. Thorax above pale brown, mixed with ferruginous, across the middle dark purple-fuscous. Abdomen strongly mixed with ferruginous on sides and on fourth sternite. Legs pale, irrorated with ferruginous.

Forewing with termen elbowed at M^1 , oblique behind; very feebly subconcave between radials and behind M^2 ; very pale wood-brown, with irregular ferruginous irroration; a purple-fuscous subcostal streak from base to apex; first line ferruginous, narrowly pale-edged proximally, straight from subcostal streak 3 mm. from base to hindmargin at beyond 3 mm.; a ferruginous shade in cell near the cell-spot, emitting a straight median line which meets the first line at hindmargin; cell-spot somewhat elongate, its posterior extremity followed by a slight ferruginous shade between R^3 and M^2 ; postmedian line ferruginous, tinged with fuscous, narrowly pale-edged distally; slightly sinuous from the subcostal streak before two-thirds to hindmargin beyond two-thirds; area between postmedian and subterminal lines shaded with ferruginous, interrupted from R^3 to M^2 by a purple-fuscous cloud which extends nearly to termen; subterminal line white between SC^5 and R^3 , with two dark dots distally; a slight dark proximal edging; terminal line deep ferruginous; base of fringe ferruginous.—*Hindwing* with termen bulged at medians, here with two small teeth; very slightly concave between M^2 and SM^2 ; pale wood-brown, becoming whitish at costa and in submedian area; a thick ferruginous antemedian line from hindmargin to M beyond origin of M^2 ; postmedian line feeble and curved anteriorly, straighter from R^1 to fold, thickening, rather oblique inward to near abdominal margin, forming a thick, outwardly oblique spot at the margin; a terminal shade of purple-fuscous anteriorly, becoming ferruginous-mixed between R^3 and M^2 , emitting a ferruginous line from M^2 to tornus; terminal line and fringe as on forewing.

Forewing beneath less clouded, posterior part almost entirely pale; subcostal streak almost obsolete, but very dark from subterminal line to apex; cell-mark strong; lines present, reaching costa in strong proximal curves. Hindwing beneath mixed with white in proximal part as well as in submedian area; a strong cell-dot; curved antemedian and postmedian lines, thickest posteriorly; a vague line close beyond the postmedian; three blackish subterminal spots between the veins in anterior half of wing.

Kumusi River, N.E. British New Guinea, low level, August 1907 (A. S. Meek).
Type in coll. Tring Mus.

Shape nearly as in "*Chiasmia*" *papuensis* Warr., slightly exaggerated.

100. *Macaria connotata renotata* subsp. nov.

♂. Differs from the ♂ of the name-typical form from Trobriand Islands (Warren, *Nov. Zool.* iii. 304) in having the postmedian line of the forewing farther from the termen, not quite so sharply angled, narrowly pale-edged distally (thus more as in *connotata connotata* female), and in having a conspicuous black blotch surrounding the terminal excision (from SC^5 to R^3), the excision itself slightly deeper than in *connotata connotata*.

Goodenough Island (A. S. Meek). Type in coll. Tring Mus.

101. *Fascellina glaucifulgurea* sp. nov.

♂, 40 mm. Size, shape and structure nearly as in *chromataria* Walk. Antennal cilia longer (fully as long as diameter of shaft); hindwing slightly less produced at tornus. General coloration of upperside as in the darkest *chromataria* or still darker.

Forewing with the markings similar to those of *chromataria*, no trace of a pale discal spot, the triangular midcostal patch not very conspicuous; antemedian line in posterior half of wing better expressed, glaucous whitish, forming stronger and more rounded projections before and behind M^1 and at fold, almost right-angled inward at M^2 ; a fulgurated glaucous-whitish subterminal line from tornus about to M^2 , then gradually fading out.—*Hindwing* with the postmedian line very distinct, the bilobed projection between R^3 and M^2 still longer, the fulgurated subterminal line conspicuous all across the wing, with the deepest indentations at the radial fold and between C and SC^2 .

Both wings beneath darker than in *chromataria*, the postmedian dark band of the forewing tapering nearly to a point at hindmargin, more extended towards the termen anteriorly, its distal projection comparatively broad and flat at the end (occupying the space between SC^5 and R^1), instead of ending in a point on SC^5 .

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., March 1911 (A. S. Meek). Type in coll. Tring Mus.

102. *Fascellina tropaeosema* sp. nov.

♂ ♀, 43–48 mm. Shape and coloration of *chromataria* Walk.; structure of the preceding.

Forewing with the subhyaline white mark narrowed, restricted to a streak along the proximal edge of DC^3 , thus considerably longer transversely than longitudinally.—*Hindwing* almost as dark proximally as in middle; extreme inner margin and inner-marginal fringe brighter ochreous.

Forewing beneath with the central band formed about as in *glaucifulgurea*, an oblique dark half-band (or line) beyond it from hindmargin more noticeable; coloration lighter. *Hindwing* beneath bright orange-yellow, with a distinct, slightly curved reddish line from midcosta to fold, sometimes accompanied distally at costa by a thicker, darker line, which diverges from it at SC^2 and runs to a large dark spot (present even when the line itself is almost obsolete) between radial fold

and R^3 ; subterminal line distinct, not obscured by dark shadings, more deeply crenulate than in *chromataria*.

Goodenough Island, May 1913 (A. S. Meek). Both sexes in coll. Tring Mus. The ♀, as in *chromataria*, is more reddish above than the ♂.

103. *Sabaria** *rosearia colorata* subsp. nov.

♂, 35–36 mm. Larger than *rosearia rosearia* Leech, from E. China and Formosa, termen of forewing on an average rather less bent in middle, the liver-brown ground-colour much brighter, decidedly inclining to carmine, the olive-yellow postmedian line thick, forming a long but gentle inward curve between R^2 and SM^2 .

Vrianatong, Tibet, 3 ♂♂ in coll. L. B. Prout.

Sometimes the postmedian line is widened anteriorly, almost reaching apex, thus recalling *pulchra* Wileman (*Ent.* xlvii. 291).

104. *Pseudomiza ctenogyna* sp. nov.

♀, 43–45 mm. Face ochreous, mixed with reddish. Palpus deep ochreous, third joint distinct. Vertex and antennal shaft concolorous with wings, occiput redder; the antenna bipectinate, with quite short branches. Thorax and abdomen concolorous with wings.

Forewing with costa arched distally, apex pointed, termen nearly straight, slightly inclining to concavity in anterior part and convexity in posterior; SC^{1-2} long-stalked, their stalk connected by a short bar with C, R^2 appreciably before middle of DC; flesh-colour, more ochreous at costal margin, costal edge dotted with grey; a weak linear grey cell-mark; a ferruginous brown line, somewhat grey-shaded distally, from termen almost at apex to hindmargin little beyond middle; fringe ferruginous.—*Hindwing* with apex well marked, hinder angle almost rectangular, termen only weakly convex; concolorous with forewing, the oblique line continued to middle of abdominal margin; fringe ferruginous.

Underside orange ochreous, with sparse grey irroration, forewing showing traces of the cell-mark and with five vein-dots (R^1 to M^2) indicating the postmedian line; hindwing unmarked.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). 4 ♀♀ in coll. Tring Mus.

On account of the pectinate ♀ antenna will form a new section of *Pseudomiza* (= *Heteromiza* Warr.), if it be truly referable to this rather weakly grounded genus.

Cholomiza gen. nov.

Build robust. Face somewhat protuberant, sloping, with moderately appressed scales. Eye naked. Palpus moderate, rather stout, second joint with moderately appressed scales, third joint moderate. Tongue developed. Antenna fairly long, in ♂ subdentate, with strong but not long fascicles of cilia. Pectus and femora hairy. Hiindtibia with terminal spurs only; in the ♂ of the type species extraordinarily short (less than one-half femur), clothed with very long hair.

Forewing with apex rather acute, termen oblique, almost straight; SC^1 short-

* *Sabaria* Walk., *List Lep. Ins.* xxi. 492 = *Osicerda* Walk., *op. cit.* xxiv. 1083 = *Prionia* Guen., *Spec. Gén. Lép.* ix. 143, nec Hb.; all founded on forms of the variable *rondelaria* F.

stalked with SC^2 , anastomosing with C, SC^{3-5} stalked from well before end of cell, R^2 from scarcely before middle of DC, M^1 separate from R^3 .—*Hindwing* relatively rather small, both angles well expressed, termen smooth, little convex; C approximated to SC to nearly one-half cell, rapidly diverging, SC^2 well separate from R^1 , R^2 wanting, M^1 separate from R^3 .

Type of the genus: *Cholomiza tanypus* sp. nov.

Here belongs also *bimaculata* Warr. (*Nov. Zool.* xiv. 188, as *Mimomiza*), in which, however, the ♂ hindleg is of normal proportions and the ♂ antenna subpectinate, the stout, pointed pectinations being fully as long as diameter of shaft.

105. *Cholomiza tanypus* sp. nov.

♂, 44–45 mm. Similar to *bimaculata* Warr., differing in the ♂ antenna and hindtibia, extremely short hindtibial spurs (especially the outer), extraordinarily long first hindtarsal joint, and in the following particulars: Head less reddish, being very strongly mixed with lilacine grey; thorax posteriorly with a single dark spot in place of pair of small dots; abdomen less mixed with red.

Forewing with termen not slightly sinuate behind apex; blotch larger, reaching the antemedian line and confluent with the cell-spot; cell-spot smaller; both these less reddish, being very strongly mixed, except at margins, with lilacine grey; oblique line from apex slightly curved, more broken into spots.—*Hindwing* with the lines more broken into spots.

Underside with similar differences, all the markings more purple than reddish.

In ab. **praefflava** ab. nov. the blotches are wanting, as in the ab. of *bimaculata* of the same name.*

Upper Setekwa River, Snow Mountains, Dutch New Guinea, 2000–3000 ft., August 1910 (A. S. Meek). Type in coll. Tring Mus.

106. *Idiodes tenuicorpus* nom. nov.

Idiodes primaria Meyr., *Proc. Linn. Soc. New South Wales* (2) vi. 642 (1892) (nec Walk.).

Walker's type of *primaria* (*List Lep. Ins.* xxvi. 1610, as *Acidalia*), which is in the British Museum collection, belongs to the robust species comprehensively treated by Meyrick as *apicata* Guen. I am not at the moment in a position to revise the latter thoroughly, but the comparatively slenderly built species misidentified by Meyrick as *primaria* requires a new name. In both the examples which I have examined, SC^2 is exactly connate with SC^{3-5} and anastomoses strongly with SC^1 , subsequently more shortly with SC^{3-4} .

107. *Tolmera exuberans* sp. nov.

♂ ♀, 35–43 mm. Head ochreous, palpus marked with ferruginous (sometimes with fuscous) on outer side. Antenna in ♀ pectinate. Collar and thorax partly ferruginous, tegula with a large blackish spot. Abdomen as hindwing.

Forewing pale ochreous, marked (especially at veins and proximally to the black markings) with ferruginous and distally to the black markings with white;

* For the sake of uniformity I have followed Warren in making the blotched form the type, though it would have seemed more natural to consider it the aberration in both species.

a black costal spot at base and a subcostal dot between M and SM²; an antemedian row of three spots, the first large, at almost one-third costa, second small, on M nearer the base, third large, between M and SM², again nearer the base; an elongate subtriangular spot close to hindmargin between this and postmedian band; postmedian little beyond middle of wing, very irregular, anteriorly narrow, at nearly two-thirds costa, the rest mostly thicker, shaped roughly like a sea-horse, the head pointing inwards in cell, the body strongly curving inwards behind cell, a tail projecting outwards to just across SM²; a subterminal band consisting of long spots or thick wedges, confluent posteriorly, but broadly interrupted at R¹ and slightly (or almost) at R³; a large spot at termen between SC⁵ and R²; a row of large black terminal dots between the veins.—*Hindwing* grey-whitish with a slight ochreous admixture; a dark grey discal dot; very feeble indications of a postmedian line (or teeth on the veins), especially at R³ and M¹; a subterminal spot on radial fold and a smaller between M¹ and M².

Both wings beneath pale, with dark discal dot; forewing with the dark markings feebly reproduced; hindwing anteriorly and distally to cell with some dark irroration.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

108. *Tolmera niveibasalis* sp. nov.

♂, 43 mm. Head pale ochreous brown, palpus marked with fulvous on outer side. Antennal shaft and legs pale, irregularly spotted and blotched with fuscous. Thorax concolorous with forewing; abdomen paler.

Forewing pale ochreous brown, shaded with redder scales and coarsely but sparingly dusted with fuscous; costal edge strigulated with fuscous, except at origin of lines; a snowy white spot at base, larger and more triangular than in *albibasalis* Warr. (*Nov. Zool.* x. 404, xiii. 152); basal area otherwise a good deal clouded with fuscous, fovea strong, pale; first pale line from costa at 4 mm., nearly straight and thick to middle (not angled on SC), thence recurved and sinuous, narrowly reaching hindmargin at 3.5 mm.; followed by blackish line thickening to large spot costally; median area clouded with fuscous except in proximal part, containing the usual large blackish cell-spot; postmedian pale line at nearly two-thirds, strongly bicurved (S-shaped), preceded by blackish line which thickens a little to costa; distal area with irregular fuscous clouding, an apical patch distinctly clearer, four irregular large dark spots in middle of area—at costa, radials, between M¹ and M² and between M² and SM²; a small terminal cloud between SC⁵ and R³, its anterior edge oblique; subtriangular black terminal spots between the veins; fringe pale, spotted with fuscous at vein-ends.

Hindwing paler, more fleshy, with rather large dark cell-spot; a curved postmedian line, parallel with and 3–4 mm. from termen as far as M², then approaching tornus and becoming weaker.

Underside of hindwing brighter, more heavily marked, of forewing more weakly marked, especially posterior half; a line from costa following the postmedian.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). 3 ♂♂ in coll. Tring Mus.

Larger than *albibasalis* Warr., brighter, antemedian line not angled on SC, postmedian nearer termen, etc.

109. *Tolmera ecstatica* sp. nov.

♀, 42-45 mm. Face pale ochreous, spotted with fuscous; palpus mostly fuscous. Crown and front of thorax pale ochreous mixed with ferruginous. Antennal shaft pale ochreous, with scattered fuscous spots; pectinations well developed. Tegulae mixed with ferruginous and fuscous. Pectus and legs mostly dull fuscous, legs at extremities of joints pale. Abdomen dull fuscous, anterior segments pale above.

Forewing with termen rather more oblique than in typical *Tolmera*; SC¹ anastomosing at point or connected by short bar with C; glossy deep fuscous, at hindmargin mixed with pale ochreous, the veins in part (R¹, M, R³, M¹, the proximal half of M², SC² except at base, and the distal extremity of SC⁵, R² and M²) white or whitish; a white spot at base; antemedian and postmedian lines double, the obverse elements pale ochreous, the reverse pure white, a slender dividing-line of the ground-colour; antemedian from two-sevenths costa, nearly vertical to SM², then sharply bent basewards; postmedian from before two-thirds costa, nearly as oblique as termen to R³ or M¹, then forming an irregular, shallow sinus inwards; subterminal line pure white, forming a large V-shaped indentation from before R³ to behind M¹, close to termen a pale ochreous line from R³ to M²; fringe pale ochreous, with a fine white line at base.—*Hindwing* dull fuscous, with an ill-defined whitish postmedian line, which bends outward at abdominal margin; very faint traces of a pale subterminal line; fringe pale ochreous, mixed (except a slender line at base) with fuscous.

Both wings beneath dull fuscous; forewing with the pale lines faintly reproduced, all in pale ochreous; more distinct costal spots at their origin; hindwing with the postmedian line even weaker than above.

Mount Goliath, Central Dutch New Guinea, January—February 1911. Type in coll. Tring Mus.

110. *Cleora hoplogaster* sp. nov.

♂ ♀, 36 mm. Head ochreous, with some blackish admixture (occasionally feeble), the palpus rather short, with rather long projecting, mostly blackish, hair-scales beneath. Antennal shaft ochreous and blackish in irregular alternations; pectinations in ♂ rather long. Thorax above blackish, with ochreous spots. Abdomen above whitish, somewhat mixed with ochreous and ferruginous, and with spots and belts of purple fuscous; beneath in ♂ somewhat tufted and with a strong horny process arising apparently from the fifth sternite and running almost in the plane of the abdomen, clothed above with projecting hair, beneath with shorter hair. Legs fuscous above, spotted with ochreous at ends of joints; hindtibia in ♂ with strong ochreous hair-pencil.

Forewing with termen smooth; SC¹ and SC² free; fovea in ♂ developed; rather smooth-scaled, very variegated, the prevailing impression being of bright ferruginous varied with deep fuscous; basal area largely fuscous, bounded by a thick whitish-ochreous line from costa just beyond one-fifth, acutely angled outwards in cell, then oblique inwards, ending in a rather more oblique white mark beyond one-fifth hindmargin; median area broad, a fuscous costal spot at each boundary, otherwise fuscous strigulated or mixed with pale ochreous, the veins broadly ferruginous; sometimes a broad, strongly angled, dark median shade; cell-spot large, beyond middle of wing; postmedian line obtusely angled between

medians, becoming oblique inwards; pale ochreous, at hindmargin whitish; accompanied proximally by white interneural spots; distal area ferruginous, mixed (especially near termen) with pale ochreous, costa as in central area, subterminal line slender, interrupted, white, with large fuscous blotches proximally at each margin and between radials and a smaller one distally between SC^5 and R^1 ; a white or whitish streak projects from the subterminal proximally between SC^5 and R^1 ; a pale ochreous apical mark between SC^4 and SC^5 ; termen with thick blackish lunules; fringe fuscous, with subtriangular ochreous marks opposite the lunules.—*Hindwing* with termen waved, scarcely subcrenulate; dirty ochreous whitish, weakly irrorated with purplish fuscous; a cell-spot, sinuous postmedian line and terminal lunules; fringe more ochreous-tinged, weakly spotted with fuscous opposite the veins.

Underside pale ochreous, irrorated (the forewing for the most part suffused) with purplish fuscous; cell-spots and terminal lunules well developed; postmedian line of both wings as above, that of hindwing accompanied distally by a faint pale line.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

General aspect and scheme of coloration of *curvilinea* Warr. (*Nov. Zool.* xiii. 147, described from the ♀ as a *Paralcis*), possibly even a local modification of it, but brighter, the subterminal line whiter, not thickened at costa but with more distinct proximal projection before R^1 . In a systematic revision of the genera *Boarmia* and *Cleora* (= *Alcis*) it will require a new section, if not a new genus.

111. *Cleora fenestrata* sp. nov.

♂, 30 mm. Face cream-colour, upper part brown. Palpus mostly dark, base and innerside partly pale. Vertex straw-colour, with slight dark spots. Antennal shaft dark, with straw-coloured spots; pectinations moderately long. Thorax and abdomen concolorous with wings. Hindtibia scarcely dilated.

Forewing not very broad, termen smooth, oblique; SC^1 from cell, connected with C, SC^2 free; fovea developed; glossy whitish straw-colour, slightly sprinkled (except in a few places, notably a patch distally to the cross-vein and one posteriorly to the origin of M^2) with brown; veins tawny olive; some brown spots near base; lines brown; antemedian double, its proximal element thick, both angled outwards behind SC, then somewhat sinuous and oblique inwards; median line single, bending slightly inwards at SC, crossing cell near the elongate cell-mark, connected by dark shading with the proximal from M to SM^2 , then oblique basewards; postmedian double, about 3 and 4 mm. from termen, slightly incurved after crossing R^3 and angled outwards on SM^2 ; pale subterminal line irregularly dark-edged proximally (except between SC^5 and R^1) and distally, the dark distal shading reaching termen between SC^5 and R^3 and again behind M^2 ; termen with elongate interneural dark spots; fringe sharply chequered.—*Hindwing* with termen very feebly subcrenulate; dirty whitish, with less elongate cell-mark and three or four extremely feeble and interrupted lines distally hereto, scarcely traceable anteriorly to R^1 ; fringe concolorous.

Forewing beneath more feebly marked than above. Hindwing beneath less white than above, with coarse irroration, slightly confluent into lines posteriorly,

wanting only along abdominal margin and more broadly behind cell ; fringe faintly chequered.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus.

112. *Cleora colorifera* sp. nov.

♂, 38 mm. Similar to *variegata* Moore (*Lep. Coll. Ath.* p. 240), antennal pectinations considerably longer, coloration much brighter ochraceous, inclining to bright ferruginous in parts, especially between postmedian and subterminal lines.—*Forewing* with SC¹ and SC² free (in *variegata* short-stalked), discal spot larger, subterminal line not whitish, thus scarcely indicated except by the dark proximal markings ; these are posteriorly more developed than in *variegata*, almost filling the space between postmedian and subterminal lines.—*Hindwing* also with subterminal line obsolescent.—Both wings beneath with the dark border better defined.

Penang, January—April 1899 (Curtis). Type in coll. Tring Mus. Paratype in coll. L. B. Prout, merely labelled "Straits Settlements."

The hindtibia is dilated, with strong hair-pencil. The fovea is very highly developed.

113. *Cleora cockaynei* sp. nov.

♀, 42 mm. Face strongly rough-scaled, deep fuscous. Palpus with second joint rough-scaled above and beneath, third joint moderate ; blackish fuscous, with a few pale ochreous scales. Antennal pectinations long, rather more lax than in *semiclarata* Walk. (*List Lep. Ins.* xxiv. 1029). Hindtibia not appreciably dilated, apparently without hair-pencil. Head and thorax dark fuscous (abdomen lost). Fore and middle legs mostly blackish, the fore femur pale beneath, tibia and ends of tarsal joints pale-spotted ; hindleg mixed pale and fuscous.

Forewing rather broad, termen oblique, very gently curved, somewhat waved ; SC¹⁻² short-stalked ; dark fuscous with some pale ochreous irroration ; costal edge with some pale ochreous dots and minute strigulae, the most conspicuous bounding the extremities of the antemedian and postmedian lines ; lines black, rather thick but not very conspicuous ; antemedian double, formed about as in *semiclarata* ; median scarcely expressed except in anterior part, where it makes a sharp angle close distally to the rather large but not sharply defined discal spot ; postmedian placed nearly as in *semiclarata*, but with its posterior part more incurved and more irregular ; subterminal pale line fine and interrupted, the pale patch between radial fold and M¹ much less conspicuous than in most *semiclarata*, the blackish streaks in the rest of the distal area also inconspicuous ; terminal black spots large, accompanied at base of fringe by slight pale marks.—*Hindwing* with termen crenulate ; proximal two-thirds whitish, with some obscure grey clouding basally and with a rather large blackish discal spot ; a postmedian row of grey vein-dots ; distal area more tinged with ochreous and strongly powdered with fuscous ; terminal dots large.

Forewing beneath with fuscous suffusion except at hindmargin, the pale costal markings and distal patch between R³ and M¹ more developed than above ; discal spot blackish ; postmedian line indicated in anterior part only, by dark

vein-dots. Hindwing beneath nearly as above, or slightly more ochreous, the proximal part irrorated rather than suffused.

Tosari, Java (Tengger Crater), July 5, 1910 (E. A. Cockayne). Type in coll. L. B. Prout, kindly presented by the discoverer.

Larger and altogether darker than *semiclarata* Walk., which has hindtibia dilated, SC¹ and SC² of forewing separate, hindwing less strongly crenulate, with smaller cell-spot, etc.

114. *Cleora euphiles* sp. nov.

♂, 38 mm. Face brown, mixed with black; lower extremity grey. Palpus with third joint minute, concealed; strongly blackish-mixed on outer side. Antennal shaft pale grey; pectinated to almost four-fifths, the branches of moderate length. Thorax and abdomen concolorous with wings. Fore and middle legs and hindtarsus mostly darkened, except at extremities of joints; hindtibia dilated, with strong hair-pencil; hindtarsus short.

Forewing with termen waved; fovea well developed; SC¹ shortly stalked with SC², anastomosing moderately with C; violet-grey, with minute dark irroration, the basal area, most of that between postmedian and subterminal lines and part of terminal area (about from R² to M²) except at extreme margin strongly suffused with walnut-brown; antemedian line not very strong, from a darker mark at one-fourth costa, excurved in cell, then fairly direct to two-sevenths hindmargin; median line somewhat thickened and blackened costally, otherwise mostly walnut-brown, absorbing the cell-mark, excurved behind M², reaching hindmargin almost at middle; postmedian rather thick at costa and especially from about R² onward, black, from two-thirds costa, slightly incurved at first, a little excurved about radials, rather deeply incurved between R³ and fold; a blackish admixture in the brown shade distally to the last-named curve; subterminal line chiefly indicated by a narrow dark shade proximally to it, weakly incurved between R² and SM²; an ill-defined oblique dark marginal shade behind R¹; terminal line and interneural dots weak: fringe violet-grey, very feebly spotted with brownish.—*Hindwing* with termen moderately crenulate; violet-grey, with a rather weak band of walnut-brown distally to the postmedian line and a still weaker distally to the subterminal; markings obsolete at costa; median line brown, weakly indicated, straightish, proximal to the cell-dot; cell-dot not very sharp; postmedian line black, close beyond cell-dot, scarcely incurved, rather oblique outwards at abdominal margin; subterminal line as on forewing.

Underside of a more isabelline tone, somewhat suffused with grey proximally (especially on forewing); costal margin ochreous, with fine black strigulation; both wings with moderate cell-spot and dark grey postmedian line, more distally placed than above, much straighter, darkened on the veins.

Vrianatong, Tibet. 2 ♂♂ in coll. L. B. Prout.

115. *Chogada compectinata* ab. *fasciata* ab. nov.

The slight dark shades which in typical *compectinata* Warr. (*Nov. Zool.* xiii. 141) accompany the antemedian and postmedian lines on their reverse sides and also the proximal shading of the subterminal thickened and strongly blackened.

Mount Goliath, Central Dutch New Guinea, 5000—7000 ft., February 1911 (A. S. Meek). Both sexes, together with the type form, in coll. Tring Mus.

116. *Chogada alienaria hospita* subsp. nov.

♀, 42-46 mm. Upper surface scarcely distinguishable from the most sharply marked ♀ examples of name-typical *alienaria* (= *acaciaria* Hmps. nec Bsd.; distributed from India to Australia) except that the cell-marks are narrower, especially on hindwing; median line of forewing usually stronger, but this is rather inconstant. Under surface with the dark marginal band of the forewing not quite reaching the postmedian line, gradually narrowing, disappearing at M^2 , not reappearing on hindwing, only extremely faintly suggested.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). 3 ♀♀ in coll. Tring Mus.; unfortunately I have not seen the corresponding ♂.

117. *Boarmia (Serraca) sponsa* sp. nov.

♂, 60 mm. Structure and general coloration of *punctinialis* Scop. (= *consortaria* F.) from Europe and *conferenda* Butl. from Japan, but with the light-brown sexual patch of the hindwing beneath much more strongly developed—almost as in the Indian species of the group (*infixaria* Walk., *transcissa* Walk., and *lioptilaria* Swinh.); further distinguished by its large size and sharper markings.

Forewing with SC^1 out of C, anastomosing with SC^2 ; slightly brownish white, irrorated with pure white and sparsely with fuscous; lines and cell-spot formed as in the allies; antemedian thickened at costa and blackened from SC^2 to hindmargin; median strong towards hindmargin, strongly angled inwards on SM^2 ; postmedian as in the most sharply-marked *conferenda*, the brown band beyond it rather well developed; dark costal shade proximally to the subterminal stronger than in the allies.—*Hindwing* with median and postmedian lines strong, except at costa, the band distally to the postmedian strong and dark.

Underside with cell-marks large and strong; cell of forewing with dark (sometimes strongly blackish-fuscous) irroration.

Vrianatong, Tibet. 9 ♂♂ in coll. L. B. Prout.

118. *Ophthalmodes prasinospila* sp. nov.

♂, 67 mm. Head green, the lower part of face dirty white, above which is a slightly interrupted blackish band. Palpus with second and third joints mostly black. Antennal pectinations short for the genus (scarcely four times diameter of shaft). Thorax pale green. Abdomen still paler, with a pair of black spots dorsally on each segment. Fore and middle legs blackened on upper and inner side; hindtibia moderately dilated, with hair-pencil.

Forewing elongate; base of SC^1 obsolete, leaving this vein to arise out of C; white, with light olive-green irroration and minute strigulation, strongest at base, moderately strong at apex; some irregular blackish marks on costal edge; markings otherwise light olive-green; a rather thick, double antemedian line, arising from a costal blotch at 4-8 mm. from base, sinuous (lunulate inwards between fold and SM^2) to hindmargin rather near base; discal ocellus large, mixed with a few blackish scales, the white centre confined to the cross-vein itself; median shade best expressed at costa (angled outwards on R^1) and behind M^2 , where it forms a blotch touching the postmedian; postmedian line rather thick, from beyond two-thirds, angled outwards on R^1 , almost rectangularly bent on R^3 ,

running obliquely inwards to behind M^2 , then outwards to hindmargin; a diffuse green shade distally to this line, especially anteriorly; a small green patch from costa to SC^5 proximally to the subterminal, indented by the subterminal on SC^4 and obliquely bounded by the next indentation thereof; a terminal blotch from R^1 across R^2 , a larger one behind M^2 , narrowing to tornus; the dentate subterminal indicated on both blotches; terminal dots green, with a few blackish scales; fringe weakly spotted with green opposite the terminal dots.—*Hindwing* elongate, termen very feebly crenulate; discal mark large (more extended transversely than longitudinally), more black-mixed than on forewing; antemedian line wanting; median strongest from base of M^2 onwards, curving so as to become oblique outwards; postmedian double, obsolete at costa; terminal area nearly as on forewing, apex less irrorated; fringe not appreciably spotted.

Forewing beneath white, markings black, namely: costal dots, an anterior subbasal suffusion, very large cell-spot, subapical patch from costa to termen behind R^2 and thick line from costa to R^3 proximally to this patch. Hindwing with large cell-spot and weak traces of subapical patch.

Vrianatong, Tibet. Type in coll. L. B. Prout.

119. *Hemerophila dioxypages* sp. nov.

♂, 40 mm. Face light brown, with a reddish tinge; upper one-third strongly blackened. Palpus rather short; second and third joints externally mixed with red-brown and blackish. Antennal pectinations moderately long. Vertex, thorax and abdomen concolorous with wings, a blackish mark on front of thorax. Hind-tibia dilated, with hair-pencil.

Wings shaped about as in *subplagiata* Moore; hindwing not quite so deeply crenulate.—*Forewing* with SC^1 from cell, anastomosing shortly with C, SC^2 from cell, anastomosing shortly with SC^1 and with SC^{3-4} ; light red-brown, slightly violaceous, just proximally to first line and again in distal area more definitely red-brown; costal margin weakly dark-spotted; lines black, fine, thickened from costal margin to SC^1 ; antemedian from two-sevenths costa, extremely oblique outward to a long, acute tooth on SC, a second, equally acute tooth on M (a deep lunule between them), then oblique inwards and slightly sinuous to scarcely one-fourth hindmargin; no cell-spot; postmedian from nearly three-fourths costa, with the thick part oblique inwards, then very oblique outwards and exceedingly slender to an acute angle before R^1 , thence very gently sinuous, approximately parallel with termen, to two-thirds hindmargin; subterminal line whitish anteriorly, soon becoming very indistinct; a narrow, rather weak dark shade proximally to it from R^1 to hindmargin, strongest anteriorly; no terminal line.—*Hindwing* concolorous, the antemedian line and the reddish shade proximally thereto wanting, the postmedian not thickened costally nor angled sub-costally, the subterminal line becoming broad and whitish at abdominal margin.

Vrianatong, Tibet. Type in coll. L. B. Prout.

120. *Paradromulia* (?) *polyploca* sp. nov.

♂, 44 mm. Face blackish in upper half, pale ochreous in lower. Palpus mostly blackish, mixed with ochreous at tip. Vertex pale ochreous. Collar mixed with blackish. Patagia black, with a pale spot. Thorax above ochreous, with

blackish markings. Legs spotted, pale ochreous and fuscous. Abdomen mostly ochreous, palest at base.

Forewing pale ochreous or somewhat stramineous, in places deeper ochreous, in places sparsely but coarsely dotted with blackish; markings blackish, very intricate, consisting of rather thick transverse lines and some thicker longitudinal streaks; first line close to base, posteriorly bending so as to run into first antemedian; antemedian double, the outer from nearly one-fourth costa, both angled at SC, twice bent outwards, confluent at fold, then divaricating; median from midcosta, opening out into a loop so as to enclose a round pale spot at middle of discocellulars, then more slender, sinuous, to two-fifths hindmargin; postmedian double, only the proximal dentate, both (especially the proximal) incurved in posterior half, the proximal exangled at fold, the two diverging at hindmargin; a dark streak along and behind R^1 , connecting the outer with subterminal; subterminal blackish, about 2 mm. from termen, strongly inbent between R^3 and M^1 , touching the postmedian; distally some pale spots (mostly triangular) are enclosed between R^1 and M^1 and again between M^2 and hindmargin by somewhat Y-shaped marks which run from the terminal line to the subterminal; terminal line rather thick, waved or somewhat lunulate; fringe with blackish spots opposite the veins. — *Hindwing* without the basal and antemedian lines; median slightly sinuous, before two-fifths; discal ocellus very incomplete and indefinite; proximal postmedian as on forewing, distal obsolete in anterior half; a longitudinal streak behind R^3 connecting postmedian with subterminal; subterminal and terminal markings nearly as on forewing.

Underside similarly but less sharply marked.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January 1911 (A. S. Meek). Type in coll. Tring Mus.

In structure almost identical with *P. ambigua* Warr. (*Nov. Zool.* iii. 301), antenna scarcely so long, hindwing with termen rather less strongly crenulate, most of the hairy clothing of the underside lacking. Superficially recalls *Proteostrenia leda strenioides* Butl. Might be a *Paralcis*, but I am not yet clear how *Paradromulia* differs fundamentally therefrom.

Dyscheralcis gen. nov.

Face with appressed scales. Palpus rather short, second joint shortly rough-scaled, third joint smooth, quite short. Tongue present. Antenna in ♂ simple, only with very minute and sparse cilia. Pectus hairy. Femora nearly glabrous, Hindtibia in ♂ not dilated, all spurs developed. Forewing not broad, apex round-pointed, termen smooth, gently curved; fovea wanting; SC^{1-2} coincident, anastomosing slightly or connected with SC^{3-4} (sometimes also with C), R^2 normal, M^1 almost connate with R^3 . Hindwing with apex rather rounded, termen almost smooth, rounded, fullest about R^3 , straighter posteriorly; C closely approximated to SC to less than one-half cell, rapidly diverging, SC^2 from near apex of cell, R^2 wanting, M^1 from close to R^3 .

Type of the genus: *Dyscheralcis retroflexa* sp. nov.

On account of the scaling and pattern, I have no doubt that this genus, notwithstanding its simple structure, belongs to the *Boarmia* group. Apart from the ♂ characters, it may even prove difficult to differentiate from *Boarmia*. The smooth termen separates it from the great majority of that group, but cannot alone be relied on.

121. *Dyscheralcis retroflexa* sp. nov.

♂ ♀, 29–32 mm. Head white, face with a slight dark bar across middle, palpus dark-marked at ends of first and second joints. Body dirty white. Fore and middle legs with black patches at end of tibia and of tarsal joints.

Forewing white, with quite inconspicuous light fuscous irroration or short strigulation; markings dark fuscous; a thick line close to base; antemedian line from costa at about one-fourth, somewhat excurved to fold, then suddenly inbent to SM²; accompanied proximally by a narrow band, which under the lens appears finely fluted (like the dark markings of many *Myrioblephara*, etc.), and which narrows and parts somewhat from the line posteriorly; median shade strong anteriorly, rather oblique outward, crossing cell-spot but becoming obsolete; cell-spot long-oval, blackish at edges, paler in middle; postmedian line from before two-thirds costa, strongest at veins, slightly oblique outwards to behind R³, inwards to M¹, then obsolete, reappearing at M² much farther from termen (almost as a continuation of median shade), but weak and irregular, oblique outwards to beyond two-thirds hindmargin; an indistinct, interrupted shade or line distally to the postmedian; subterminal line dentate, fairly well expressed anteriorly, on account of a narrowing greyish apical shade; termen with dark interneural streaks; fringe weakly spotted.—*Hindwing* more heavily irrorated, the costal margin, a small patch at abdominal margin near base and some patches between the postmedian and subterminal shades remaining clear; a thick line from abdominal margin close to base; cell-mark black, narrower than on forewing; median line sinuous, chiefly indicated by black vein-dots between cell-spot and abdominal margin; the rest nearly as on forewing.

Both wings beneath dirty whitish, the forewing slightly the more smoky and with dark cell-mark and weak apical shade.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

122. *Myrioblephara trifaria* sp. nov.

♂ ♀, 28 mm. Head ochreous-whitish, mixed with ferruginous. Palpus at base white, otherwise mostly ferruginous. Thorax and abdomen above ochreous-whitish, mixed with ferruginous; a bar of ferruginous at end of metathorax and base of abdomen. Foreleg infuscated, except at ends of joints.

Forewing dull white, with sparse fuscous irroration; proximal area predominantly dull ferruginous; antemedian line fuscous, slightly sinuous, thick from two-sevenths costa about to fold, then obsolete; discal dot small and weak; a weakly S-shaped ferruginous median line, starting from a bright costal spot, in middle weak, its outward curve just distal to the cell-dot; postmedian fuscous, from about three-fifths costa, excurved from R¹ nearly to R³, almost vertical to costa to behind M¹, here slightly bent, somewhat sinuous to three-fourths hindmargin; accompanied distally by a broad, posteriorly narrowing, dull ferruginous band, which merges in anterior part into some dull ferruginous, fuscous-mixed apical shading; subterminal line crenulate, only distinct (more or less fuscous-bounded) in anterior half; an ill-defined pale terminal spot between R³ and M¹; another at tornus, partly cut by a ferruginous-fuscous tornal line; terminal dots fuscous, elongate; fringe weakly spotted.—*Hindwing* with ferruginous median line strong, placed as a continuation of the antemedian, rather strongly oblique

outwards at abdominal margin; discal mark fuscous, comma-shaped; postmedian line nearly vertical from about middle of costa to R^3 or M^1 , here curved, becoming parallel with termen or more oblique inwards, darkened on M^2 , then sharply bent, running very obliquely outwards to two-thirds hindmargin; the ferruginous band beyond narrower than on forewing, obsolete anteriorly; a fuscous shade proximally to the subterminal, at least in anterior half; ferruginous vein-spots (the anterior ones large) near termen; termen and fringe as on forewing.

Forewing beneath largely smoky, the distal area wholly so; the three lines and the cell-dot feebly indicated. Hindwing beneath less smoky, excepting in submarginal band; the two lines and cell-mark distinct.

Snow Mountains, Dutch New Guinea: Upper Setekwa River, 2000–3000 ft., August and September 1910 (type); near Oetakwa River, up to 3500 ft., October–December 1910 (A. S. Meek). All in coll. Tring Mus.

Near *flexilinea* Warr. (*Nov. Zool.* x. 392), the lines weaker, not so extremely flexuous, etc.; the ferruginous distal shadings recall *apicata* Warr. (xiv. 173), but are less well defined, less restricted.

123. *Myrioblephara vivida signata* subsp. nov.

♂ ♀. Rather larger than *vivida vivida* Warr. (*Nov. Zool.* x. 394), the irroration and markings darker, especially the outer spot of the forewing at R^3 – M^1 . Hindwing with the median shade thicker, rather more distally placed, postmedian line farther removed from cell-spot.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

124. *Myrioblephara transcendens* sp. nov.

♂, 28 mm. Head and body mostly concolorous with wings. Palpus darkened on outer side. Metathorax and third and fourth abdominal segments each with dark dorsal patch.

Forewing whitish, irrorated and clouded with brown, a part of the basal area, a narrow, ill-defined band proximal to the postmedian and another proximal to the subterminal remaining whiter; costal margin with some blackish spots; antemedian line curved, median obsolescent, apparently scarcely beyond the cell-mark, the entire area between it and the antemedian filled-in with brown, mixed with blackish; cell-mark black, longer than broad; postmedian feeble, except as blackish vein-dots, from just before two-thirds costa, excurved between R^1 and R^2 , then incurved; an elongate blackish-mixed blotch distally to this, between R^2 and M^1 , nearly as in *proximata* Warr. (*Nov. Zool.* xiv. 174), but larger; the whitish band beyond starts from the subterminal between SC^5 and R^1 , is arcuate inwards, confluent again with the subterminal between R^3 and M^1 , then again incurved, almost interrupted on M^1 , broadening rapidly to hindmargin; subterminal dentate, not conspicuous, more or less filled-in proximally with dark spots, except where interrupted by the curved band; terminal area dark-mixed between radials and towards tornus; termen with black interneural dots; fringe with fine pale lines at base and beyond middle and with weak dark spots opposite the veins.—*Hindwing* with strong double dark line proximally to the cell-dot, not reaching costa, curved outward at abdominal margin; postmedian sinuous, black-dotted on veins, not

quite reaching costa, accompanied distally by a brown band; outer area much as on forewing.

Underside with smoky suffusion, especially on forewing; lines and cell-marks present, not very sharp, the antemedian and median of forewing especially blurred; forewing with a feeble dark terminal band, scarcely interrupted in middle; hindwing with a similar subterminal band, fading out paler to termen.

♀ almost without the brown shading, the dark bands and blotches even sharper.

Ninay Valley, Central Arfak Mountains, Dutch New Guinea, 3500 ft., November 1908—January 1909. Type in coll. Tring Mus.

125. *Myrioblephara pallidipars* sp. nov.

♂, 28–33 mm. Face light brown, with a darker, redder-brown spot on each side. Palpi brown, darkest on outer side. Vertex light brown. Thorax and abdomen light brown, above with dark admixture; a pair of dark dorsal spots at base of abdomen.

Forewing light wood-brown, with darker, more tawny irroration; costal margin spotted with blackish fuscous at the commencement of the lines; lines fuscous, interrupted (more or less broken into vein-dots, at least in posterior part); first close to base; second just beyond the fovea, very slight except at costa; antemedian from beyond one-third costa, somewhat excurved in cell, then oblique inwards, somewhat curved again towards SM^2 ; cell-mark longer than broad; median line bent round cell-mark, usually close to it, duplicated distally by a still more feeble line; postmedian from about two-thirds costa, bent behind R^1 , though rather less acutely than in some *Myrioblephara*, oblique inwards to near hindmargin, then again outwards; a weaker duplicating line distally; subterminal lunulate-dentate, irregularly dark-shaded proximally and between radials and behind M^2 distally; termen with dark interneural dots; fringe somewhat paler, with narrow dark marks at vein-ends. — *Hindwing* with termen well crenulate, the teeth at R^3 and M^1 rather pointed; anterior part whitish, almost or altogether without markings; a pair of strongly dotted median lines posteriorly to cell, curving outwards at abdominal margin; a similar pair of postmedian, the proximal with strong dark teeth on the veins, the distal weaker, at most with dark dots on R^3 and M^1 ; distal region about from R^1 to abdominal margin nearly as on forewing.

Underside pale brownish, forewing proximally slightly smoky; discal dots present; forewing with postmedian, hindwing with median and postmedian, single smoky lines, accentuated by dots on the veins; both wings with feeble smoky subterminal line.

Mount Goliath, Central Dutch New Guinea, 5000–7000 ft., January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

126. *Myrioblephara olivacea brunnescens* subsp. nov.

♂ ♀. Differs from *olivacea olivacea* Warr. (*Nov. Zool.* xiii. 144) in having all the olive-green markings more brown ("tawny olive"—Ridgway), thus more assimilating in colour to various other species of the genus, but still easily recognisable by the hindwing.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

127. *Myrioblephara mixticolor* sp. nov.

♂, 30–33 mm. Larger than *miscellanea* Warr. (*Nov. Zool.* xiv. 173), coloration similar, ground-colour slightly paler. Face more uniformly coloured, inclining to ferruginous. Wing-markings very distinct from those of *miscellanea* in the following particulars.

Forewing with antemedian line much more oblique inwards; median line more feeble; postmedian acutely angled outwards behind R^1 ; fringe with strong dark spots at vein-ends.—*Hindwing* with both the lines strongly sinuous, the antemedian approaching the "S-shape," the postmedian near the cell-spot, bending in towards it between the radials, strongly outwards at R^3-M^1 and very deeply inwards at submedian fold; fringe with strong dark spots.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

128. *Myrioblephara cneobathra* sp. nov.

♀, 28 mm. Head and palpus buff, slightly mixed with ferruginous. Thorax buff. Legs on the inner side blackish, outside more varied light and dark. Abdomen dorsally buff, with a pair of dark spots on the first segment; beneath mostly smoky.

Forewing buff from base to first line, otherwise dark grey irrorated with shiny whitish scales; costal edge dotted with ochreous; markings deep fuscous; first line from one-fifth costa, rather thick, curved and somewhat oblique inward, closely followed by a finer, more interrupted line; cell-spot black, slightly elongate; median line fine, acutely angled distally to the cell-spot, both ends of which it touches, then slightly incurved and oblique inward; followed distally by a broader, anteriorly obsolescent shade; postmedian line from two-thirds costa to beyond two-thirds hindmargin, incurved between M^1 and SM^2 , throughout with very short thick proximal teeth on the veins; a shade about 1 mm. wide distally to and parallel with this; a fine irregularly crenulate subterminal line, indicated by irregular dark shades proximally and distally, the proximal thickened between the radials and from M^2 to hindmargin, the distal between radials and between medians; tornus pale; terminal black dots not very strong; fringe weakly spotted.—*Hindwing* without buff base; antemedian line indicated by a spot on abdominal margin close to base; double median curved, just proximal to the comma-shaped cell-mark; distal half nearly as on forewing.

Forewing beneath slightly more ochreous, with strong smoky suffusions, especially along submedian area and in entire distal area; base pale, partly tinged with buff; cell-mark strong; lines feeble. Hindwing beneath pale from base to postmedian line, both the median lines distinct, cell-mark strong; distal area smoky, except a part of abdominal margin.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October–December 1910 (A. S. Meek). Type in coll. Tring Mus. Also 3 ♀♀ from Mount Goliath.

129. *Myrioblephara ligdioides contradicta* subsp. nov.

Ground-colour more mixed with light brown than in *ligdioides ligdioides* Warr. (*Nov. Zool.* x. 392); median area of forewing slightly less broad, the proximal band being somewhat further removed from the base; a black discal mark present,

touching the band distally; postmedian line better expressed, also indicated on hindwing; subterminal dark shading more complete; both wings beneath more infuscated.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., February 1911 (A. S. Meek). Type in coll. Tring Mus. Also from near Oetakwa River, October–December 1910.

130. *Myrioblephara polytrochia* sp. nov.

♂♀, 25–28 mm. Face brown-whitish, with an interrupted blackish band across middle. Palpus with outer side mixed with brown and blackish, especially towards ends of joints. Vertex brown-whitish, with a very narrow black band across the front. Antennal shaft brown. Thorax and abdomen whitish, strongly mixed with light brown.

Forewing whitish, mixed (especially in the form of ill-defined bands between the dark markings) with light brown; the markings consist of round or roundish blue-grey spots and dots of varying size, on which are placed here and there smaller deep-black spots and dots; antemedian consisting of a small dot at costa and a large spot on M; cell-spot small, at about two-fifths wing-length; postmedian at little beyond middle, consisting of a small spot at costa, a large one from SC⁵ nearly to R², a still larger from before R³ to behind M² and a small one (more proximally placed) on SM²; subterminal rather near termen, consisting of a small spot at costa, a rather elongate one between SC⁴ and SC⁵, a moderately large one between R¹ and R³, and a small one between M¹ and M²; a row of terminal dots between the veins; fringe brown proximally, paler distally.—*Hindwing* similar, but with an additional dot on hindmargin at scarcely two-fifths, the postmedian series median, absorbing the cell-spot, the subterminals larger, with an additional one between SC² and R¹.

Both wings beneath rather browner, the spots confluent into blackish bands, which break off about the fold; abdominal margins rather pale; cell-spot of forewing larger than above.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus. Also from near Oetakwa River, October–December 1910.

A rather striking little species on account of the spotted upperside, which is very manifest even in aberrations in which the spots are more or less connected by bands.

131. *Myrioblephara distanticlara* sp. nov.

♂, 37 mm. Face and palpus blackish fuscous. Crown buff, mixed with red-brown posteriorly. Antennal shaft pale buff, heavily dark-spotted proximally; ciliation little over twice as long as diameter of shaft. Collar red-brown. Thorax above buff; beneath, with abdomen, paler.

Forewing with SC¹⁻² coincident; pale buff, the costal edge tinged with red-brown and slightly strigulated with blackish fuscous; a red-brown cloud in and just behind cell, running out distally between R² and fold and joining a transverse red-brown cloud which accompanies the postmedian proximally and distally; lines blackish fuscous; antemedian consisting of a dot on costa at 3.5 mm., dots on SC and M nearly vertical to this, a more proximally placed dot on SM² and very fine line, oblique inwards, from SM² to hindmargin; postmedian consisting of vein-dots

slightly connected by a very fine line; commencing about 5 mm. from apex, slightly incurved between SC^1 and R^1 , slightly angled outwards at SM^2 , then very oblique inwards to hindmargin; median line feeble, very near postmedian; cell-mark blackish fuscous; a streak of the ground-colour distally to it between R^1 and R^2 ; a band near termen, strikingly clear, whitish buff; subterminal line indicated by blackish dots, especially at costa, before SC^5 and in the radial cellules; termen, except apically, with slight red-brown shading (fuscous about R^1); terminal line crenulate, termen itself smooth; fringe feebly (opposite SC^5 and R^1 more strongly) dark-spotted.—*Hindwing* dirty whitish, somewhat sprinkled and clouded with fuscous towards abdominal margin; discal dot faint; very feeble indications posteriorly of a crenulate median line; a fuscous postmedian line from abdominal margin, formed as on forewing, but becoming obsolescent, not traceable anteriorly to SC^2 ; a slight fuscous cloud from abdominal margin to M^1 beyond this; a shorter, fainter line close to tornus; terminal line chiefly indicated by interneural dots which do not touch the termen; fringe lighter than on forewing.

Forewing beneath mostly infuscated as far as postmedian line, the patch distally to the cell-spot and the hindmarginal region paler; cell-spot distinct; postmedian line slightly more distal than above, slightly curved anteriorly; distal band anteriorly less clear than above. *Hindwing* beneath more buff than above, with more uniform dark irroration; cell-dot and postmedian line of slightly connected dots well expressed, the latter reaching costal margin.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). Type in coll. Tring Mus.

132. *Paralcis prionophora* sp. nov.

♂, 36–37 mm. Palpus rather short, strong. Antenna rather long, ciliation not quite as long as diameter of shaft. Hindtibia not dilated. Head and body for the most part concolorous with wings, face darkened, palpus mostly blackish, abdomen with dark fuscous lateral tufts.

Forewing with fovea not strong; SC^{1-2} coincident; pinkish brown, with not very strong fuscous irroration, the principal veins somewhat more strongly dotted with fuscous; a moderate, round black cell-spot; lines blackish; antemedian consisting of three vein-spots, the first and third extended to wing-margins, the third nearer the base than the others, each accompanied proximally by a pale spot; median from considerably beyond middle, oblique outwards at first, then strongly serrate and close to the postmedian, its distal (interneural) teeth in part reaching thereto; postmedian from three-fourths costa, nearly parallel with termen, though slightly sinuous and slightly approaching it at hindmargin; consisting of pale lunules (in middle of wing mere dots), with blackish dots or longer marks edging them proximally and in part distally, small wedge-shaped vein-marks alternating with interneural dots on the proximal side; subterminal line indicated anteriorly by pure white interneural dots, the first two or three minute, accompanied by larger blackish dots proximally, the last three (between SC^5 and R^3) larger and conspicuous, accompanied by minute blackish dots distally; termen with a weak, lunulate dark line, moderate-sized dark interneural dots between the lunules consequently not quite touching the termen, which is nearly smooth; fringe feebly dark-chequered.—*Hindwing* with termen gently crenulate; slightly paler than forewing; median line continued, but farther from postmedian, nearly straight but

not very sharply defined, crossing the discocellulars and partly obliterating the cell-spot; postmedian finely crenulate, strongest on the veins, accompanied distally by a vague pale line, to which succeeds, at inner margin only, a further dark line; termen and fringe as on forewing.

Forewing beneath much clouded with smoky fuscous as far as postmedian line, most of the hindmargin, however, remaining pale; cell-spot present; ill-defined terminal dark shading, narrowing to tornus, leaving a pale band from hindmargin to near costa. Hindwing beneath browner than above; more irrorated with fuscous, markings of upperside reproduced.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). 3 ♂♂ in coll. Tring Mus.

Near *deformis* Warr. (*Nov. Zool.* xiii. 148), except that its shape is normal and that it has more markings; also shows some points of agreement with *junctilinea* Warr. (*tom. cit.* 149).

133. *Paralcis ochroneura* sp. nov.

♂, 43 mm. Face dark brown, paler beneath. Palpus blackish brown, somewhat paler beneath. Vertex blackish brown. Antennal shaft pale, with dark dots; ciliation fully as long as diameter of shaft. Thorax above blackish brown, beneath paler. Abdomen pale drab, with slightly darker lateral tufts; anal tuft rather strong. Hindtibia not dilated.

Forewing glossy pale ochreous grey, irrorated with blackish-fuscous and with shining blue-whitish, some costal strigulation and the principal veins pale ochreous; a pale antemedian line, thickly but interruptedly dark-edged distally, from costa at one-fourth, oblique outwards, strongly bent in cell, thence sinuous to beyond one-fourth hindmargin; a large, roundish dark discal spot, finely traversed by blue-whitish scales on the cross-vein; a strongly dentate dark median line shortly beyond and slightly curving round this spot; a fine pale, somewhat crenulate postmedian line before three-fourths, slightly bent at R³, accompanied proximally by slight dark shading which expands into spots at the veins; a very fine bluish-white line near termen, zigzag in its posterior half, accompanied proximally by dark spots between the veins; fringe ochreous, mixed with fuscous, a fine whitish line at its base and some vague pale spots distally.—*Hindwing* glossy grey, almost uniform, with faint traces of darker and paler lines in its discal part and one or two dark spots at abdominal margin near tornus; fringe more ochreous.

Both wings beneath glossy grey, with slight indications of darker discal spots and with the fringe mixed with pale ochreous, especially proximally; forewing in addition with costal edge slightly ochreous and with a very small pale ochreous spot at apex.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus.

134. *Paralcis intertexens* sp. nov.

♂♀, 34–36 mm. Head deep fuscous; a narrow wood-brown fillet between antennae. Antenna wood-brown, with dark spots. Collar brown. Thorax above deep fuscous, beneath more grey. Abdomen mostly grey. Hindfemur in ♂ densely tufted, in ♀ nearly glabrous; hindtibia in ♂ with hair-pencil.

Forewing with SC^{1-2} coincident; glossy umbreous, much strigulated and clouded with blackish fuscous, the largest cloudings being between the postmedian and subterminal lines from costa to R^3 and in the terminal area except at apex and in the region of R^3 ; brown on median vein, widening into a streak along and behind R^3 ; lines fine, white, mixed with brown, more or less edged with blackish fuscous; antemedian sinuous, at about one-fourth; postmedian finely crenulate, from about five-eighths costa, bent outward before R^3 , angled at R^3 , slightly bent inward behind M^2 ; accompanied proximally by an elongate white, brown-mixed (at least at costa) narrow half-band, which terminates at R^3 ; cell-spot large, roundish, blackish-fuscous, finely pale on the cross-vein; subterminal line interrupted by the streak along R^3 , strongly zigzag in posterior half; an oblique brown (sometimes whitish-mixed) line from apex, widening after crossing the subterminal, curving slightly so as to become rather less oblique; usually also an inwardly oblique line from the point where the line crosses the subterminal (R^1) to costa, where it is furcate; terminal dark lunules thick between the veins; a fine pale line at base of fringe and traces of a still finer intersecting one in middle, also of pale streaks or chequering between the veins.—*Hindwing* grey, with ill-defined darker grey cell-spot, median and postmedian lines, and subterminal shadings.

Both wings beneath glossy grey, with large darker cell-spot (strongest in ♀) and very narrow whitish half-band or patch beyond it, at least on forewing (strong and broader on both wings in ♀); a small whitish apical spot on forewing, strongest in ♀.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek). Two pairs in coll. Tring Mus.

Perhaps a local form of *fulvisecta* Warr. (*Nov. Zool.* xiii. 149), the antemedian line much less angulated.

135. *Paralcis pallidimargo gigas* subsp. nov.

♂ ♀, 39–45 mm. In addition to the considerably larger size, differs from name-typical *pallidimargo* Warr. (*Nov. Zool.* xiii. 150) in having less definite pale distal areas; that of the forewing above is more strongly dark-clouded than even in the male of the name-type (the ♀ name-type is here free from clouding), that of the hindwing above narrow, not sharply defined; similar differences are fully as, or still more, noticeable beneath.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

136. *Paralcis latimedia extrema* subsp. nov.

Forewing slightly darker than in name-typical *latimedia* Warr. (*Nov. Zool.* xiii. 150), the median area still broader (at costal margin 9 mm.), yet reaching hind-margin slightly farther from termen, on account of an inward bend of its distal edge behind SM^2 .—*Hindwing* also darker (more greyish), a discal spot well discernible.—Both wings beneath more strongly irrorated than in *latimedia latimedia* and with large dark discal spot.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus.

137. *Paralcis polycnema* sp. nov.

♂ ♀, 43–45 mm. Face light brown. Palpus fuscous on outer side, except the minute third joint. Antenna rather long, light brown, in ♂ lamellate, the fascicles of cilia sessile, a little longer than diameter of shaft. Vertex light brown. Collar and thorax above mixed with warmer brown. Abdomen again pale; not hairy beneath. Hindtibia in ♂ not dilated.

Forewing rather elongate; fovea small; SC^{1-2} coincident; very pale wood-brown, with irregular, dense, in places warm brown irroration; markings fuscous; traces of one or two interrupted dark lines near base; antemedian line from beyond one-fourth costa, here rather thick; forming a deep outward curve or blunt angle in cell, a sharp angle inwards on M, less strong curves and bends posteriorly; a large, vague, ocellated cell-mark, longer than broad; distal part of median area clouded with brown and fuscous, the clouding crossing the postmedian line in the anterior part; postmedian line strongly lunulate-dentate, the lunules pointing proximally, between the veins; from costa beyond two-thirds, slightly approaching the termen at R^1 , receding slightly after M^1 , the lunule between M^2 and SM^2 the deepest; subterminal line whitish, lunulate-dentate, thickened between SC^5 and R^1 , somewhat interrupted in posterior half, some slight accompanying cloudings except at apex; terminal interneural dark spots not very strong.—*Hindwing* with termen gently crenulate; much paler, the dusting almost wanting except towards abdominal margin; a grey discal dot; a postmedian line from abdominal margin about to R^3 , very feeble or obsolete in anterior half; its teeth and lunules much shorter than on forewing.

Both wings beneath irrorated with brown, the posterior part of forewing least so; costal region of forewing slightly infuscated; forewing with rather large, hindwing with moderate dark cell-spot; a common, finely crenulate postmedian line.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). Type in coll. Tring Mus.

The rather long antenna and wings suggest a transition to *Paradromulia*, which is scarcely a tenable genus.

138. *Paralcis dochmioscia* sp. nov.

♂, 34 mm. Head and body concolorous with wings; upper half of face and outer side of palpus deep fuscous, abdomen with dark dorsal belts anteriorly. Antennal ciliation longer than diameter of shaft.

Forewing with termen nearly smooth; SC^{1-2} coincident; buff, more or less clouded, except in the posterior part of the areas between antemedian and subterminal lines, with red-brown and with a few dark fuscous scales; discal dot pale, feebly indicated by a ring of red-brown scales encircling it; lines dark fuscous, commencing in small costal spots at one-third, one-half and two-thirds; antemedian fine, bent subcostally, then strongly oblique inward and waved; median oblique outward to R^1 but nearly obsolete, here bent, meeting the postmedian about R^3 , then gradually separating again and running, oblique and somewhat waved, to two-fifths hindmargin; postmedian oblique outward and ill-defined to behind R^1 , then strongly bent, from R^3 tolerably direct, reaching hindmargin at middle; the median line from hindmargin to the junction and the

postmedian thence to across R^2 are thickened, giving the impression that a thick oblique median shade crosses a fine line from midcosta to middle of hindmargin; a subterminal line of indistinct, separated pale lunules, the anterior ones dark-edged proximally; a slight dark costal spot between this and the postmedian and ill-defined distal dark spots before and behind R^1 ; terminal dark dots connected by very weak lunulate line.—*Hindwing* with termen crenulate; costal margin as far as postmedian line unmarked; otherwise concolorous with forewing; antemedian line basal, median nearly straight, well proximal to the cell-mark, which is as on forewing but more distinct; postmedian fine, arising at costa nearly opposite subterminal of forewing, slightly sinuate inward before R^1 and very slightly curved inward posteriorly (outward again at abdominal margin); subterminal line with the heaviest dark shading in its **posterior** half.

Both wings beneath with the markings weak and somewhat diffuse.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek).
Type in coll. Tring Mus.

139. *Paralcis aurantifascia* sp. nov.

♀, 35 mm. Head and upperside of thorax dark red-brown, mixed with black. Thorax beneath and abdomen dark slate-grey mixed with black.

Forewing in proximal half red-brown with black irroration, black spots near base indicating an interrupted subbasal line, black antemedian line at about 3 mm., thick at costa, angled outwards just behind C, curved outwards behind M and inwards in approaching SM^2 , a weaker median shade nearly parallel to the postmedian; the red-brown area bounded by the black postmedian line, which is strong throughout, very thick anteriorly, and arises from costa just **before** one-half, is oblique outwards to R^3 , but forming two very shallow concavities separated by a small outward angle at R^1 , then mainly vertical to hindmargin rather beyond two-thirds, but strongly lunulate-dentate; area between postmedian and subterminal in anterior half orange-brown, with a few black dots and strigulae on the costa and dark strigulae on the veins, in posterior half mixed with whitish and strongly dark-irrorated; subterminal line whitish, deeply lunulate-dentate, interrupted between R^3 and M^1 , accompanied proximally by blackish spots at costa and hindmargin and with the lunules more or less filled-in with blackish; terminal area orange-brown, very densely dark-irrorated except a small space in front of M^1 ; a terminal row of thick blackish strokes; fringe chequered.—*Hindwing* uniform dark slate-colour.

Underside: hindwing and proximal part of forewing dark slate-colour; forewing with a broad oblique orange band, its proximal edge nearly straight from midcosta to tornus, its distal from three-fourths costa to termen just behind R^3 ; apical area again grey, but somewhat dotted and strigulated with orange.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek).
Type in coll. Tring Mus.

140. *Eucharidema euanthes* sp. nov.

♂, 56–60 mm. Head and palpus brown-black. Thorax above mostly deeper black, with a narrow, somewhat interrupted anterior orange-brown band. Abdomen brown-black, mixed above with blue-black.

Forewing with costal margin rather straight, termen strongly oblique; orange-brown, mostly with coarse black strigulae; markings black, very numerous; some spots at base, sometimes confluent with subbasal band; subbasal band from costa at about 2 mm. to hindmargin at about 3 mm., slightly interrupted about SC, thickened posteriorly; antemedian at 5–6 mm., sinuous, thickened at costa and hindmargin; some extended black clouding, or densely confluent striation, occupying the median area from M and M² to hindmargin; opposite to this (sometimes joining it) a thick streak from beyond one-third costa; a long, slightly curved streak from costa and along DC, sometimes continued as a sinuous line to hindmargin; distally to this a narrow white, strongly pink-dusted band runs from costa, bending abruptly after crossing R³, running to termen between this vein and M¹, but throwing out a less manifest (more orange-dusted) sinuous continuation which runs narrowly to hindmargin and is marked with white on M²; a black line, thick anteriorly, distally to the pale band; some extended clouding in costal region near apex, a smaller patch at hindmargin near tornus, black spots at apex and along a great part of termen, here interrupted by the pale band; a pale line at base of fringe.—*Hindwing* black, with indications of a narrow, slightly paler postmedian band.

Underside blackish, the forewing with a very broad orange-red band from middle of costal margin almost to termen, where it extends from R³ to SM², at both extremities slightly marked with or encroached upon by the ground-colour.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

This species and the two which follow, together with *aroensis* Roths. (*Nov. Zool.* xi. 322) will—unless they prove to require a new genus—form a second section of *Eucharidema*, with the coincident SC¹⁻² arising from the cell, though close to SC³⁻⁵. In the present species the stalking of R² is generally long, but in the others only short; in the ♀ of *labyrinthodes* it even arises from DC, though close to R¹.

141. *Eucharidema labyrinthodes* sp. nov.

♂ ♀, 68–72 mm. Head and thorax black. Abdomen mixed brown-grey and blue-grey.

Forewing shaped nearly as in *euanthes*, costal margin slightly more arched; glossy black, with purple reflection, the lines light ochreous brown, the median and sometimes the distal paler anteriorly; a narrow, straight, oblique bar from costa at 5 mm. to hindmargin at 7 mm.; a broader, more oblique band from about middle of costa to R³, then more narrowly along that vein to termen and closely followed posteriorly by a second narrow bar before M¹; a narrow, slightly sinuous bar from beyond three-fourths costa, crossing the preceding one and running to three-fifths or two-thirds hindmargin; another narrow bar arising at tornus, crossing the last-mentioned and running into the midcostal bar; a sometimes isolated, sometimes confluent spot placed between the medians just distally to the last bars; fringe pale.—*Hindwing* glossy dark blue-grey, palest at costa and at an ill-defined postmedian band, becoming almost black distally to the latter.

Forewing beneath blackish, shading off to blue-grey posteriorly; an orange band much as in the preceding species, but relatively less broad and arrested before reaching the termen. Hindwing beneath blue-grey, becoming blacker at termen and broadly at apex.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

142. *Eucharidema gorgo* sp. nov.

♂ ♀, 82–84 mm. Head and body concolorous with wings. Abdomen in ♂ with very strong, mostly light brownish, trifold anal tuft.

Forewing shaped as in the preceding species; uniform purplish-black, with strong gloss; an oblique, slightly sinuous orange line from near costa at about 6 mm. to near hindmargin at about 7 mm., somewhat variable but never quite reaching the margins.—*Hindwing* glossy dark grey proximally, broadly blackish grey distally.

Both wings beneath blackish, rather lighter (more blue-grey) towards base and hindmargin; forewing with a narrow orange band distally to the cell, not reaching costa or hindmargin, in an aberration showing also as a fine line above, sometimes on the contrary reduced to a mere narrow fragment, in the only ♀ before me obsolete even beneath.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

143. *Eucharidema fractura* sp. nov.

♂, 46–47 mm. Head and body black-brown.

Forewing black-brown, crossed by a white band; this arises close to costa just beyond middle of wing, is here about 3 mm. in width, curves very slightly inwards at first, is then almost straight and somewhat widened, its distal margin suddenly curves inward behind M^2 so that its posterior extremity (beyond two-thirds hindmargin) is only about 1 mm. broad; an oblique white mark from tornus nearly to the bend of the band at M^2 ; distal fringe concolorous with wing; hindmarginal fringe tinged with yellow at the end of the band.—*Hindwing* black-brown, in some lights with very slight tinge of purple; a narrow yellow band, about 3 mm. from termen, running from R^3 to fold, tapering almost to a point at latter.

Underside almost identical, the white band of forewing tinged with yellowish from hindmargin to across fold.

Ninay Valley, Central Arfak Mountains, Dutch New Guinea, 3500 ft., February and March 1909. Type in coll. Tring Mus.

Ctimene Dup.

Ctimene Bsd., *Faune Ent. Pacif.* i. 202 (1832) (indescr.); Dup., *Dict. Univ. Hist. Nat.* iv. 445 (1844).

Bursada Walk., *List Lep. Ins.* xxxi. 187 (1864).

Abraxides Auriv., *Sv. Akad. Handl.* xix. (5) 165 (1882).

Boisduval's name of *Ctimene*, for which characterisation was first supplied by Duponchel and later by Meyrick (*Proc. Linn. Soc. New Sth. Wales* (2) i. 241), has otherwise lain dormant. I have not yet quite matched the type species, *xanthomelas* Bsd., said to be from Port Praslin, New Ireland (New Mecklenburg), though Boisduval himself mentions that this may be a mistake; but I have before me a very similar form from the Solomons and its generic position is absolutely secure,

so that Walker's well-known name must sink. It is doubtful whether the genus is taxonomically separable from the African *Terina* Walk., which is older than *Bursada* but younger than *Ctimene*.

144. *Ctimene hysginospila* sp. nov.

♂ ♀, 35–38 mm. Head and body black, the underside of the body, together with the legs, paler; an admixture of orange scales on the sides of the abdomen about the fifth and sixth segments.

Forewing with apex rather rounded; black, with a rather narrow white band beyond the cell, running about from SC^2 to M^2 in such direction that if continued it would reach termen almost at tornus; around the white band, and as a narrow band from this to costal and hindmargin, also at the extreme termen and on fringe, the ground-colour is slightly paler and greyer.—*Hindwing* black, with a narrow red patch about from radial fold to M^2 , arising rather nearer to cell than to termen; a few red scales in cell towards its end; termen and fringe as on forewing.

Underside more greyish, especially towards hindmargin of both wings; the bands reproduced; hindwing with a large red patch in cell beyond its middle, crossing M.

Mount Goliath, Central Dutch New Guinea, March 1911 (A. S. Meek). Type and others in coll. Tring Museum. Also from near Oetakwa River, Snow Mountains, up to 3500 ft., October–December, 1910, in the same collection.

145. *Bursadopsis plenifascia* sp. nov.

♂, 35–36 mm. Head and body dull black, anal tuft mostly light brownish.

Forewing dull black, with a moderately broad orange or cadmium-orange band from costal margin beyond middle to hindmargin close to tornus, its proximal edge slightly curved (slightly approaching base at costa), its distal edge perpendicular from costa about to M^1 , then gradually curving so as to avoid running to termen.—*Hindwing* black.

Underside the same.

In an aberration the hindwing shows an orange postmedian patch or short, irregular band from the radial fold to the submedian fold, touching the hinder angle of cell.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, October–December 1910 (A. S. Meek). Type in coll. Tring Mus.

Differs from the type species of *Bursadopsis* (*prae flavata* Warr., *Nov. Zool.* vi. 344), in that the stalk of SC^{1-2} arises farther down the stalk of SC^{3-5} , and that SC^2 does not anastomose with SC^{3-4} ; the hindwing is rather less fully convex, indeed from SC^5 to R^3 almost straight.

146. *Bordeta bursadoides superior* subsp. nov.

♀, 52 mm. Larger than *Bordeta bursadoides bursadoides* Warr. (*Nov. Zool.* xvi. 127), band of forewing broader (4 mm.), reaching nearly (on underside quite) to M^2 . Abdomen intermediate between the type and ab. *uniannulata* (loc. cit.), the belts, with the exception of the first, being rather narrow, but not reduced to threads.

Near Oetakwa River, Snow Mountains, Dutch New Guinea, October—December 1910 (A. S. Meek). Type in coll. Tring Mus.

This species is not a true *Bordeta* in so far as that genus is characterised by sexual dimorphism in shape (cfr. Rothschild, *Nov. Zool.* ii. 418), but I am not at present able to undertake a generic revision.

147. *Craspedosis aurigutta longigutta* subsp. nov.

Differs from *aurigutta aurigutta* Warr. (*Nov. Zool.* ix. 366) in having the orange band longer in proportion to its width, in the type specimen almost three times as long as wide; in both forms it is somewhat variable, but when broadened in the form *longigutta* it is also lengthened, crossing the submedian fold, which is never the case in the form *aurigutta*. Moreover, in the new race the distance between the band and the termen at the fold is less than half that between band and base, in *aurigutta aurigutta* more than half.

Ninay Valley, Dutch New Guinea, February and March 1909. Type in coll. Tring Mus.

148. *Craspedosis andromeda* sp. nov.

♂ ♀, 43–50 mm. Head and body dull olive-grey, with the upperside of thorax and of first abdominal segment plumbeous.

Forewing plumbeous; a pale buff band from SC in middle of wing-length almost to hindmargin close to tornus, 4 or 5 mm. wide through most of its course, sometimes tapering posteriorly.—*Hindwing* uniform plumbeous.

Underside the same.

Ninay Valley, Dutch New Guinea, February and March 1909. Type in coll. Tring Mus.

Related to *semilugens* Warr. (*Nov. Zool.* iii. 399), in which the band is white, differently shaped, the hindwing less unicolorous.

149. *Craspedosis flavithorax* sp. nov.

♂ ♀, 50–55 mm. Very similar to *leucosticta* Warr. (*Nov. Zool.* iii. 398) and *aruensis* Pagenst. (*J. B. Nass. Ver. Nat.* xxxix. 164), but differing from all the forms of those species in having the thorax above largely yellow; abdomen yellow, with some black dorsal belts, sometimes confined to the anterior segments, in the ♀ almost obsolete.

Wings with the white spots broad but not very long, on forewing not, on hindwing not greatly extending anteriorly to R^1 ; that of the hindwing in the ♂ is narrowly black-edged at the abdominal margin, inner-marginal fringe yellow; forewing also with some yellow scales at base of hindmargin and a white spot on fovea; outer line weaker than in *aruensis*, about as in *leucosticta*.

Dutch New Guinea: near Oetakwa River, October–December 1910, 3 ♂♂ (including type); Ellanden River, December 1910 (A. S. Meek). In coll. Tring Mus.

150. *Craspedosis casta triangularis* subsp. nov.

♂ ♀, 47–50 mm. Rather larger (in the ♀) than *casta casta* Warr. (*Nov. Zool.* x. 387), base black to 3 mm. on hindmargin, the black colour then running out

very obliquely, meeting the broad apical patch at apex of cell, so that a much reduced white area remains, roughly triangular in form. Border of hindwing broader than in name-typical *casta* and separated by a grey shade from the white ground. The ♂ has a small black anal tuft.

Mount Goliath, Dutch Central New Guinea, 5000-7000 ft., March 1911 (A. S. Meek). Type in coll. Tring Mus.

151. *Craspedosis cyanauges* sp. nov.

♂, 33 mm.; ♀, 40 mm. Head, body and legs black, the body above with dark blue reflections.

Wings black, with dark blue reflections.

Forewing with an oblique white band from SC to across M^2 , about 2 mm. in breadth, its anterior end slightly rounded, its sides otherwise scarcely convex, the discocellulars midway between them, its posterior end slightly narrowed, a small projection crossing M^2 and reaching to the fold; if continued, this band would reach the hindmargin close to tornus.—*Hindwing* unicolorous.

Under-surface the same.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). Type and a ♀ in coll. Tring Mus. Also a short series from Angabunga River, British New Guinea, misidentified by Warren as *laticlava* Warr. (*Nov. Zool.* x. 387), which is much larger, duller, the band longer, etc.

Related to *miranda* Warr. (*Nov. Zool.* xiv. 170) and *purpurea* Warr. (*loc. cit.*), but smaller (especially the ♂) and with the band shorter, narrower, and less rounded distally than in the former, much broader than in the latter, which, moreover (in spite of its name), has the reflections brighter, of a purer, less purplish blue.

152. *Mniocera cinerescens niphospila* subsp. nov.

Differs from name-typical *cinerescens* Butl. (*Proc. Zool. Soc. Lond.* 1879, p. 162), from New Ireland, in that the hindwing, as well as the forewing, shows a white postmedian spot; this is occasionally more restricted than on forewing, scarcely crossing R^3 anteriorly, but is always conspicuous.

Rook Island, August 1913 (A. S. Meek). Both sexes in coll. Tring Mus.

I have before me an example of *cinerescens cinerescens* from "New Britain" (Neupommern), without more exact locality, and it is not impossible that the Rook Island form may be found to occur there as an aberration. I strongly suspect that *Craspedosis niverupta* Bastelb. (*Berl. Ent. Zeit.* lii. 60) is a synonym (or perhaps ab.) of *cinerescens cinerescens*, though I cannot understand the "ochre-yellow" hindmargin of forewing or the yellowish spot on the antenna.

153. *Arycanda orthostela* sp. nov.

♂, 41 mm. Head and thorax blackish, with a slight olivaceous tinge; thorax above with an admixture of shiny blue-grey scales. First three segments of abdomen coloured nearly as thorax, the rest bright orange.

Forewing shining blue-grey, along costal edge more brown-grey; markings

blackish, with slight olivaceous tinge; some spots or dashes close to base; a narrow, outwardly oblique band from fovea to cell, here acutely angulated, slightly interrupted on SC; two broader, nearly straight bands, one proximally, the other distally to the large black discal dot; a broad submarginal band, shading off gradually to termen; fringe dark brown-grey.—*Hindwing* with the three broad bands reproduced, the first removed farther from the cell-spot; in addition with a fine straight subbasal line and a very fine, somewhat interrupted median line crossing the cell-spot.

Both wings beneath dark blue-grey, with rather weak darker cell-spot and with extremely shadowy traces of the antemedian and postmedian bands.

Rook Island, July 1913 (A. S. Meek). Type in coll. Tring Mus. Two, rather larger, from New Britain, in the same collection.

154. *Arycanda vinaceostrigata* sp. nov.

♂, 61–65 mm.; ♀, 69–71 mm. Head and thorax blackish slate-colour; abdomen orange-rufous, anteriorly with black dorsal spots.

Forewing slate-colour or slightly leaden, with fine black strigulation, a large black cell-spot and a number of interrupted black transverse lines or narrow bands (about nine), those at the base much broken up into spots, the next pair almost confluent at costa, diverging, the next short, thick, anterior to the cell-spot, three distally to the cell-spot, also thick, somewhat sinuous; the subterminal much broken into large spots, containing four orange-red dots or smaller spots, two being between the radials, one between the medians, and one (elongate and oblique) near tornus; terminal line almost interrupted at the veins, thick between; a broad, deep vinaceous longitudinal streak runs from the cell-spot along the radials to the subterminal, another from near base along the fold to the red subternal spot, a short one from the subterminal to termen between R^3 and M^1 , and a broad branch from the fold-streak near the base runs off to hindmargin and is continued to hindmargin of hindwing; fringe bisected by a thick blackish line.—*Hindwing* with equally large black cell-spot; a black band proximally thereto, not reaching costa, bounding the pink band distally; distally to the cell-spot two sinuous black bands, more or less broken up into spots; subterminal nearly as on forewing.

Underside uniform slate-colour, with large black cell-spots.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., February 1911 (A. S. Meek). 4 ♂♂, 6 ♀♀ in coll. Tring Mus.

155. *Arycanda xanthogramma* sp. nov.

♂, 40–45 mm.; ♀, 49 mm. Palpus short. Head, body and legs concolorous with wings, end of anal tuft paler.

Forewing dark purple-grey, with blackish specklings and strigulations; a brownish tinge in the region of the folds; markings blackish, consisting of rows of spots, largest at the costa, in part connected by some dark shading; two antemedian, well apart at costa, nearer posteriorly, somewhat bent in cell; obscure spots between them at the folds; a less markedly spotted median, distally to the cell-mark, angled at the radial fold; two postmedian, weakly angled at R^1 , then parallel with termen, only the proximal of them marked by conspicuous dark costal

spot; a slightly pale, dentate line suggested between them; subterminal not very conspicuous, consisting of slightly pale lunules, interrupted by the veins and accompanied proximally and distally by blackish spots; termen with thick black lunules; cell-mark placed in a blackish spot, bright fulvous, somewhat angled at the origin of R^2 and slightly extended along that vein, in some examples suggesting an irregular, inverted Greek gamma.—*Hindwing* similar, without the antemedian lines or enlarged costal spots, cell-spot nearly without the fulvous mark.

Underside almost uniform dark slate-colour, with slightly darker cell-spots.

Mount Goliath, Central Dutch New Guinea, January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

Rather near *fulviradiata* Warr. (*Nov. Zool.* xiii. 138) and *brunneotacta* Warr. (xiv. 168).

156. *Arycanda leugalea* sp. nov.

♀, 48 mm. Head and body grey, tinged, especially on underside, with brownish.

Forewing slaty grey, for the most part irrorated or strigulated with darker, more brownish grey; costal margin (except near base) and the spaces between each pair of dark markings clearer grey; some slight dark maculation near base; antemedian line double, curved, slightly sinuous, the proximal element broken into rather large interneural spots, the distal slightly thickened on the veins; cell-mark elongate, slightly broken, narrowly pale on the cross-vein itself; median line single, from costa just before middle, slightly oblique outwards, strongly curving round between radials, thence strongly oblique inwards, touching the posterior extremity of cell and reaching hindmargin at one-third; postmedian double, dentate, bent at R^1 , slightly incurved at fold, distal element expanded into rather large spots; subterminal line somewhat lunulate-dentate, accompanied proximally and distally by dark interneural spots, after crossing M^2 straight and oblique to tornus; terminal line interrupted at the veins, rather thickened between; a slender pale line at base of fringe.—*Hindwing* with median line well proximal to cell-mark, obsolete anteriorly to SC; cell-mark and all beyond it as on forewing.

Underside grey, broadly but very vaguely darker distally; cell-spots present, not very strong.

Mount Goliath, Central Dutch New Guinea, January 1911 (A. S. Meek). Type in coll. Tring Mus.

None of the markings are very sharp. At first sight suggests a poorly-coloured form of the preceding.

157. *Stenocharta multiplaga* sp. nov.

♂ ♀, 39–40 mm. Face white. Palpus blackish, first joint and proximal two-thirds of second joint narrowly yellow beneath. Vertex and occiput blackish, with a slight paler admixture. Thorax and abdomen black above, white beneath; a yellowish spot on tegula.

Forewing brown-black, with a white spot in cell about 3 mm. from base, a white discal patch as in *quadriplaga* Walk. (*List Lep. Ins.* xxxi. 207) and an oval white submarginal spot between R^1 and the fold behind R^2 ; in one example

this spot is prolonged nearly to the termen, and there is an additional (but smaller) white subapical spot; fringe concolorous.—*Hindwing* as in *quadriplaga oviplaga* Rothsch. (*Lep. Brit. Ornith. Un. Exped. New Guinea*, p. 90).

Forewing beneath with the subbasal white spot triangular, extended nearly to base; discal spot as above; both the subterminal spots present in all examples, and in addition a narrower one from M^1 to the fold, sometimes less pure behind M^2 . Hindwing beneath with a white patch at the base; discal patch as above; two or three submarginal spots approximately corresponding to those of the forewing but narrower.

Ellanden River, S.E. Dutch New Guinea, December 1910 (A. S. Meek). Type and others in coll. Tring Mus. Also from near Oetakwa River, October—December 1910, both sexes.

The structural characters show only extremely slight differences from those of *quadriplaga*. ♂ antenna rather less thickened before and rather less pointed at apex; abdomen not quite so long and slender; hindwing with anal angle not quite so completely rounded off.

158. *Abraxas copha* sp. nov.

♀, 44 mm. Face light orange. Palpus with first joint light orange, the rest mostly blackish. Vertex blackish. Occiput, collar and front of thorax marked with light orange. Abdomen mostly dark above; on sides and beneath spotted and banded with light orange.

Forewing dull blackish; at base of costa with an orange dot; a few white dots in proximal area; an extended white median area, nearly 5 mm. wide at hindmargin (before middle), narrowing, ending at SC half as wide; its proximal edge slightly concave, its distal slightly convex and tending to project slightly at the veins; a submarginal row of irregular white spots, the first large (from SC^5 to R^2), proximally indented on R^1 , the second wedge-shaped (between R^3 and M^1), the third rounder (between M^1 and M^2), the last two small.—*Hindwing* with a small blackish proximal area, the white median band of forewing continued, broad, narrowing somewhat at extremities, not quite reaching costa; distal half blackish, with a submarginal row of white spots, the first (between C and SC^2) and the last (between M^2 and abdominal margin) mere dashes, the other four moderately large.

Underside almost identical.

Fak-Fak, Dutch New Guinea, 1700 ft., December 1907 (A. E. Pratt). Type in coll. L. B. Prout.

Closely related to *punctifera* Walk. (*List Lep. Ins.* xxxi. 202), apex of forewing somewhat more rounded, white band differently shaped, not followed distally by a subcostal white spot.

159. *Paralcidia subvinosa* sp. nov.

♂ ♀, 31–33 mm. Face and palpus light ochreous brown, with a slight vinous tinge, the face with a few dark fuscous scales on upper part, palpus with first and second joints fuscous-mixed on outer side. Vertex and thorax dark fuscous, the latter with a pale, vinous-tinged stripe down centre. Abdomen and legs of the pale colour, a good deal mottled with fuscous. Hindtibia in ♂ very strongly dilated, with dark fuscous hair-pencil.

Forewing as far as the postmedian line mostly glossy dark fuscous, the pale markings with a slight vinous tinge; these consist of: some short costal strigulae, sometimes more extended over the anterior area; a streak from base along M, somewhat diffused anteriorly into cell, continued along R³ and M¹, with more or less irroration between these veins; a strongly zigzag line from before middle of costa, thick and oblique outwards at first, then very strongly bent and running close in front of the median stripe, which it crosses at origin of M², thick and nearly vertical to just behind fold, excessively fine inward (or obsolete) to SM² at 3 mm. from base, finally thick and forming an oblique curve to about one-fourth hindmargin; postmedian line of the same colour, fine, from costa midway between median line and apex, equally oblique outwards to R¹, then parallel with termen, crenulate and slightly sinuous, more strongly sinuate inwards at fold, very oblique inwards from SM² to hindmargin; distal area white, strongly dusted (except in part at termen) with brown and fuscous, the veins vinous tinged, a triangular fuscous spot at costa close to apex, a small one between R³ and M¹ and an elongate one from M² to tornus; terminal line fine, swollen into spots between the veins; fringe vinous-tinged proximally, more whitish distally, cut throughout by large, subtriangular dark spots opposite the veins.—*Hindwing* glossy, very pale greyish, with faintly darker cell-mark and postmedian line; ground-colour beyond the latter slightly whiter; fringe vinous-tinged.

Forewing beneath much more feebly marked, the dark subapical triangle rather strong; fringe nearly as above. Hindwing beneath densely dark-dusted as far as the thick, dentate postmedian line; cell-spot strong; distal area pale, but with dark terminal line, interrupted by the veins, strongly thickened between.

Mount Goliath, Central Dutch New Guinea, about 139° E. longitude, 5000–7000 ft., January and February 1911 (A. S. Meek). Type in coll. Tring Mus.

In some respects intermediate between *errabunda* Warr. (*Nov. Zool.* xiii. 145) and *rufivenata* Warr. (*ibid.* 146), larger and relatively somewhat longer-winged than either, with paler hindwing, etc.

Asthenophleps gen. nov.

Face sloping, somewhat rough-scaled below. Palpus with second joint shortly rough-scaled, upturned in front of face, third joint smooth, rather elongate. Tongue present. Antenna in ♂ nearly simple, closely lamellate. Pectus somewhat hairy. Femora glabrous. Hindtibia in ♂ dilated, all spurs developed. Abdomen in ♂ rather elongate, anal tuft strong. Forewing with costa arched, termen rather prominent at R³, more oblique behind, very faintly sinuous; cell well over one-half, DC¹ strongly oblique, DC²⁻³ incurved, becoming oblique; C well free, SC¹⁻² stalked, SC³⁻⁵ normal, R² weak, M¹ separate. Hindwing with costal margin strongly arched posteriorly, apex weak, termen bent at R¹, thence slightly sinuous; cell slightly over one-half, DC curved; C approximated to SC to almost one-half cell, rapidly diverging, SC² just separate, R² wanting, M¹ separate.

Type of the genus: *Asthenophleps strigulata* sp. nov.

Akin to *Phrudophleps* Warr. (*Nov. Zool.* x. 413), termen not crenulate, R² of forewing not altogether wanting, C of hindwing approximated to the cell for a longer distance, etc.

160. *Asthenophleps strigulata* sp. nov.

♂, 27 mm. Head and body light brown, slightly variegated with warmer shades.

Forewing glossy light brown, with cream-coloured transverse strigulation, which tends to become grey-white in places, especially along the veins; a white spot in cell towards its end, accompanied proximally by a faint fuscous one; a lunulate white spot in submedian area, slightly more proximal, accompanied proximally by a distinct fuscous spot; a sinuous white postmedian line from before three-fourths costa, thick in places anteriorly and posteriorly, strongly excurved and very slender about R^3-M^1 , slightly edged here and there with fuscous; a fuscous streak between R^1 and R^3 , from postmedian to near termen, a patch between M^2 and SM^2 , and (more slightly) between medians; two white spots, rather obliquely placed, from close to apex; a row of irregular admarginal white spots, that behind M^2 elongate so as to reach SM^2 ; some very weak dark terminal dots; fringe very weakly darkened at vein-ends.—*Hindwing* glossy, violet-grey, becoming slightly more brown distally; fringe concolorous with forewing.

Both wings beneath with the ground-colour warmer brown, the forewing in cell and posteriorly largely obscured with dark violet-grey shading, the hindwing from base to beyond middle with still darker shading; both wings with small dark cell-spot and irregular dark, partly distally white-edged postmedian line; forewing with this white edging expanded into spots before and behind R^1 , and with the white subapical spots of upperside reproduced; hindwing with a slight oblique dark shade from tornus.

Mount Goliath, Central Dutch New Guinea, February 1911 (A. S. Meek). Type in coll. Tring Mus.

NOTES ON PIGEONS.

BY ERNST HARTERT, PH.D.

IN 1910, when I had finished Volume I. of my work on the birds of the palae-arctic fauna, an eminent ornithologist—now deceased—said to me that since I had overcome the difficulties with Titmice, Warblers and others, and concluded the *Passeres*, the end of my task would be near, and the second volume would be more or less playwork. I replied at once that I could not agree with him, as I had before me the Woodpeckers, Owls, Eagles, Geese, game birds, and other difficult groups; but I had hardly imagined that almost every larger family would be as difficult as most of those of the *Passeres*. This, however, seems to be the case, especially as many of the larger birds, being bulky and tiresome to skin, are shunned by many collectors, and therefore very often the series in collections are small and insufficient, and not to be compared with those of the smaller birds. On the other hand the difficulties connected with their study mostly increase the interest in those groups.

Among others the Pigeons are by no means an easy order, and exceedingly interesting.

I. ON SOME TURTLE-DOVES.

Among the Turtle-Doves—now *Streptopelia*, formerly *Turtur*—there is first of all a difficulty about the name "*risoria*." Linné, *Syst. Nat.*, Ed. x., i. p. 165 (1758), gave it to a bird of which he said: "*Habitat* in India, *nobis communis Turtur*." On the strength of this "*Habitat*" the name has been frequently applied to a wild Indian species, the *Turtur douraca* of the *Cat. B. Brit. Mus.* xxi. p. 430. Before Salvadori and most of his followers, Schlegel, Blyth, Stejneger, and a few others had already, more or less with reasons fully stated, refused to adopt the name *risoria* for the Indian Ring-Dove.

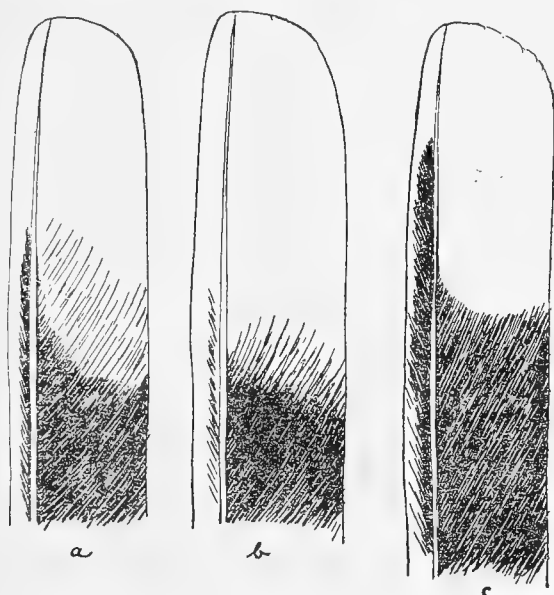
Unfortunately my friend E. C. Stuart Baker, in his splendid book on the *Indian Pigeons and Doves* (1913), p. 219, has again reverted to the name *risoria* for the Indian Ring-Dove. In the Preface to his book, p. vii, the author most laudably declares that he takes his names "according to strict priority and with effect from the date of the tenth edition of Linnaeus." On p. 219, however, he quotes, "*Columba risoria* Linn., *Syst. Nat.*, i. p. 285 (1766)"! He then says that the authors quoted by Linnaeus give India as the country whence their Dove came—mentioning also Brisson, who is not quoted in Ed. x., and whose work was not published in 1758—and winds up: "There cannot, therefore, be the slightest doubt that Linnaeus meant the name *risoria* to be applied to the wild Dove which had the headquarters of its habitat in India."

Unfortunately Mr. Baker's conclusions are incorrect. Linné (1758) quoted Aldrovandus, Willughby, Ray, and Albin, vol. iii., p. 42, pl. 45. Aldrovandus had two figures, one (p. 509) of the European *Streptopelia turtur*, the other (p. 510) of a "Ring-dove" which he calls a "*Turtur Indicus*." Of the latter he says in the description (p. 508) that the female is white with the exception of the red feet and blackish bill, while the male has the upperside rufescent. In the chapter on the distribution Aldrovandus says that the Turtledove occurs in the Orient, in Africa

(in enormous cloud-like masses), in the country of the Tartars, in Germany and in England. No exact statement is ventured of the occurrence in India, and from the description we can only suppose that it was taken from a cage-bird of the tame race, while the figure might be either the tame or wild Indian or one of two or three African species. Willughby quoted from Aldrovandus, merely adding that he saw these Indian Doves in the King's aviary in Westminster. Ray merely quoted Aldrovandus.

Then comes Albin, who described "The Turtle-Dove from India," and figured on pl. 45 very clearly the tame domestic form, and who says nothing about its habitat but "They are tame pretty birds, and kept in cages by the curious, in which they will breed and bring up their young."

It is thus evident that all previous writers quoted by Linnaeus were merely



a. *Streptopelia roseogrisea*
 b. Tame *S. risoria*
 c. *S. decaoto decaoto*.

acquainted with the domestic race, of which they **supposed** that it had come from India.

For the following reasons the Indian species cannot be the ancestor of the tame Dove:

(1) The markings on the outer tail-feathers are different. In the Indian wild bird the outer web of the outer tail-feather is grey at least one centimetre beyond the slate-grey basal portion of the inner web; in the tame race in Europe the white of the distal portion of the outer web extends as far as or farther than the white on the inner web (see figures). In these markings the tame race agrees with *Streptopelia roseogrisea* of N.E. Africa.

(2) The tame Dove is smaller than "*S. douraca*," agreeing in size better with *S. roseogrisea*. Domesticated races are—as a rule—larger than wild ones, as for example canary-birds, ducks, geese, and others. The tail is also longer in the Indian Ring-Dove!

(3) The note of the tame Dove is a curious laughing one, that of the Indian wild bird quite different (see Baker, *Indian Pigeons and Doves*, p. 224, and other places). *S. roseogrisea*, on the other hand, has the same call as that of our domestic race.

The latter is either cinnamon buff on the upperside or more or less entirely white; therefore not much can be learnt from its colour, but it would seem remarkable that no trace of the grey under tail-coverts is ever noticed in the domestic race, these coverts being grey in the Indian, white in the African species.

We must therefore conclude that the Indian species cannot be the ancestor of the tame Dove, while in all probability *S. roseogrisea* is the species from which our domestic birds have come.

It is important to clearly understand this, because Mr. Baker's book must be widely spread and his nomenclature may therefore mislead many ornithologists. Before Mr. Baker the late Professor E. Oustalet dissented from Count Salvadori's correct view in a lengthy article entitled "Recherches sur l'origine de la Tourterelle à collier," in the Proceedings of the Third Ornithological Congress (Paris 1900), *Ornis* xi. pp. 259-66. But Oustalet's articles have been curiously neglected in this country, and the *Ornis* is by no means in every ornithologist's library. For the reasons explained above, I cannot agree with Oustalet, who brings no proof of his theory. Some of his conclusions are hypothetically based on a mounted specimen in the Paris Museum, the locality of which is uncertain, and which, therefore, cannot enlighten us in any way.

The name of the Indian Ring-Dove can therefore not be *risoria*; but, unfortunately, neither can it be *douraca*, because Frivaldsky in *A. M. Társaság Évkönyvei* (Hungarian Academy writings), 1834-36, iii. kötet (3rd vol.), osztály 3 (3rd part), pp. 183, 184, pl. viii, published 1838, described the wild Ring-Dove from Turkey as *Columba risoria* var. *decaocto*. Moreover *douraca* of 1844 is a nomen nudum!

A. E. Brehm, in the *Thierleben*, among others, described *S. roseogrisea* as the ancestor of the tame Ring-Dove, but he seems partially to have mixed it up with the Asiatic species.

I am sorry to say that I must disagree with my friend Baker in another case of nomenclature, for he curiously misapplied the name *meena*. He called the "Indian Rufous Turtle-Dove" *Streptopelia turtur meena*. He quite correctly separated it from *orientalis*, with which so great an ornithologist as Salvadori had united it in the *Cat. B. Brit. Mus.* xxi. p. 403.

The case of the name *meena* is as follows: In the *Proceedings of the Committee of the Zool. Soc. London*, ii. p. 149 (1832), Sykes described under the name *Columba meena* the male of the Dove with white under tail-coverts, which breeds in Central Asia and visits India in the winter; to this he added the description of a bird which he thought was the female of his *meena*, and which had the under tail-coverts grey; unfortunately this supposed female of his *meena* was not the same, but belonged to a very different race. The name *meena* cannot be suppressed, but must be used for the bird which ten years later was named *ferrago* by Eversmann, a name under which it is found in the *Catalogue of Birds*. It is against any rules, and there is no reason whatever why it should be adopted for the supposed female of the white-vented race, and the Indian grey-vented bird must be called *agricola*.

Mr. Baker has very sensibly made use in his book of the "trinomial system."

As far as the Pigeons are concerned, this was new for the Indian fauna. On the whole, Mr. Baker's attempt has been very successful, but I cannot agree with all his conclusions. He treated *orientalis*, *agricola* (under the name of *meena*), and *meena* (under the name of *ferrago*) as subspecies of *Streptopelia turtur*. It is tempting to do this, but I do not believe that it can be accepted, because in wide areas in Turkestan and Afghanistan both *S. turtur arenicola* and *S. orientalis meena* (= *ferrago*) appear to nest. Moreover it appears that the call-notes of the *turtur* and *orientalis* groups differ considerably, the latter having a "cooing" call, the former the well-known "turr-turr."

On the other hand I am certainly of opinion that *S. cambayensis* should be looked upon as a subspecies of *S. senegalensis*. As everybody knows, *cambayensis* has the upperside earthy brown, and *senegalensis* has it, to use the words of the key on page 448, *Cat. B. Brit. Mus.* xxi., "more or less reddish." This "more or less" shows already that it is not always so very red, and in fact females and young are sometimes so little reddish that they come very close to *cambayensis*. The *Cat. B.* adds also "rump bluish-lead colour" in *senegalensis*, never bluish in *cambayensis*. This, however, is not entirely correct, because some African subspecies of *senegalensis* do not have the rump bluish—i.e. *aegyptiacus* and the N.W. African form. That *cambayensis* is not so frightfully different from typical *senegalensis* is suggested by the following facts :

As late as 1876, Dresser, in his immortal work *The Birds of Europe*, vol. vii., united both forms, though in the Supplement, vol. ix., he separated them. But even there he had not quite grasped their distinguishing features. On page 306 Mr. Dresser says : "Count Salvadori does not include *T. senegalensis*, but only *T. cambayensis*, as found in Turkey; but there is no doubt that both species occur there, as I have a specimen obtained by Mr. Pearse at Turballi which, though not quite adult, has the rump as blue as in typical *senegalensis*. I am, however, afraid that I must blame myself for this omission on the part of Count Salvadori, as I am not sure that he saw the specimen in question."

The authorities of the Manchester Museum were kind enough to send me the specimens from the Dresser Collection, for which I am much obliged to Dr. Tattersall. I find that there is an adult female and two young, all shot on May 15, and probably one family! All three belong to the same race, and have not much to do with *cambayensis*, but belong to the Algerian race of *senegalensis*! The young ♂ with more blue on the rump was called by Mr. Dresser *Turtur senegalensis*, the female with a less bluish rump *cambayensis*, the adult female also *cambayensis*. These specimens have, according to Mr. Dresser, been examined by Count Salvadori, and called *cambayensis*, which is difficult to believe, as he knows these birds perfectly well. I can only imagine that his notes became mixed, because there is also enumerated on page 453, as from Aintab in Asia Minor, a specimen (the first of the list) of *cambayensis*. This example was shot on February 10, 1879, near Aintab, but it is a typical *senegalensis* and could not possibly be mistaken for *cambayensis*; not even by a casual observer, and never by an eminent ornithologist. That the mistakes became printed is unfortunate, as the distribution as given in the *Cat. B.* and in Dresser's *Manual* was consequently quite wrong. As late as 1886, however, Sharpe mistook a *cambayensis* from Muscat (E. Arabia) for *senegalensis*, and the same error occurs in his *Aves* of the Second Yarkand Mission. The distribution of the various races of *Streptopelia senegalensis*, as far as I can work it out at present, is as follows :

1. *Streptopelia senegalensis senegalensis* (L.)

Columba senegalensis Linnaeus, *Syst. Nat.*, Ed. xii. 1, p. 283 (1766—Senegal, ex Brisson).

Columba maculicollis, Wagler, *Syst. Av.*, Columba No. 97 (1827—New name for *C. senegalensis*—partim, comprising not only *aegyptiaca* auct., but also, though doubtfully, *cambayensis*).

Turtur senegalensis aequatorialis Erlanger, *Journ. f. Orn.* 1905, pp. 116, 117, pl. v. (lower figure).

Characteristics of this race: Smaller than other African forms, wing ♂ ♀ 134–146 mm., rump and upper tail-coverts bluish grey; underside pinky vinous, tips of split jugular feathers more brownish, contrasting with throat and breast. Edges to inner wing-coverts and scapulars rather reddish.

Tropical Africa, from Senegambia to Nubia, Arabia, Palestine and south-eastern Asia Minor (Ain-Tab, south of the Taurus, west of Birejik), Danford coll.

2. *Streptopelia senegalensis sokotrae* C. Grant

Streptopelia senegalensis sokotrae Claude Grant, *Bull. B. O. Club*, xxxv. p. 19 (1914—Sokotra. Type in British Museum).

Strikingly smaller than *S. s. senegalensis*, otherwise not different, though generally lighter in colour, especially on head and breast. Wings, ♂ 123–133, ♀ 123–127 mm.

Island of Sokotra.

3. *Streptopelia senegalensis phoenicophila* subsp. nov.

Larger than *S. s. senegalensis*: wing, ♂ 145–152, ♀ 139–149 mm.; rump and upper tail-coverts bluish grey with brownish tips to the feathers, edges to inner upper wing-coverts, and scapulars more brownish, less reddish; underside less pinkish, more brownish vinous; less strongly contrasting from the tips to the split jugular feathers.

Date-palm groves south of the Atlas in Algeria, Tunisia, and Morocco, though from the latter country information is scarce and vague. Probably also parts of Tripolitania.—In Algeria from Berryan, Ghardaïa, Guerrara, Biskra to Metlili and Onargla, but absent from El-Golea and In-Salah and farther south.

The Palm-Dove from Africa Minor used to be lumped—like *aegyptiaca*—with *S. s. senegalensis*. Not very many years ago the late Carlo von Erlanger first noticed the differences. He, however, united it with *aegyptiaca*, which he revived—many years before Cabanis had already called attention to it. This course was followed by Zedlitz and by Lord Rothschild and myself, but since I have compared a series from Egypt with one from Algeria and Tunisia, it became evident that these forms cannot be united.

The specimens in the Dresser Collection (unfortunately no adult male!) from Constantinople seem to be indistinguishable from those from Africa Minor, and they must undoubtedly have been introduced, probably from Tunis or Tripoli.

4. *Streptopelia senegalensis aegyptiaca* (Lath.)

Columba testaceo-incarnata Forskål, *Descr. An.* p. 5 (1775—Egypt.—Forskål's work *Descr. Animalium*, etc., was not binomial, names can therefore not be accepted from that work dated 1775).

Columba aegyptiaca Latham, *Ind. Orn.* ii. p. 607 (1790—Egypt, ex Forskål 1775).

Peristera rufescens Brehm, *Vogelfang*, p. 257 (1855—Egypt); id., *Tauben*, p. 54.

Turtur pygmaeus Brehm, *Tauben*, p. 56 (1857—Egypt).

Larger than *S. s. senegalensis*, of about the same size as *S. s. phoenicophila*, but head and nape uniformly deeper vinous, upper back, scapulars and inner upper wing-coverts much more rufous than in *phoenicophila*, almost uniform bright

cinnamon-rufous. Rump brown! Wings, ♂ 145–148, sometimes 150–151, ♀ 136–145 mm.

Nile valley south to Wadi Halfa. All specimens I have seen from south of Wadi Halfa were typical *senegalensis*, though some from Kerman in Nubia (Hon. N. C. Rothschild coll.) and the Atbara were very pale. It would be interesting to compare larger series from these districts.

5. *Streptopelia senegalensis cambayensis* (Gm.)

Columba cambayensis Gmelin, *Syst. Nat.* i. 2, p. 779 (1789—"Habitat in Cambaja," i.e. on the Bay of Cambay, North of Bombay. Ex Sonnerat and Latham).

Differs from all the forms of *S. senegalensis* in the uniform dull earth-brown upperside. Wing, ♂ 125–132, ♀ 121–129 mm.

Tropical India from the foot of the Himalaya to the Malabar coast, where it is rare, to the east to the rivers Hoogli and Ganges (Baker). It is a mistake to suppose that this form or *ermanni* extends to Asia Minor or Constantinople!

6. *Streptopelia senegalensis ermanni* (Bp.)

Turtur ermanni Bonaparte, *Compt. Rend. Acad. Paris* 43, p. 942 (1856—Bokhara. Types in Berlin Museum. There is no doubt as to the form which Bonaparte described, though his description is partially misleading, as he evidently had specimens of *senegalensis*, which he called *cambayensis*, for comparison).

Exactly like *S. s. cambayensis*, but larger: wings, ♂ 135–145, ♀ 134–140 mm.

This very closely allied form is not always separable, if only single specimens—especially of doubtful sex—are compared. It inhabits parts of Turkestan (Bokhara), parts of Persia, Baluchistan and Afghanistan, and Muscat in S.E. Arabia.

There has been some uncertainty about the Yunnan form of *Streptopelia chinensis*. Mr. Ingram called it *Turtur chinensis*, but said: "These (i.e. a pair from 'Mongtse') agree with *T. chinensis* fairly well, but have indications of dark median streaks on the upper wing-coverts, and in one example the under tail-coverts are almost white; in fact, they appear intermediate between *T. chinensis* and *tigrinus*." Anderson identified specimens from Western Yunnan with *T. tigrinus*, and also Bangs and Phillips called examples from Mengtze ("Mongtse") *Spilopelia tigrina*, though also adding that they were "more or less intermediate between *tigrina* and *chinensis*."

Comparing the Yunnan specimens I was astonished to find what an excellent form, truly intermediate between *S. c. chinensis* and *tigrina*, they are; they cannot be united with either of the two nearest forms. The upper wing-coverts have dull black shaft-lines as in *tigrina*, but narrower; the edge of the wing is darker than in *tigrina*, as in *chinensis*. The under tail-coverts vary from buffy greyish-white to grey, with more or less distinct buffy tips. I propose to name this well-marked subspecies

Streptopelia chinensis vacillans, subsp. nov.

Type ♂ ad., Mengtze, Yunnan, 30. vi. 1910. No. 249, collected by Mr. Alan Owston's Japanese collectors. In the Tring Museum.

References are:

Turtur tigrina Anderson, *Western Yunnan Exp.* p. 665 (1878).

Turtur chinensis Ingram, *Nov. Zool.* 1912, p. 272.

Spilopelia tigrina Bangs & Phillips, *Bull. Mus. Comp. Zool. Harvard Coll.*, Cambridge, Mass., lviii. p. 270.

II. ON *COLUMBA LIVIA* AND ITS FORMS

While there has been much divergency of opinions about the ancestors of the tame Ring-Dove, there has been none about that of our domestic Pigeon, since the Rock-Pigeon (Rock-Dove) has become known. It is true that Linné considered the Domestic Pigeon to be a domesticated race of the Stock-Dove, but this error did not long prevail. No doubt the wild Rock-Pigeon (*Columba livia livia*) is the ancestor of the European House-Pigeons, while *C. l. schimperi* and *intermedia* are those of the Egyptian and Indian domesticated birds.

The wild races of *C. livia* are not so easily disposed of, but my investigations have convinced me that neither in East Siberia, China and Japan, nor in Porto Santo, Madeira, and the Azores, are wild forms indigenous, and that all birds recorded from these countries are feral; this is, in my opinion, evident from the colour-varieties which they represent; where they vary enormously, and where a uniform type is very rare, or where spotted and rufous-barred birds are the rule, we can only have to do with feral birds.

Bannerman's *canariensis* is quite recognisable if a series is compared, though I cannot see that it is darker than *C. l. livia* on the upperside, and my wing-measurements range up to 227 mm.

C. l. schimperi differs by its very light mantle and small size, while the rump is not white, but whitish grey or greyish white. This form is the most distinct of all, but often interbreeds with feral Domestic Pigeons, probably descendants of the same race.

C. l. palaestinae is darker; but not only the birds from Palestine, but also those from Arabia belong to it. More information will be found in my book on the palaeartic birds.

C. l. gaddi Sarudny is like *palaestinae*, but larger. I have only compared one specimen shot in S.W. Persia by Mr. Witherby, of which I think that it must belong to this form. It is said to inhabit the provinces of Luristan and Arabistan, west of the mountains.

C. l. neglecta is certainly paler than the very dark typical *intermedia* from India, but in the Himalayas, near Kashgar, etc., the two forms seem to mix and to intergrade. *Columba livia korejewi* Sarudny and Loudon (*Orn. Monatsber.* 1906, p. 134) from the Semiretchie province in Turkestan is said to be larger, but I do not think that this is constant, and that the authors can have measured many typical *neglecta*.

C. l. intermedia is the dark, dark-rumped Indian subspecies.

The very rare *Columba livia gymnocyclus* (not *gymnocycla*!), only known from Senegambia and the rocks near Gambaga, and apparently from the Los Islands, north of Freetown, is insufficiently known, and the possibility of its being feral requires consideration. Cf. *Cat. B. Brit. Mus.* xxi. p. 257; Hartert, *Nov. Zool.* 1899, p. 406; Reichenow, *Vög. Afr.* i. p. 400; Alexander, *Ibis* 1902, p. 368.

III. ON *COLUMBA NIGRICANS*

Columba nigricans has been described by Buturlin (*Annuaire Mus. Zool. St. Pétersbourg* xiii. p. 324, 1908) from one single specimen shot from an apparently wild flock at "Tunzay-inzsa in the Sologow valley in Vei-chan, north of Cheng-te and east of Dolon-nor, near the head springs of Shara-muren and Liao-khe." The author describes the bird as follows:

"*Columba nigricans*—corpore supra cum uropygio ardesiaco-nigricante, sed dorso inferiore, tectricibus alarum majoribus summo apice, reetricibus extimis pogonio externo dimidio basali dilute coerulescente-canis; rostro nigricante; alis 220 millim. longis; abundat in rupibus prope Tunzanszy, Vei-tschan."

This appears to be a totally distinct species, hitherto unknown. There is nothing in it which suggests to me that it could be a feral variety, though this suspicion easily arises with new species of the genus *Columba* from palaeartic countries.

IV. ON THE RACES OF THE "SNOW PIGEON"

In looking over the series of *Columba leuconota* in the Tring and British Museums it occurs at once that the examples from West China are lighter, paler on the upperside, than those from the Western Himalaya. In measuring them they also appear to be larger, certainly reaching larger dimensions than the latter, though they overlap.

I propose to name the birds from Szetschwan

Columba leuconota gradaria subsp. nov.

Head not as dark as in *C. l. leuconota*, more slate-grey, mantle paler and more greyish, upper wing-coverts lighter. Wings 239-262, as against 230-245 mm. in birds from the Western Himalaya. Type in the Tring Museum, ♂ ad. Sungpan, Sue-chan in Szetschwan, China, 6. iv. 1894, Berezowski coll.

The distribution of this race appears to be West-China (Szetschwan, Kasun) and Tibet as far west at least as the highlands north of Sikkim. While specimens from Darjiling and Lachang in Sikkim (9000 ft.) still belong to the dark form, those from Gnatong (12,400 ft.) and Gyantse belong to the eastern paler one. Those from "Native Sikkim" in the British Museum are partially intermediate between the two races. Unfortunately the exact localities and altitudes of these birds are unknown, as they were collected by the late Mandelli's Lepchas in that part of Sikkim which was beyond British territory, in Tibet.

V. THE LAUREL-PIGEONS OF THE CANARY ISLANDS

The first notice of the existence of any of these Pigeons is in the interesting work by Ledru entitled "*Voyage aux Iles de Ténériffe, La Trinité, Saint-Thomas, Sainte-Croix et Porto-Ricco*," where we find in vol. i. pp. 177-185 the first list of birds supposed to occur on Teneriffe. There is mentioned (p. 184) "Un pigeon ramier moins gros que celui d'Europe. Bec rouge, dessus et côté du cou bronzés." An asterisk denotes that a specimen was brought to the galleries of the Natural History Museum in Paris. No doubt this short description refers to *Columba bollii*.

The next notice is that of Messrs. Webb, Berthelot and Moquin-Tandon on p. 26 of the "*Ornithologie Canarienne*" in the *Histoire Naturelle des Iles Canaries*. Here the name *Columba laurivora* occurs for the first time. It has universally been adopted for the species with the whitish tip (**not subterminal bar**) to the tail, which inhabits the islands of Palma and Gomera. Unfortunately this is impossible to accept, for the following reasons:

Under the name *Columba laurivora* the authors describe the male of the

Madeiran *C. trocaz*, merely adding that the female differs by having the throat of a more or less deep glittering green, the wings of a dark brown, the flanks and lower abdomen rufous brown, and a white terminal tail-band. No doubt this description of the supposed ♀ refers to what is now called *C. laurivora*, but the name was not given to this supposed female in particular, but to the Madeiran *C. trocaz*, and on the plate (3) the latter is figured above, *C. laurivora* auct. below. *Columbe trocaz* Heineken is quoted as a synonym, and the authors say, as an explanation why they rename the species, as follows: "Le docteur Heineken est le premier qui ait signalé cette Colombe; il l'a décrite en lui conservant le nom vulgaire de *Trocaz*, mais sans lui imposer le nom latin scientifique. Nous n'avons pas conservé cette dernière dénomination, qui nous a paru trop vague, et nous adopterons l'épithète latine de *laurivora*, qui nous paraît très-caractéristique, puisqu'elle indique une des principales habitudes de l'oiseau." It is clear that we cannot charge the authors with having named the Canary Pigeon if they in the first instance described the Madeira species and clearly say that they rename it *laurivora* because "*trocaz*" is not a Latin name!

C. laurivora is therefore a synonym of *C. trocaz*, and the Canary Islands species with a terminal whitish area to the rectrices is nameless; I therefore propose for it the name

Columba junoniae nom. nov.

from its habitat: La Palma and Gomera, or, as they were formerly called, Junonia Mayor and Junonia Menor (see Brown's *Madeira, Canary Islands and Azores*).

Type ♀ ad. La Galga, Palma, 20. iv. 1889, no. 15232, H. B. Tristram coll.; in Mus. Rothschild, Tring.

The other species with the slaty back and grey subterminal bar to the rectrices was probably referred to by Bolle in the *Journal für Ornithologie*, 1857, p. 329, under the name of "*Columba (Torcaza) Buvryi* Bonap.?" but the description, which was made up from verbal information, does not quite agree, and as Bonaparte in *Compt. Rend. Acad. Paris* xli. and xliii., 1855 and 1856, gave the name *buvryi* to the Madeiran *trocaz*, this name can in no case be accepted. It was, however, properly diagnosed and named *Columba bollii* by Godman, *Ibis* 1872, p. 217, from Teneriffe specimens, and this name is unassailable. The type is in the British Museum, and the description clear. Godman's spelling too must unfortunately be preserved, though Dr. Bolle declared that the name must be spelled *bollei*, as his name was Bolle and not Bollius.

Columba bollei inhabits Teneriffe, La Palma and Gomera, and formerly also Gran Canaria, where, according to Bannerman, it has disappeared with the laurel woods. In fact, it is just as fond of these latter, and the laurel berries, as the formerly so-called "*laurivora*," now *junoniae*.

VI. ON THE NAME AND DISTRIBUTION OF THE CURAÇAO PIGEON *COLUMBA GYMNOPHTHALMA*

Having received the beautiful set of "*Illustrations to the Birds of South America*" of Lord Brabourne and Charles Chubb, by H. Grönvold, my attention was naturally arrested by pl. 14, the "Bare-faced Pigeon." This species is there, and on page 15 of the "*List of Birds of South America*," called *Columba corensis*

Jacq., and in a footnote is said: "We prefer to follow Count Salvadori's suggestion, as we consider that the bare space round the eye, mentioned by Jacquin, is a sufficient character to identify the species."

This deduction, in my opinion, is incorrect. Jacquin's diagnosis (*Beyträge zur Geschichte der Vögel*, 1784, p. 31) is as follows: "Columba (corensis) cauda aequali, orbitis denudatis atro-punctatis, corpore grisea." To this is added the following description:

"Bey Koro, in dem Gebiete von Venezuela, wohnt eine schöne Taube, welche an Grösse der gemeinen Haustaube gleichkömmt. Sie ist durchaus schöngrau, und die hinteren Federn des Halses sind sehr schön schuppenähnlich, und obschon sie mit den übrigen gleichfärbig sind, so spielen sie doch verschiedentlich. Die rothen Augen stehen in einem kahlen mit schwarzen Puncten besetzten Flecken. Die Füsse sind roth. Die Indianer nehmen die Jungen aus dem Neste, erziehen und essen sie."

This description, taken from manuscript notes made by Jacquin's father during his sojourn in Venezuela, reads, translated into English, as follows:

"Near Koro, in the country of Venezuela, lives a fine Pigeon, which agrees in size with the common domestic Pigeon. It is throughout of a beautiful grey colour, and the feathers of the hind-neck are very beautifully scale-like, and, though of same colour as the rest, they appear different in different lights. The red eyes stand in a bare space which is beset with black dots. The feet are red. The Indians take the young from their nests, rear them, and eat them."

Can this description be adopted for the species in question? In my opinion certainly not. It is certainly not "throughout of a beautiful grey colour," as the upper back and scapulars as well as the lesser and median upper wing-coverts are greyish brown, the head and most of the underside are vinous, a wide stripe along the wing and the under tail-coverts white, and one could only call the lower back and rump and the flanks "beautifully grey." The white alar stripe is so conspicuous that the inhabitants of Curaçao, Aruba and Bonaire call this Pigeon the "Alablancó," i.e. the "White-wing." Moreover the naked space around the eyes is not exactly dotted with black. Even the feathers of the hind-neck are not really of the same colour as the rest, but the upper ones have bluish white, the hinder ones pink edges, bordered with a narrow black line, and they are not iridescent. There is therefore hardly anything in the description which agrees well with the bird—the colours of which are very well shown in Mr. Grönvold's plate—except that it has a bare space round the eye, and that the tail is equal—though I would rather call it slightly rounded.

And last but not least comes another point: the "habitat"! I cannot understand why the authors of the *List* say that it is "Venezuela," and nothing else. The fact is that it has never yet been found in Venezuela—at least there is no proof of it. For about eighty years it was only known from single specimens in four or five museums, which probably all came over alive from Curaçao—like *Amazona ochroptera*—and was haphazardly, without any proper reason, supposed to come from the "interior of Brazil," until, in 1892, I discovered its habitat—the islands of Aruba, Curaçao and Bonaire. Mr. Ernst Peters (see *Journ. f. Orn.* 1892, p. 112) said that this same Pigeon, of which he had shot two specimens, which, however, were not skinned, but taken by a cat, occurs in Venezuela, where it is called "manglera." This statement was evidently made from hearsay, and not from personal observation, and even in the latter case it would have been with-

out value, because Herr Peters was not able to name the pigeon which he had shot and lost on Curaçao. It is, of course, quite possible that *Columba gymnophthalma* occurs in Northern Venezuela, especially since it has been obtained on the island of Margarita by Mr. Wirt Robinson, but as yet it has never been proved to be found on the mainland.

This is another weighty reason for the rejection of the name "*corensis*," and it is doubtless possible that Jacquin's *corensis* is an unknown pigeon still waiting for rediscovery. Koro is close to the peninsula of Paraguana, the fauna of which is so far unknown. Connected as Paraguana is with the continent by a very narrow land-bridge, its ornithology may have many peculiarities, and among them the doubtful *Columba corensis*.

Moreover, Count Salvadori (*Cat. B. Brit. Mus.* xx. p. 269) did not suggest that *Columba corensis* was the proper name of *C. gymnophthalma*, but showed clearly that he considered it undefinable, as he quoted it with a query.

Reverting again to the *List of the Birds of South America*, we must thus object to the distribution of the Pigeon in question, given as "Venezuela," and which should be: Aruba, Curaçao, Bonaire, and Margarita Islands. The name, as I have explained, must be *Columba gymnophthalma*, and instead of the English name "Bare-faced Pigeon," the name "Curaçao Pigeon" would be preferable, because there are other bare-faced pigeons in existence.

The plate (14) by Mr. Grönvold cannot pass without some criticism. The bare space round the eyes is painted blue, though I have (*Ibis* 1893, p. 323) carefully described it as a "large granulated naked space of a dark reddish-brown colour, somewhat like an over-ripe strawberry"; the bill is coloured bright yellow, but in life it is "of a whitish flesh-colour," while the iris is deep orange-brown (not red), surrounded by a smooth bare ring of a bluish-grey colour. The colouring of the plumage is of course rendered very well, but the tail looks too short in the front figure, though fully long enough in the flying bird on the left.

NOTES ON *GLAREOLA*.

BY ERNST HARTERT, PH.D.

IN the *Cat. B. Brit. Mus.* xxiv. the genera *Glareola*, containing the species with a deeply forked tail, and *Galactochrysea* (corr. *Galachrysia*), embracing those with a slightly forked one, are recognised. Mathews (*B. Austr.* iii. p. 321, 1913) added *Subglareola*, with *ocularis* from Madagascar as genotype. These genera are unnecessary, *Glareola orientalis* and *ocularis* forming stepping-stones from *Glareola* s.s. to *Galachrysia*.

Under *Glareola pratincola* Sharpe (*Cat. B. Brit. Mus.* xxiv. p. 53) and Reichenow (*Vög. Afr.* i. p. 144) united the birds of Southern Europe and West Asia with those from Africa, believing that they migrated to tropical Africa, where they passed the winter. This is not the case, as they breed in the latter country and are distinguishable. Of recent authors Erlanger was the first to see the differences in plumage, while Fülleborn, Erlanger, and Millar found them breeding in East and S.E. Africa.

While Erlanger (*Journ. f. Orn.* 1905, p. 55) tentatively recognised *G. p. pratincola*, *limbata*, and *orientalis*, from the Mediterranean countries, tropical Africa, and Asia, Neumann (*Orn. Monatsber.* 1910, p. 10) went one step farther, separating a second tropical African race, which he named *Glareola pratincola fülleborni*. Neumann's view is acceptable, though the two African forms are not very easy to distinguish.

Reichenow (l.c.) further confused the nomenclature by accepting Sharpe's view, that *Tringa fusca* Linné (*Syst. Nat.* Ed. xii. 1, p. 252, 1766) was the same as his *Hirundo pratincola* (t.c. p. 345), and temporarily being an advocate of strict priority, even going as far as recognising page-priority, replaced the well-known name *pratincola* by *fusca*; one would have to accept this, if the name *fusca* could possibly refer to the Pratincole, but it does not. Linné took it from Brisson, who described a bird from the Senegal which was all-over brown, including the abdomen, the upper and under tail-coverts and throat. It is difficult to say what this bird might have been, but it is quite certain that it was not *Glareola pratincola*; and therefore the name *fusca*, unfortunately adopted by Neumann, but not by Erlanger, cannot be used for it.

1. *Glareola pratincola pratincola* (L.)

Hirundo Pratincola Linnaeus, *Syst. Nat.* Ed. xii. 1, p. 345 (1766—"Habitat ad littora Europae australioris; in Austriae pratis apricis").

Upperside yellowish greyish brown. Axillaries and inner under wing-coverts ferruginous. Inner secondaries in fresh plumage with white tips.

South Europe, North Africa north of the Sahara, Western and Western Central Asia.

2. *Glareola pratincola limbata* Rüpp.

Glareola limbata Gray, *Gen. B.* iii. p. 538 (1844—Nomen nudum, ex Rüppell MS.); Rüppell, *Syst. Uebers. Vög. Nordost. Afr.* p. 113 (1845—Near Djeddah and Massaua on the Red Sea and in the highlands of Simen, Abyssinia).

Colour of upperside slightly deeper brown, throat more brownish, inner under wing-coverts deeper ferruginous.

N.E. Africa, from Khartum or Nubia southwards, S. Arabia, Sudan to Senegal, and apparently west coast south to N. Angola—at least a specimen collected by C. H. Pemberton at Barraca, on the Cuanza River, is perfectly similar to specimens from N.E. Africa, while it differs from East African ones. Two skins from the Upper Casamanze, however, agree with *fülleborni*.

Erlanger, Neumann, and others have admitted the name *limbata* of Rüppell, and I suppose this must be done, as he evidently had tropical African specimens before him; but, as I pointed out as long ago as 1891, in *Kat. Vogels. Mus. Senckenberg.* p. 218, Rüppell distinguished young birds as different from adults, and also Erlanger appears not to have grasped the real differences, which were for the first time pointed out by Oscar Neumann.

3. *Glareola pratincola fülleborni* Neum.

Glareola fusca fülleborni Neumann, *Orn. Monatsber.* 1910, p. 10 ("Ostafrika vom Manjara See bis Natal").

Still darker on the upperside than *G. p. limbata*, the breast darker and more olivaceous, the inner under wing-coverts still darker. In this form and in *G. p. limbata* the brown border on the outer under wing-coverts is generally wider than in *G. p. pratincola*.

E. Africa from Lake Manjara to Natal; also two skins from the Upper Casamanze, Senegambia, agree with this form.

Glareola maldivarum Forst.

Glareola (Pratincola) Maldivarum Forster,* *Faunula Indica*, p. 11 (1795—ex Latham, *Gen. Synops.* iii, 1, p. 224. Maldive Islands).

Differs from *G. pratincola* by the much less forked tail, with considerably shorter outer rectrices, the absence of distinct white tips to the inner secondaries even in the freshest plumage and in adult males, and by the rufescent breast. The colour of the upperside and throat are dark and rich, as in *G. pratincola fülleborni* and *limbata*.

Breeds in China, south to Hainan, north to southern Dauria,† and in several parts of India; migrates to the Malayan Islands and Australia.

Dresser, Erlanger, and Neumann have treated this bird as a subspecies or geographical race of *Glareola pratincola*, but as both the latter and *G. maldivarum* (= *orientalis* auct.) were found breeding in Sind by Doig (specimens in the Hume collection in the British Museum), and the differences are striking, more so than those between *G. melanoptera* and *pratincola*, which both nest in many parts of South Russia, it is against my principles, and not quite reasonable, to treat *G. maldivarum* as a geographical representative of *G. pratincola*.

On May 24, 1903, Mr. F. R. Mortimore shot an adult female on Serf Island, Seychelles. On the label he put "Migratory. No native name. Iris black. Beak black, base red. Legs dark brown." Whether this occurrence is quite an accidental one, or whether the species migrates more or less regularly to the Seychelles, I am at present unable to say.

* Sherborn and Mathews have quoted this work as by Latham & Davies, but erroneously. The first edition of this work by Latham & Davies was appended to Pennant's *Indian Zoology*, but the names of the birds at least were in English, and Forster, in his revised edition, which was published at Halle in 1795, first gave Latin names to all the species.

† Only found once by Radde, breeding in a salt-marsh.

This bird used to be called *G. orientalis*, but, as shown by Mathews, Forster in 1795 called it *Glareola maldivarum*, *coromanda* and *madraspatana*, giving Latin names to Latham's Maldivian, Coromandel, and Madras Pratincoles.

In the *Cat. B. Brit. Mus.* xxiv. p. 60, Sharpe says that "the adult plumage is apparently gained by a moult," as if anything else were possible. This reminds me of another instance in literature: In the new edition of Naumann, vol. viii. pl. 11, the specimens are rather richly coloured. This is not the fault of the reproduction, but because I or my assistant allowed Keulemans to take as models specimens from Khartum and East Africa, not knowing that they differed from European ones. Ornithologists and geographers will, however, find it a puzzle to identify the "Kokorikosee." The specimen figured is a semi-adult male from Lake Kikorongo, a salt-lake one day's march from Lake Albert Edward, in Toru, Uganda Protectorate, where the late Dr. Ansorge collected several specimens in April 1899.

In the *Cat. B. Brit. Mus.* xxiv. p. 63, is another curiosity. Sharpe explains there in a footnote that the name *iberiae* must be adopted for the species under consideration, but he quotes *Glareola marchei* Oust. 1877 and *Glareola nuchalis iberiae* Schlegel, 1881. According to his own synonymy, therefore, the form in question must be called *marchei* and not *iberiae*! Reichenow, however, considers that Oustalet's description of his *marchei* refers to the form known as *nuchalis*, and in this he is undoubtedly right. In any case *marchei* cannot be the same as *iberiae*, as it has the nape white and not rufous.

CONCERNING THE OCCURRENCE OF *EROLIA BAIRDII* IN SOUTH-WEST AFRICA

By ERNST HARTERT, PH.D.

IN the *Ibis*, 1870, pp. 151, 152, Mr. J. E. Harting made known the very interesting and unexpected fact, that C. J. Andersson had obtained a specimen of *Erolia bairdii* at Walvisch Bay, S.W. Africa, on October 23, 1863. He said that the single specimen was "in the collection of the late Mr. C. J. Andersson." Seebohm, *Geogr. Distribution of the Charadriidae*, p. 445, says that the specimen is in his collection. Sharpe, *Cat. B. Brit. Mus.* xxiv. p. 768, informs us that he was unable to find it in the Seebohm collection. Buturlin, in Dresser's *Eggs of Birds of Europe*, p. 693, tells us that this skin passed from the Seebohm collection into that of the St. Petersburg Museum. One example was procured on the island of Arakamchechen near the Tschuktschen coast. This specimen is the only one ever obtained on the Siberian side of the Bering Strait. Taczanowski, *Faune Orn. Sibérie Orient.*, p. 924, seems to think that two specimens have been obtained there, but Palmén means, of course, the same bird which Nelson collected near the shore of Tschuktschenland.

Buturlin, in the valuable notes given in Dresser's work, accuses Reichenow of having said that the species has "frequently" occurred in Damaraland. Reichenow, however, did not put it so strong, though he certainly said "mehrmals," which means several times, while frequently would be "häufig," though only the one single bird has ever been recorded from Africa.

WHAT IS THE CORRECT NAME OF THE "LONG-TOED STINT" ?

BY ERNST HARTERT, PH.D.

THIS bird has been generally known under the name of *Tringa* or *Actodromas subminuta*, but some authors called it *Tringa damacensis*, and the latter name has been adopted by Sharpe, *Cat. B. Brit. Mus.* xxiv. p. 553, in the combination "*Limonitès damacensis*," in the *Check-List of N. Amer. B.*, 3rd Ed., p. 115, and by Mathews, *B. Austr.* iii. p. 251, as *Pisobia damacensis*. By those who adopted the latter specific name few comments have been made on the correctness of this name. Stejneger, *Res. Orn. Expl. Commander Is., and Kamtchatka* (*Bull. U. S. Nat. Mus.* no. 29) p. 116, merely says: "Having heard of no doubt concerning the identification of Horsfield's *damacensis* with Middendorff's *subminuta*, I adopt it without further comment." Mathews, t.c. p. 253, says: "Long known by Middendorff's name of *subminuta*, it was originally described by Horsfield, and the Horsfieldian name was used by ornithologists having access to the British Museum, where the type is preserved. The description given by Horsfield is, of course, quite inadequate to identify the species, no mention being made of the long toes and no measurements given." A name, however, is not correct because nobody has expressed any doubt about its identification, nor merely because a type is supposed to exist. The diagnosis must be correct, and the supposed type must be the real type. These two essential questions appear to have been considered only by Blanford. In *Fauna Brit. Ind., Birds* iv. p. 274, he says: "Dr. Sharpe has examined the two type-specimens of Horsfield's *Totanus damacensis*, and finds that one belongs to *Tringa ruficollis* and one to *T. subminuta*; but the words in Horsfield's brief description, '*rachidibus primorum albis*' (shafts of the primaries white), is applicable to *T. ruficollis* only."

With regard to the supposed type: In Horsfield's time authors did not at once mark the specimen or one of the specimens from which the original description was taken as the type, as is now done by nearly all conscientious ornithologists. In nearly all cases such specimens were **afterwards** marked as the types, and it is therefore obvious, that in a case where two specimens, belonging to different species, are marked as types, neither of them can serve to prove the meaning of the name.

There remains the diagnosis. We should certainly have liked Horsfield's descriptions to be better, more accurate, more detailed. Mr. Mathews has in several places in his work on the *Birds of Australia* commented on their insufficiency, but they are really often much better than one is apt to believe at a first glance, if they are carefully read and properly understood.

The sentence quoted as essential by Blanford is by no means all. There is no doubt it was meant to say "shafts of the primaries white." Horsfield called the primaries "remiges primores" and not "remiges primariae," as we do now; his meaning is therefore absolutely clear. Besides, there are other reasons why I consider that the description can only refer to *Erolia ruficollis*: Horsfield says "*subtus albus*" and "*supra pallide cinereo-fuscus*." Now *Erolia ruficollis*,

in winter plumage, is above pale; *subminuta* on the other hand is rather dark, and the underside of the former is practically white all over, while that of *subminuta* is conspicuously streaked on the foreneck and chest, which would certainly have been mentioned in the diagnosis.

Therefore *Totanus damacensis* Horsf. is a synonym of *Tringa ruficollis* Pall., and the "Long-toed Stint" must be called "*Erolia subminuta*," or rather "*Erolia minutilla subminuta*." The two forms *E. m. minutilla* and *A. m. subminuta* agree in their main features and are geographical representatives, as conceived by Seebohm (*Geog. Distrib. of Charadriidae*, pp. 438, 439).

ON THE FORMS OF *BURHINUS OEDICNEMUS*

BY ERNST HARTERT, PH.D.

IN *Nov. Zool.* xviii. p. 547, Lord Rothschild and I gave a review of the subspecies of *Burhinus oedicnemus* which we knew at the time. I find that this little review holds good. The fourth form we did not name, calling it *Oedicnemus oedicnemus* subsp. It is the pale form of the Indian desert, extending at least from Merw (Transcaspia) to East and South Persia, and Persian Baluchistan (Kafir-Kala and Bampur, N. Zarudny coll.), and over the Indian desert as far east as Hissar (Sirsa). It is similar to *B. oedicnemus saharæ*, but still paler, less rufescent-sandy, and with a slight greyish tinge; the blackish markings on the upperside are not so large, the stripes on the breast are narrower, the dark alar bar is less developed. We thought in 1911 that the name *scolopax* of S. G. Gmelin might possibly refer to it, but we learn from Zarudny that in North Persia the dark common *B. o. oedicnemus* occurs, while he calls the one from East Persia "*Oedicnemus indicus*," and in *Journ. f. Orn.* 1911, p. 232, he says, that specimens from East and South Persia "den Übergang zu *O. indicus* Salvad. vermitteln." As the Indian bird is rather dark and not pale-coloured, one cannot say that the pale birds from South and East Persia, etc., form a transition, and no name being available, I call it

***Burhinus oedicnemus astutus*, subsp. nov.**

Type from Fao, Persian Gulf, collected by Cumming, in the Tring Museum.

ON THE BIRDS FIGURED IN THE ATLAS TO KRUSENSTERN'S VOYAGE ROUND THE WORLD.

By ERNST HARTERT, Ph.D.

ONE of the rarest books, apparently even in Russia, seems to be the *Atlas zur Reise um die Welt unternommen auf Befehl Seiner Kaiserlichen Majestät Alexander des Ersten auf den Schiffen "Nadeshta" und "Neva" unter dem Commando des Capitains von Krusenstern.*—St. Petersburg, 1814. It is a huge folio work with maps, landscapes, portraits, costumes, ethnographical articles, and animals of all kinds. The maps were done by Captain von Krusenstern, all the other plates by "Hofrath Tilesius of Leipzig" (W. G. Tilesius von Tilenau), who had accompanied the expedition as naturalist. It was intended to publish a volume on the Natural History results of the voyage, but the text has never appeared.

I am greatly obliged to Dr. Chalmers Mitchell for kindly lending me the copy of these plates in the library of the Zoological Society of London.

Only the following plates contain birds :

PLATE XVII

A pigeon and a parrot. The Pigeon is called "Der Kokuh," the Parrot "Der Pihidi," and both are supposed to have come from the island of Nukahiwa or Nukuhiwa, in the Marquesas Group, Pacific Ocean. The Parrot is undoubtedly the species now known as *Coriphilus ultramarinus* (Kuhl), an inhabitant of the Marquesas Islands, though the figure is not exact in all details (cf. *Cat. B. Brit. Mus.* xx. p. 48).

The Pigeon is a species unknown to us. It appears to belong to the genus *Phlegoenas* Rchb. Vieillot (*Nouv. Dict. d'Hist. Nat.* xxvi. p. 346, 1818) named it *Columba rubescens*. Unless wrongly represented and not from the Marquesas Islands, it is a species peculiar to Nukahiwa. As the parrot is fairly well represented, we may presume that the pigeon is also. It is urgently desirable that a competent ornithologist or able collector should visit the Marquesas, in order to find out if *Columba rubescens* is already extinct or still in existence (cf. *Cat. B. Brit. Mus.* xxi. p. 606).

PLATE XVIII

Upper figure: "Der Brasilianische Kiebitz." A fairly good figure of *Belonopterus cayennensis* (Gm.) (*Cat. B. Brit. Mus.* xxiv. p. 163).

Lower figure: "Der Beissige Pelikan." A good figure of *Sula leucogaster* (= *Sula sula*, *Cat. B. Brit. Mus.* xxvi. p. 436, nec *Pelecanus sula* L.).

PLATE XLIV

An uncoloured plate. The upper figure seems to represent some kind of Finch, but I cannot make out which species. It is left unnamed, but is presumably from Japan, as it is on the same tree with an owl called "Die japanische Eule." The latter has an unfeathered tarsus and ear-tufts. No Japanese Owl is known to me which resembles the drawing.

PLATE XLVI

Another uncoloured plate, said to be a Japanese Fish-hawk, "Der Bisago oder japanische Fischfalke." I should say it would be meant for a *Buteo*, but a Buzzard is not a Fish-hawk!

PLATE LVII

"Die japanische Moeve mit dem Blutschnabel."—It is this plate which served as the type of Vieillot's *Larus crassirostris* (*Nouv. Dict. d'Hist. Nat.* xxi. p. 508, 1818). The figure is good, with the exception of the bill, which is represented far too large, thus causing Vieillot to name the species *crassirostris*, which is by no means a suitable name.

PLATE LXXXIV

"*Tringa variegata* oder der bunte Sachalinische Strandläufer."—An excellent representation of the Eastern form of the Dunlin. On this plate Vieillot, *Nouv. Dict. d'Hist. Nat.* iii. p. 359 (1816), based his *Scolopax sakhalina*, and this name, in the form of *Erolia alpina sakhalina*, must be accepted for the E. Asiatic and North American Dunlin (cf. Buturlin, *Auk*, 1914, pp. 50-53).—*Tringa variegata* is preoccupied by Gmelin, 1789.

PLATE LXXXV

Upper figure: A Wagtail, evidently *Motacilla leucopsis*. This is the bird to which Vieillot (*Nouv. Dict. d'Hist. Nat.* xiv. p. 599) refers as follows: "*Le hochequene, décrit par Sackalin, et qui se trouve en Russie.*" Evidently Vieillot had here confused his notes, as in the case of his *Scolopax sakhalina*. As Buturlin assured us, there is, previous to Vieillot's writings, no Russian author by the name of Sakhalin or Sackalin, and no special work on the island of Sakhalin (see *Auk*, 1904, p. 50).

Lower figure: "Eine Meise von Jesso." This note does not do credit to the author—whether Tilesius or some one else—for in the Russian explanation of the plate it is said that both birds came from Sakhalin, not from Jesso, and the bird is far from being a Titmouse ("Meise"). I cannot find any mention of this bird in the *Nouveau Dictionnaire*, by Vieillot, and it seems to be a bad representation of *Saxicola* ("*Pratincola*") *torquata stejnegeri* (Parrot) (cf. Hartert, *Vög. Pal. Fauna* i. p. 708).

PLATE LXXXVI

A coloured figure of a Wader. On the plate: "*Tringa Meleagris, die braune weiss punctirte Meerlerche.*" This plate has been named "*Tringa Sakhalmi*" by Vieillot (*Nouv. Dict. d'Hist. Nat.* xxxiv. p. 471), "*le Tringa de Sakhalm.*" Probably "Sakhalm" and "Sakhalmi" are misprints or slips for "Sakhalin" and "Sakhalina." The figure is very peculiar and evidently not a faithful representation of any bird. Buturlin (*Auk*, 1904, p. 52) took it for a young "*Heteractitis brevipes*," but the golden yellow colour on the short, square tail, and the long legs, as well as the spotting on the back and wings, cannot possibly have been taken from any *Heteractitis*. They agree with the eastern Golden Plover (*Charadrius fulvus*), but the long bill and markings on the head are those of a "*Heteractitis*." Probably the figure of "*Tringa meleagris*" is a mixture of both, and a fictitious one.

WEITERES ZUR AVIFAUNA VON TIMOR.

VON C. E. HELLMAYR.

KURZ nach erfolgter Drucklegung meiner "Avifauna von Timor"* machte ich die unliebsame Entdeckung, dass mir zwei für die Ornithologie dieser Insel nicht unwichtige Veröffentlichungen entgangen waren.

Wie ich in dem historischen Abschnitt über die ornithologische Erforschung Timors † hervorhob, ist ein zusammenhängender Bericht über die Sammelausbeute der Expedition *Baudin* niemals publiziert worden. Indessen hatte, was ich damals übersah, R. P. Lesson in seinem bekannten "Traité d'Ornithologie" ‡ eine ganze Anzahl der von René Maugé, einem der Naturforscher der Expedition an das Pariser Museum eingesandten Vogelarten aufgeführt, ja sogar zwei neue Arten, *Cinnyris thoracicus* (p. 297) und *Dicaeum maugei* (p. 303) bekannt gemacht, welche letztere von keinem der späteren Schriftsteller gedeutet werden konnte.

Zunächst sei eine Liste der im "Traité" namhaft gemachten timoresischen Arten gegeben. Den von Lesson gebrauchten Benennungen habe ich die heute gültigen Namen aus der "Avifauna von Timor" gegenübergestellt, unter gleichzeitiger Beifügung der bezüglichen Seitenzahlen:

Lesson, <i>Traité</i> .		<i>Avifauna von Timor.</i>
p. 243	<i>Alcedo bengalensis</i>	= <i>Alcedo ispida floresiana</i> p. 70
p. 270	<i>Hirundo esculenta</i> , variété à gorge blanchâtre	= <i>Collocalia esculenta neglecta</i> p. 66
p. 297	<i>Cinnyris solaris</i>	= <i>Cinnyris solaris solaris</i> p. 54
p. 303	<i>Dicaeum maugei</i> Less.	= <i>Dicaeum macklotii macklotii</i> p. 55
p. 370	<i>Ocypterus albiventer</i>	= <i>Artamus leucorhynchus celebensis</i> p. 41
p. 370	<i>Ocypterus cinereus</i>	= <i>Artamus perspicillatus</i> p. 41
p. 374	<i>Notodela (Turdus) orientalis</i>	= <i>Lalage nigra timorensis</i> p. 39
p. 389	<i>Muscicapa hyacinthina</i>	= <i>Cyornis h. hyacinthina</i> p. 27
p. 413	<i>Saxicola orientalis</i>	= <i>Lalage nigra timorensis</i> p. 39
p. 446	<i>Loxia punctularia</i>	= <i>Munia punctulata blasii</i> p. 60
p. 447	<i>Loxia variegata</i>	= <i>Uroloncha molucca propinqua</i> p. 60
p. 471	<i>Columba javanica</i>	= <i>Chalcophaps chrysochlora timorensis</i> p. 92
p. 472	<i>Columba purpurata</i>	= <i>Ptilinopus ewingii flavicollis</i> p. 85
p. 509	<i>Coturnix (Perdix) chinensis</i>	= <i>Excalfactoria chinensis lineata</i> p. 93
p. 542	<i>Vanellus gallinaceus</i>	= <i>Irediparra g. gallinacea</i> p. 105
p. 607	<i>Tachypetes aquila</i>	= <i>Fregata aquila</i> p. 109

* In C. B. Haniel, *Zoologie von Timor*, Lief. 1, Stuttgart 1914, pp. 1–112.

† *Ibidem*, p. 2.

‡ Als Erscheinungsjahr dieses Werkes wird allgemein "1831" angenommen. Wie ich jedoch einer freundlichen Mitteilung C. W. Richmond's in Washington verdanke, ist das Buch in acht Lieferungen in der Zeit von Februar 1830 bis Juni 1831 veröffentlicht worden. Bisher vermochte Richmond nur den Umfang der vier ersten Lieferungen festzustellen:

Lief. 1, feuille 1–5	: pp. 1–80	. . . . .	Februar 1830
" 2 "	6–10	: pp. 81–160	. . . . . Mai 1830
" 3 "	11–15	: pp. 161–240	. . . . . Juli 1830
" 4 "	16–20	: pp. 241–320	. . . . . September 1830

Da der Umfang der Lief. 5 in der *Bibl. franç.* nicht verzeichnet ist, lässt sich auch der Inhalt der späteren Hefte nicht eruieren.

Von diesen Arten verdient nur *Dicaeum maugei* besondere Berücksichtigung und wird weiter unten (p. 103) näher zu behandeln sein. Sechs weitere Formen: *Australasia viridis* (p. 210), *Ceyx cyanea* (p. 241), *Cinnyris thoracicus* (p. 297), *Certhionyx variegatus* (p. 306), *Oriolus variegatus* (p. 405), und *Fringilla maia* (p. 448) sind im "Traité" fälschlich der Insel Timor zugeschrieben; sie finden im zweiten Abschnitt dieses Artikels Erwähnung.

Von der Weltumseglung der "Gazelle" in den Jahren 1874-76 brachte der Arzt des Schiffes, Dr. Hüsker, eine kleine Vogelsammlung nachhause, über welche J. Cabanis und A. Reichenow * berichtet haben. Aus Timor sind nur acht Arten in dieser Zusammenstellung verzeichnet. Eine derselben, *Geopelia cuneata* (p. 325), ist jedenfalls durch eine Etikettenverwechslung irrtümlich mit der Heimatsangabe "Timor" versehen. Die anderen sind folgende:

<i>Journ. f. Orn.</i> 1876.		<i>Avifauna von Timor.</i>
p. 319	<i>Muscicapa (Cyanornis) hyacinthina</i> = <i>Cyornis h. hyacinthina</i>	p. 27
p. 321	<i>Dicrourus densus</i> = <i>Dicrurus densus</i>	p. 39
p. 322	<i>Artamus perspicillatus</i> = <i>Artamus perspicillatus</i>	p. 41
p. 324	<i>Trichoglossus haematopus</i> = <i>T. haematod[us] capi-</i> <i>stratus</i>	p. 78
p. 325	<i>Astux torquatus</i> = <i>A. torquatus torquatus</i>	p. 97
p. 325	<i>Carpophaga rosacea</i> = <i>C. rosacea</i>	p. 87
p. 329	<i>Sula personata</i> = <i>Sula dactylatra personata</i>	

Die letztgenannte Art fehlt in der "Avifauna von Timor," und ist als No. 141 nach *Fregata aquila* (p. 109) einzufügen.

Ausserdem lenkten Nachforschungen in der Literatur meine Aufmerksamkeit auf eine Reihe bisher übersehener Beschreibungen Vieillot's im *Nouveau Dictionnaire d'Histoire Naturelle*, denen Exemplare von der Expedition Baudin zugrunde gelegen hatten, und deren Klarstellung durch Nachprüfen der Typen umsomehr geboten erschien, als bei vielen auf dieser Reise gesammelten Objecten bekanntermassen die Fundorte im Pariser Museum nachträglich verwechselt wurden: australische Vögel erhielten die Heimatsangabe Timor, timoresische Arten dagegen die Bezeichnung "Neu Holland." Um diese offenbaren Lücken meiner Arbeit nach Thunlichkeit auszufüllen, benutzte ich einen fünfwöchigen Aufenthalt in Paris im Frühjahr 1914 zur Prüfung der in den Schriften von Lesson und Vieillot erwähnten timoresischen Vogelarten.

Die Ergebnisse dieser Studien sollen in den nachfolgenden Zeilen hauptsächlich mitgeteilt werden.

September 15, 1914.

ERGÄNZUNGEN ZUR SYSTEMATISCHEN ÜBERSICHT DER VÖGEL TIMORS.

Avifauna von Timor.

p. 11 1. *Geocichla peronii peronii* (Vieill.)

Nachzutragen ist, dass der im Pariser Museum aufbewahrte Typus nach Pucheran † nicht aus Australien, sondern aus Timor stammt.

* J. Cabanis und A. Reichenow, Uebersicht der auf der Expedition S.M. Schiff *Gazelle* gesammelten Vögel; *Journal f. Ornith.* 24, 1876, pp. 319-330.

† *Arch. Mus. Paris* vii. 1855, p. 353.

p. 16 4. *Oreicola gutturalis gutturalis* (Vieill.) statt
 O. melanoleuca melanoleuca (Vieill.)

Enanthe gutturalis Vieillot, *Nouv. Dict.* xxi. p. 421 (1818.—“Nouvelle Hollande,” errore! Der Typus stammt zweifellos aus Timor; descr. ♀ ad.); Pucheran, *Arch. Mus. Paris* vii. p. 346 (crit.)

Enanthe melanoleuca Vieillot, l.c. p. 435 (1818.—Timor; descr. ♂ ad.)

Das Originalexemplar des Pariser Museums trägt folgende Aufschrift: “No. 9079. Traquet à gorge blanche, *Saxicola gutturalis*, *Sylvia gutturalis*, Vieill. (Type), de la Nouvelle Hollande (?), par Péron et Lesueur.” Auf dem Postament findet sich ferner die Notiz: “Asie australe. Corvette le Naturaliste, Expéd. Capt. Baudin, an 11, par Lesueur.” Die Masse des Stückes sind: Al. 73; caud. 66; rostr. 13 mm.

Es ist ein altes Weibchen der bisher *O. m. melanoleuca* genannten Art und stimmt sehr gut mit dem von mir* beschriebenen Individuum aus Lelogama (Coll. Haniel No. 209) überein. Der Typus zeigt alle für die Timor-Form charakteristischen Merkmale: Oberseite matt erdbraun, Federn des Vorderscheitels mit verloschenen, dunklen Zentren; Oberschwanzdecken tiefschwarz; Steuerfedern schwarz, die vier äusseren Paare an der Basis in grosser Ausdehnung weiss; Oberflügeldecken schwärzlichbraun, mit hellen Säumen wie l.c. beschrieben; **die Wurzel der inneren grossen Flügeldecken und der inneren Armschwingen ist weiss**, eine Eigentümlichkeit, die auch den drei anderen ♀ ♀ aus Timor zukommt, aber in meiner Kennzeichnung versehentlich zu erwähnen vergessen wurde; die Zeichnung der Kopfseiten ist ganz wie beim Vogel aus Lelogama, nur erscheint der dunkelbraune Ohrfleck infolge des Alters etwas “fuchsiger”; Kehle, Hinterbrust, Bauch und Crissum weiss, die Vorderbrust wie bei No. 209 stark rahmrötlich überwaschen (Vieillot’s Ausdruck “d’un roux clair” ist übertrieben), endlich Achselfedern, Unterflügeldecken und ein schmaler Schwingeninnensaum weiss. Der Schnabel ist verblichen, infolgedessen erscheint die Wurzel der unteren Mandibel blassbraun. Der Typus stammt jedenfalls aus Timor, wie schon Pucheran (l.c. p. 347) vermutet hat, da wir die Art nur von dieser Insel kennen. Der Name *O. gutturalis*, der bisher von allen Schriftstellern übersehen worden ist, steht um vierzehn Seiten vor *O. melanoleuca* und muss dem Prioritätsgesetz zufolge an dessen Stelle treten. Dementsprechend heisst auch die Samau-Form in Zukunft:

p. 19 5. *Oreicola gutturalis luctuosa* (Bonap.) statt
 O. melanoleuca luctuosa (Bonap.)

p. 20 6. *Saxicola caprata pyrrhonota* (Vieill) statt
 S. caprata fruticola (Horsf.)

Enanthe pyrrhonota Vieillot, *Nouv. Dict.* xxi. p. 428 (1818.—“Nouvelle Hollande,” errore! der Typus stammt aus Timor; cf. Pucheran, *Arch. Mus. Paris* vii. p. 347; descr. ♀).
Saxicola fruticola Horsfield, *Trans. Linn. Soc. Lond.* xiii. p. 157 (1821.—Java; descr. ♂ ad.).

Trotz eifriger Nachforschungen ist es mir nicht gelungen, den Typus von *O. pyrrhonota* im Pariser Museum ausfindig zu machen. Vieillot’s Beschreibung lässt jedoch mit Sicherheit das Weibchen des Schwarzkehlchens erkennen. Pucheran, der das Original noch vor Augen hatte und seine timoresische Herkunft feststellte, bezog es schon auf das Weibchen von *Pratincola caprata* [= *Saxicola*

* *Avifauna von Timor*, p. 18.

caprata fruticola], worin ihm der erfahrene Jules Verreaux beipflichtete. Als weitere Stütze für diese Annahme ist zu erwähnen, dass sich im Pariser Museum zwei von der Expedition des Capt. Baudin gesammelte ♂♂ ad. dieser Art aus Timor befinden. Unter diesen Umständen ist es wol gerechtfertigt, die bisher gebräuchliche Bezeichnung *fruticola* durch den älteren Namen Vieillot's zu ersetzen.*

p. 29. 22. **Myiagra ruficollis ruficollis** (Vieill.)

Bei der Abfassung des Kapitels über diese Art übersah ich, dass Swainson † drei Jahre vor Gould eine *Myiagra latirostris* aufgestellt hatte. Dieser Name gründet sich zum Teil auf die "Moucherette à gorge rousse" des Pariser Museums (= Typus von *Platyrrhynchos ruficollis* Vieill., ‡ zum Teil auf *Todus rubecula* Lath., § eine verschiedene Art, die heute die Bezeichnung *Myiagra rubecula* (Lath.) führt. In keinem Fall kann er für die von mir (p. 30) *M. ruficollis latirostris* Gould genannte Repräsentativform des australischen Kontinents in Anwendung kommen, welche den nächst älteren Namen

Myiagra ruficollis kempfi Math.||

zu tragen hat. Ob die anderen von Mathews unterschiedenen Lokalrassen ¶ sich bei näherer Prüfung aufrecht erhalten lassen, bleibe dahingestellt.

p. 39 31. **Lalage nigra sueurii** (Vieill.) statt
L. nigra timorensis (S. Müll.)

Sylvia leucophaea Vieillot,** *Nouv. Dict.* xi. p. 189 (1817—"Nouvelle Hollande," errore! Nach Pucheran, *Arch. Mus. Paris* vii. p. 345, wurde der Typus von Maugé in Timor gesammelt; descr. ♀).

Turdus Sueurii Vieillot, l.c. xx. p. 270 (1818—"Nouvelle Hollande," errore! Nach Pucheran (l.c. p. 351) stammt der Typus aus Timor, coll. Maugé; descr. ♂ juv.)

Ceblepyris timorensis S. Müller, *Verhandl. Natuurl. Gesch., Land- en Volkenkunde*, p. 190, note (1843.—Timor; descr. ♀).

Das Pariser Museum besitzt von der Expedition des Capt. Baudin zwei Exemplare, die folgendermassen bezeichnet sind:

- 1.—"Timor, Exp. Baudin, par Maugé, an 11.
No. 9823. *Lalage timorensis* Müll. *Sylvia leucophaea* Vieill. (Type de Vieillot)" (♀) . Al. 92; caud. 80; r. 12 mm.
- 2.—"Australie, Exp. Baudin, Timor. No. 9821.
Lalage timorensis Müll. *Turdus Sueurii* Vieill.
Type . . . (♂ juv.)" Al. 89; caud. 73; r. 14 mm.

* Die Nomenclatur des Fliegenschnäppers *Erythromyias pyrrhonota* (S. Müll.) wird nach unserer Auffassung dadurch in keiner Weise berührt. Nach den bestehenden Regeln ist *Suzicola pyrrhonota* S. Müll. 1843 durch *Ananthe pyrrhonota* Vieill. 1818 nicht praeoccupiert.

† In Jardine's Naturalist's Library, *Ornith.*, x. (Flycatchers) p. 255 (1838.—"New Holland").

‡ Cf. Pucheran, *Arch. Mus. Paris*, vii. p. 360.

§ *Ind. Ornith.*, Suppl., p. xxxii (1801.—ex "Red-breasted Tody," *Gen. Syn. Birds*, Suppl. ii., p. 147—"Nova Hollandia.")

|| *Myiagra latirostris kempfi* Mathews, *Nov. Zool.* xviii. No. 3, p. 322 (Jan. 1912—Cape York, Queensland).

¶ *A List of the Birds of Australia*, 1913, p. 188.

** Nec *Sylvia leucophaea* Latham, *Ind. Ornith.*, Suppl., p. lv (1801.—"in Nova Hollandia").—Bei Mathews nicht erwähnt.

Der sorgfältige Vergleich dieser Exemplare mit der von Herrn Haniel erbeuteten Serie lässt keinen Zweifel an der Gleichartigkeit von *Sylvia leucophaea* und *Turdus sueurii* mit *L. n. timorensis* bestehen. No. 1 ist ein durchaus normales Weibchen. Wie schon Pucheran (l.c. p. 345) hervorhob, ist Vieillot's Beschreibung fehlerhaft; denn Oberkopf und Mantel sind nicht "gris clair," sondern hell (leicht röstlich) braun, mit verloschenen dunklen Strichen auf Stirn und Scheitel, während sie auf dem Mantel kaum wahrnehmbar sind. Verglichen mit No. 262 aus Bonleo unterscheidet sich der Vogel nur in einigen, unbedeutenden Details, die ohne Weiteres durch Ausbleichen sich erklären lassen. So sind Pileum und Vorderrücken blasser braun, die hellen Abzeichen auf den Flügeln fast weiss (statt rahmgelb); die Unterseite erscheint gleichfalls fast weiss, da der rahmgelbe Anflug nahezu völlig verschwunden ist; die dunklen Querwellen an den Brustseiten sind nur ganz schwach angedeutet. Auch der Oberschnabel ist stark ausgebleicht: gelbbraun (statt schwarz).

Der Typus von *Turdus Sueurii* ist ein jüngerer Vogel und zwar augenscheinlich ein ♂ juv. Er weicht von No. 1 nur durch geringere Grösse, viel deutlichere braune Färbung auf Scheitel und Mantel (ohne Spur dunkler Striche) und den Besitz zahlreicher, schmaler, aber sehr deutlicher, dunkler Querlinien auf der ganzen Brust ab. Hinterrücken und Oberschwanzdeckfedern sind bräunlichgrau (statt rein aschgrau), der Bürzel auf rahmgelblichem Grunde dicht, obwol schmal, dunkel gewellt. Die Flügelabzeichen sind bereits reinweiss wie beim ♂ ad. Schnabel mit Ausnahme der Wurzel der unteren Mandibel braunschwarz.

Die von Vieillot gegebenen Namen haben beide Priorität über *L. timorensis* Müll. Indessen ist *Sylvia leucophaea* Vieill. 1817 durch *S. leucophaea* Lath. 1801 praeoccupiert, weshalb *T. sueurii* als der nächst ältere in Kraft zu treten hat. Unsere Art ist demnach in Zukunft als *LaIage nigra sueurii* (Vieill.) zu bezeichnen.

p. 41 36. **Artamus cinereus cinereus** Vieill. statt
A. perspicillatus Bonap.

Artamus cinereus Vieillot, *Nouv. Dict.* xvii. p. 297 (1817.—Timor): idem, *Tabl. enc. méth. Ornith.*, ii. 1822, p. 758 ("l'individu qui a servi pour cette description, a été apporté de Timor et fait partie . . . de la collection du Muséum d'Histoire Naturelle").

Ocypterus cinereus Valenciennes, *Mém. Mus. d'Hist. Nat. Paris*, vi, 1820, p. 22, tab. 9, fig. 2 (" . . . rapporté de Timor par Maugé").

Artamus perspicillatus Bonaparte, *Consp. Av.* i. p. 344 (1850—Timor).

A. cinereus wurde allgemein auf eine im südwestlichen Australien heimische Art gedeutet, welche sich von der Timor-Form durch längere Flügel, Mangel des weissen Spitzenfleckes auf dem mittleren Steuerfedernpaar, Besitz einer schmalen, schwarzen Stirnbinde, und Ausdehnung der schwarzen Färbung über die vordere Backengegend und obere Kehle unterscheidet. Erst Mathews scheint die Richtigkeit dieser Identifizierung bezweifelt zu haben; denn er gab—freilich ohne jegliche Begründung—der westaustralischen Form den neuen Namen *A. tregellasi*,* wol hauptsächlich deshalb, weil sowol der Beschreiber Vieillot als Valenciennes in seiner Monographie der Gattung *Ocypterus* ausdrücklich Timor als Heimat des *A. cinereus* bezeichnet hatten.

Angesichts der häufigen Fundortsverwechslungen bei den von Maugé gesammelten Objecten erschien eine Nachprüfung des Typus geboten. Leider gelang es

* *Bull. Brit. Orn. Cl.* 27, p. 100 (1911—Rockingham, W. Australien).

mir nicht, denselben während meines Aufenthaltes in Paris aufzufinden, und Freund Ménégau, der die Nachforschungen weiter fortsetzte, schreibt mir unlängst, dass das wertvolle Stück in der Sammlung nicht mehr vorhanden sei. Wir sind somit für die Lösung der Frage auf Vieillots Originalbeschreibung und die von Valenciennes mittgeteilte Kennzeichnung und Abbildung angewiesen. Beide entsprechen hinsichtlich der Farbenverteilung auf dem Kopfe den uns vorliegenden Timor-vögeln, d. h. das Schwarz ist beschränkt auf die Zügelgegend; * der dunklen Stirnbinde (wie sie dem australischen *A. tregellasi* zukommt) geschieht keine Erwähnung. Dagegen könnte die Schwanzzeichnung des *A. cinereus* zu Zweifeln Anlass geben, da Vieillot sowol wie Valenciennes † das Fehlen der weissen Spitze auf dem mittleren Steuerfedernpaar besonders hervorheben, was gerade eines der Hauptmerkmale der westaustralischen Art ausmacht. An einem unserer ♂♂ aus Timor, das sich in ziemlich abgenützte Kleide befindet, ist der weisse Spitzenfleck durch Abreibung bis auf einen feinen Saum gänzlich verschwunden. Ein ähnliches Exemplar dürfte Vieillot als Grundlage für seinen *A. cinereus* gedient haben. Unter diesen Umständen nehmen wir keinen Anstand, den so viel älteren Namen an Stelle von *A. perspicillatus* für die Timor-Form zu gebrauchen. Die australischen Vertreter sind zweifellos Angehörige desselben Formenkreises, der somit folgende sechs Lokalrassen umfasst:

- (a) *A. cinereus cinereus* Vieill., Samau, Timor, Letti, Sermatta.
- (b) *A. cinereus melanops* Gould, Inneres Süd-Australien, N. S. Wales, Victoria.
- (c) *A. cinereus hypoleucus* Sharpe, Queensland.
- (d) *A. cinereus tregellasi* Math., S.W. Australien.
- (e) *A. cinereus venustus* Sharpe, N.W. Australien.
- (f) *A. cinereus florenciae* Ingr., Nördl. Territorium.

p. 46 40. *Philemon buceroides buceroides* (Swains.) statt
Philemon timoriensis timoriensis (S. Müll.).

Philedon buceroides Swainson, *Anim. in Menag.* p. 325 (Jan. 1838—"New Holland, Paris Museum."
 Der Fundort ist unrichtig, der Typus stammt aus *Timor* (Maugé coll.); cfr. Pucheran, *Rev. Mag. Zool.* (2) x. 1858, p. 469).

Tropidonhynchus timoriensis S. Müller, *Verhand. Natuurl. Gesch., Land- en Volkenkunde*, p. 153, note § (1842—Kupang, Timor).

Der Name *buceroïdes* ist bisher allgemein auf einen im nördlichen Queensland beheimateten Meliphagiden angewandt worden. Swainson, der seinen *Philedon buceroides* nach einem im Pariser Museum befindlichen Exemplar aus "New Holland" aufstellte, beschrieb nur die Verteilung der nackten und befiederten Partien auf Oberkopf und Kopfseiten, begleitet von einer ausgezeichneten Skizze des Kopfes, während er die Färbungscharaktere infolge Verlustes seiner Aufzeichnungen über den Typus unerwähnt lassen musste. Die textliche und figurliche Darstellung (l.c. p. 326) lässt aber keinen Zweifel, dass Swainson ein Stück der Timor-Form vorlag; denn es heisst ausdrücklich: "sides of the head as far as the ears, and a spot on each side of the neck naked," was nur auf *P. timoriensis* passt, wogegen bei der bisher *buceroïdes* genannten Art aus Queensland nicht bloss ein Fleck an jeder Halsseite, sondern ein zusammenhängender, über den Hinterhals und die Halsseiten reichender Ring nackt ist. Überdies hat Pucheran (l.c.) bereits festgestellt,

* Vieillot sagt: "une raie noire part des narines, s'étend vers l'œil et l'entoure," und Valenciennes bemerkt ganz übereinstimmend: "La tête est grise, avec une tache noire entre l'œil et la base de la mandibule supérieure."

† Es heisst dort: "les deux plumes intermédiaires seules sont entièrement noires."

dass der Typus von *P. buceroides* aus Timor (Maugé) und **nicht** aus Australien stammt, und seine Identität mit *T. timoriensis* als wahrscheinlich vermutet. Ferner ist es für jeden, der nur einigermaßen mit der Erforschungsgeschichte des östlichen Archipels vertraut ist, eine bekannte Tatsache, dass die Expedition Baudin, der Maugé als Naturforscher angehörte, die von *P. buceroides* bewohnten Gebiete (Queensland) gar nicht berührt* hat. Trotzdem bringt es Mathews † fertig, als Terra typica von *P. buceroides* kurzweg "Cairns, Queensland" anzugeben! Der Name *P. buceroides* hat also an Stelle von *P. timoriensis* zu treten, und die drei von mir unterschiedenen Formen heissen demnach :

- (a) *Philemon buceroides buceroides* (Swains.) Timor, Samau, Savu.
- (b) *Philemon buceroides pallidiceps* Hellm., Wetter.
- (c) *Philemon buceroides neglectus* (Büttik.), Lombok, Sumbawa, Sumba, Flores, Pantar, Alor.

Der queensländischen Art, *P. buceroides* auct. nec Swains., dagegen kommt als ältester Species-name

Philemon yorkei Math. ‡

zu, während die nahe verwandte Repräsentativform der Melville Insel als *Philemon yorkei gordonii* Math. zu bezeichnen ist.

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44. *Stigmatops flavicans* (Vieill.) statt
S. maculata (Temm.)

Melithreptus flavicans Vieillot, *Nouv. Dict.* xiv. p. 325 (1817.—"Nouvelle Hollande," errore!) : idem, *Tabl. encycl. méth.* ii. 1822, p. 604 (type au Muséum d'Histoire naturelle); Pucheran, *Arch. Mus. Paris*, vii. 1855, p. 349 (crit. = *Meliphaga maculata* Temm.).

Meliphaga maculata Temminck, *Rec. Pl. col.*, livr. 5, tab. 29, fig. 1 (1820.—"l'Océanie," type im Pariser Museum, Voyage Baudin, sc. Timor, coll. Péron).

Wie Pucheran feststellte, ist der Typus von *M. flavicans* durch Péron und Lesueur gesammelt worden. Das Original, das ich im Pariser Museum untersuchte, ist ohne Zweifel dasselbe Exemplar, das auch der Beschreibung von *Meliphaga maculata* Temm. als Grundlage gedient hatte. Der in ziemlich schlechtem Erhaltungszustand befindliche Vogel stimmt nach Grösse und Färbung mit den von Herrn C. Haniel mitgebrachten ♂♂ überein. Die Kennzeichnung Vieillot's lässt übrigens an Deutlichkeit nichts zu wünschen übrig und hätte zur Identifizierung der Art genügen müssen, wenn nicht die falsche Fundortsangabe "Nouvelle Hollande" irregeführt hätte. Jedenfalls stammt also der Typus von *M. flavicans* und *M. maculata* wie so manche andere von der Expedition Baudin erbeutete Art nicht aus Australien, sondern aus Timor. Dem Prioritätsgesetz zufolge muss dieser schöne Meliphagide mithin *Stigmatops flavicans* (Vieill.) heissen. §

* Wie aus Péron's zweibändigem Werke (siehe *Avifauna von Timor*, p. 2, Note 1) hervorgeht, wurde an folgenden Lokalitäten gesammelt: in Südwestaustralien in der "Terre de Leeuwin"; in Westaustralien in der Gegend der Shark's Bai; in Südaustralien im Nuyt's Archipel, sowie um den St. Vincent und Spencer Golf; in N. S. Wales bei Port Jackson (vor Sydney), endlich auf den Inseln King, Decrès und Tasmania.

† *A List of the Birds of Australia*, 1913, p. 292.

‡ *Philemon buceroides yorkei* Mathews, *Austr. Av. Rec.* i. No. 4, p. 102 (Sept. 1912.—Cape York, Queensland).

§ Infolge eines unerklärlichen Missverständnisses behauptet Mathews (*Austr. Av. Record*, ii. No. 5, Sept. 1914, p. 104), dass *Melithreptus flavicans* Vieill. = *Meliphaga reticulata* Temm. sei, während Pucheran doch gerade seine Gleichartigkeit mit *M. maculata* nachgewiesen hatte!

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49. *Dicaeum maugei maugei* Less. statt
D. macklotii macklotii Temm.

Dicaeum Maugei Lesson, *Traité d'Orn.*, livr. 4, p. 303 (Sept. 1830.—Timor, coll. Mauge; descr. ♀); Pucheran, *Rev. Zool.* ix. 1846, p. 134–135 (crit.).

Dicaeum Macklotii Temminck, *Rec. Pl. Col.*, livr. 98, Text, ohne Tafel (1835.—Timor; descr. ♂).

Der im Pariser Museum aufbewahrte Typus trägt die Bezeichnung :

“No. 10423 Timor, par M. Mauge, *Dicaeum maugei* Less. Type” Al. 52; caud. [defekt]; rostr. 9 mm.

Das Stück befindet sich in sehr schlechtem Zustand. Vom Schwanz ist nur mehr eine Feder vorhanden, der Unterschnabel fehlt vollständig. Die obere Mandibel hat die ganze Hornscheide verloren und zeigt infolgedessen eine blassgelbbraune Färbung, was Lesson zu der Angabe “bec aurore” verleitete. Auf die Mangelhaftigkeit der Originalbeschreibung hat bereits Pucheran hingewiesen, und es ist nicht zu verwundern, dass die Auflösung des *D. maugei* bisher nicht glückte. Pucheran, der eine ausreichende Kennzeichnung des Typus gab, identifizierte ihn mit dem Weibchen von *Nectarinia rubra-cana* Temm. [= *Dicaeum flammeum* (Sparrm.)], die nur für die Inseln Java, Madura, Kangean und Bali nachgewiesen ist. Mehrere Exemplare dieser Art aus Java unterscheiden sich jedoch sehr auffallend durch viel schmalere, apikalwärts viel stärker zusammengedrückten Schnabel, kürzere Flügel und bedeutend hellere Oberteile. Dagegen finde ich beim Typus von *D. maugei* eine vollständige Übereinstimmung in den strukturellen Merkmalen, namentlich in der Form und Stärke des Schnabels mit der von Herrn C. B. Haniel mitgebrachten Serie des *D. m. macklotii*. Der Typus ist ein Vogel in weiblichem Kleide, d. h. mit brauner (nicht glänzend schwarzer) Oberseite, und hell scharlachrotem Bürzel. Die Federn des Scheitels und Vorderrückens zeigen ungefähr dieselbe Nüance wie bei No. 143 (♀) aus Lelogama, sind nur etwas ausgebleicht; die Unterseite ist reinweiss, mit schwachem, graulichen Anflug an den Vorderbrustseiten, genau wie bei No. 143; Achselfedern, Unterflügeldecken und Innensaum der Schwingen reinweiss. Backen-, Wangen-, und Ohrgegend sind fahlbraun (statt russgrau), auch der Hinterkopf ist mit ähnlich gefärbten Federn bedeckt, von denen man einzelne auch auf dem Mittelrücken bemerkt. Diese fahlbraunen Federn, welche Lesson etwas übertrieben mit “roussâtre” bezeichnet, sind augenscheinlich Reste des Jugendkleides. *D. maugei* ist ohne Zweifel auf einen jungen Vogel des *D. macklotii* begründet und hat um mehrere Jahre die Priorität. Die Nomenklatur der Angehörigen dieses Formenkreises ist dementsprechend zu ändern in:

1. *D. maugei maugei* Less., Savu, Samau, Timor.
2. *D. maugei neglectum* Hart., Lombok.
3. *D. maugei romae*, Hart., Roma.
4. *D. maugei salvadorii* A. B. Meyer, Babber, Moa.

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62. *Petrochelidon nigricans timoriensis* Sharpe

Im Pariser Museum untersuchte ich das Original von *Hirundo nigricans* Vieill. Es ist ein alter, ausgefärbter Vogel mit der Bezeichnung :

“Asie australe, Timor. Exped. Baudin, M. Mauge, an 11. No. 11007, *Petrochelidon nigricans* Vieill. Type” und misst Al. 106; c. 54; rostr. 6½ mm.*

* Auf den Typus bezieht sich auch die Stelle: *Hirundo nigricans* Lesson, *Traité d'Orn.*, livr. 4, Sept. 1830, p. 270 (“Timor”; errore).

Verglichen mit unserem Exemplar aus Lelogama unterscheidet er sich durch viel längere Flügel, merklich grösseren Schnabel, reinweisse Unterschwanzdecken (nicht graubraun im Zentrum) und viel blasser braune (statt schwarzbraune) Striche auf Kehle und Gurgel, die nicht über die Brust ausgedehnt sind. Dagegen stimmt der Vogel mit mehreren Bälgen aus New South Wales durchaus überein; er stammt also ohne Zweifel aus Australien, nicht aus Timor.

Der Speciesname *nigricans* ist demnach für die australische Festlandsform beizubehalten.

p. 65. 65. *Collocalia fuciphaga micans* Stres. statt
 C. fuciphaga (Thunb.) subsp.

Collocalia fuciphaga micans Stresemann, *Verhandl. Orn. Ges. Bayern*, xii. 1, p. 6 (1914.—Savu).

Stresemann hat die von mir als "*C. fuciphaga* (Thunb.) subsp." aufgeführte Salaugane nenerdings unter obigem Namen abgetrennt. Von der auf Java und Sumatra heimischen, typischen Form weicht sie durch hellere, silberig überlaufene Unterseite, lichtere Ohrdecken und geringere Grösse ab. Ihre Verbreitung erstreckt sich über die Inseln Sumba, Savu, Timor und Celebes.

p. 103 120. *Poliolimnas cinerea* (Vieill.) subsp.

Nach Stresemann* dürften die Timor-Vögel zu der australischen Form *P. cinerea leucophrys* (Gould) gehören. Immerhin erscheint eine sorgfältige Nachprüfung der im British Museum befindlichen Exemplare angebracht, ehe die Frage als endgültig geklärt betrachtet werden kann.

p. 110 Hinzuzufügen

141. ***Sula dactylatra personata*** Gould.

[*Sula dactylatra* Lesson, *Traité d'Orn.* p. 601 (1831.—Ascension).]

Sula personata Gould, *Proc. Zool. Soc. Lond.* xiv. p. 21 (Mai 1846—"North and North-east Coast of Australia"); Cabanis & Reichenow, *Journ. f. Ornith.* xxiv. 1876, p. 329 (Timor).

Ein alter und ein junger Vogel wurden von Dr. Hüsker auf der Reise der *Gazelle* an der Küste von Timor gesammelt. Obwol es sich bei dieser Art um einen ausgesprochenen Meeresbewohner handelt, wollte ich sie der Vollständigkeit halber doch nicht unerwähnt lassen.

NACHTRÄGE ZUM VERZEICHNIS DER IRRTÜMLICH FÜR TIMOR ANGEgebenEN VOGELARTEN.

Die in den nachstehenden Zeilen besprochenen Arten stammen zum grössten Teile von der Expedition Baudin. Die Originale dazu befinden sich im Pariser Museum. Einige in anderen Schriften verzeichnete Formen habe ich gleichfalls kurz berücksichtigt. Es ist möglich, dass mir noch die eine oder andere Angabe in der Literatur entgangen sein möchte, doch dürften diese Auslassungen nicht sehr zahlreich sein.

* *Nov. Zool.* xxi. 1914, p. 54.

Acanthiza pusilla pusilla (Vieill.)

Motacilla pusilla White, *Journ. Voyage New South Wales*, p. 257 (1790—N. S. Wales).

Mahurus maculatus Vieillot, *Nouv. Dict.* xx. p. 215 (1818.—“Nouvelle Hollande”); idem, *Tabl. enc. méth., Ornith.* ii. 1820, p. 495 (type au “Muséum d’Histoire Naturelle”); Pucheran, *Rev. Mag. Zool.* (2) x. 1858, p. 466 (crit., = *Saxicola macularia*, Quoy & Gaim.; Fundort: Timor (Maugé) richtig gestellt).

Das Original von *M. maculatus* im Pariser Museum trägt, laut Pucheran, die irrtümliche Fundortsbezeichnung “Timor (Maugé),” obwohl Vieillot beidemale richtig “Nouvelle Hollande” angab. Wie in so vielen anderen Fällen ist auch bei diesem von der Expedition Baudin stammenden Vogel das Habitat verwechselt worden.

Pucheran (l.c.) identifizierte *M. maculatus* mit *Saxicola macularia* Quoy & Gaim.,* wogegen Mathews † den Namen als Synonym von *A. p. pusilla* betrachtet, eine Auffassung, der wir uns umso eher anschliessen möchten, als der Typus aller Wahrscheinlichkeit nach aus Neu Süd Wales (Gegend von Port Jackson bei Sydney) gekommen sein dürfte, wo nur *A. p. pusilla* lebt.

Jedenfalls aber ist die Art aus der Fauna Timors zu streichen.

Petroica cucullata cucullata (Lath.)

Muscicapa cucullata Latham, *Ind. Orn., Suppl.*, p. li (1801.—ex “Hooded Flycatcher,” Latham, *Gen. Syn. Suppl.* ii. p. 223: New South Wales).

Enanthe pectoralis Vieillot, *Nouv. Dict.* xxi. p. 436 (1818.—“Timor”).

Petroica bicolor (Vig. & Horsf.) 1826.

Der im Pariser Museum aufbewahrte Typus der Vieillot’schen Art trägt die Aufschrift: “115. *Petroeca pectoralis* Vieill., Exped. Baudin, Timor.” Auf dem Postament finden wir die Notiz: “Australie (Timor). Le Naturaliste, Expéd. Baudin, an 11, par Maugé, *P. pectoralis* Vieill. Type, No. 8988.”

Es ist ein altes ♂ der *P. bicolor* auct., wie bereits der verstorbene E. Oustalet erkannt hatte, und misst: al 97; caud. 70; rostr. 13 mm. Der Vogel stimmt in Grösse und Färbung mit zwei ♂♂ ad. aus Südaustralien überein.‡ Namentlich zeigt der weisse Saum auf der Aussenfahne des seitlichen Steuerfedernpaares dieselbe geringe Ausdehnung, indem er nur um 8–9 mm. über das Vorderende der weissen Schwanzbasis hinausragt, während er bei der nahe verwandten *P. cucullata picata* (Gould) bis an die Spitze der Aussenfahne reicht. Dem Typus, der in etwas abgetragener Kleide steht, fehlt der feine, weisse Spitzensaum an den Steuerfedern, welcher bei den zwei anderen Exemplaren gut ausgeprägt ist.

Das Original von *O. pectoralis* ist also jedenfalls australischer Herkunft, und die Angabe “Timor” dürfte auf einer späteren Fundortsverwechslung beruhen. Bei Mathews, § der die Art *Melanodryas cucullata* (Lath.) nennt, fehlt das Synonym *pectoralis* Vieill. Aus der Avifauna Timor’s ist *Petroica c. cucullata* mithin zu streichen.

* *Voyage de l’Astrolabe, Zoologie*, i. p. 199, tab. 10 fig. 3 (1830—“le port Western, à la Nouvelle Hollande” = Western Port, Victoria).

† *A List of the Birds of Australia*, 1913, p. 213.

‡ Ihre Flügelänge beträgt 92, 97, die Schwanzlänge 66, 72 mm.

§ *List of Birds of Australia*, 1913, p. 169.

Rhipidura tricolor tricolor (Vieill.)

Muscicapa tricolor Vieillot, *Nov. Dict.* xxi. p. 490 (1818.—“Timor” * errore! patr. subst. Sydney, N. S. Wales; cfr. Stresemann, *Nov. Zool.* xxi. 1914, p. 130).

Der Typus des Pariser Museums trägt auf der Etikette den Vermerk:

“Timor, Expédition Bandin, an 11, *Rhipidura tricolor* (Vieill.). Type”. . . . Al. 100; caud. 102; rostr. 18 mm.

Ich habe ihn gemeinsam mit Herrn E. Stresemann sorgfältig verglichen, und mit Stücken aus New South Wales übereinstimmend gefunden. Stresemann (i. e.) hat über den Befund bereits berichtet, so dass ich darauf weiter nicht einzugehen brauche. Auch in diesem Falle unterliegt es keinem Zweifel, dass das Original aus Australien, und nicht aus Timor stammt. *Rh. t. tricolor* ist somit aus der Avifauna der Insel zu eliminieren.

Philentoma velatum (Temm.)

Dryophila velata Temminck, *Rec. Pl. Col.*, livr. 56, tab. 334 (1825.—“dans l'île de Timor . . . et dans celle de Java”).

Es ist ohne Zweifel irrtümlich, wenn Temminck in der Originalbeschreibung behauptet: “on trouve cette espèce dans l'île de Timor.” Vielmehr ist diese Art in neuerer Zeit nur im südlichen Teile der Malakka Halbinsel, sowie auf den Inseln Sumatra, Java, Borneo, etc., festgestellt worden. Aus der Fauna Timor's ist sie zu streichen.

Myiagra cyanoleuca (Vieill.)

Platyrrhynchos cyanoleucus Vieillot, *Nov. Dict.* xxvii. p. 11 (1818.—“Timor, coll. Maugé,” Muséum d'Hist. Nat. Paris; descr. ♂ ♀); Pucheran, *Arch. Mus. Paris*, vii. p. 358 (crit.).

Myiagra nitida Gould, *Proc. Zool. Soc. Lond.* v. 1837, p. 142 (Dec. 1838.—“in Novâ Cambriâ Australi et terra Van Diemen”).

Wie Pucheran ausgeführt hat, gehören die zwei im Pariser Museum aufbewahrten Originale von *P. cyanoleucus* zu der von Gould später als *M. nitida* beschriebenen Art, welche somit den älteren Speciesnamen Vieillot's zu tragen hat. Die Angabe, dass die Typen aus Timor stammen, ist irrtümlich, da dieser Fliegenfänger auf der Insel gar nicht vorkommt. Vermutlich wurden sie in der Gegend von Port Jackson (bei Sydney), wo das Expeditionsschiff *Le Naturaliste* vom 20. Juni bis 18. November 1802 vor Anker lag, erbeutet und erst später in Paris mit der unrichtigen Bezeichnung “Timor” versehen.

Aus der Fauna Timor's ist *M. cyanoleuca* zu streichen.

Eopsaltria australis australis (White)

Motacilla australis White, *Journal Voy. New South Wales*, p. 239 (1790.—New South Wales).

Muscicapa griseicapilla Vieillot, *Nov. Dict.* xxi. p. 489 (1818.—“Timor,” errore!); Pucheran, *Arch. Mus. Paris*, vii. 1855, p. 356 (crit.).

Das Pariser Museum besitzt einen Vogel mit der Etikettierung:

“Australie, M. Maugé, an 11, No. 193.

Eopsaltria australis Lath.—No. 9478”. . . Al. 87; caud. 71; rostr. 13½ mm.

* Im Citat dieser Bücherstelle gibt Mathews (*List of Birds of Australia*, 1913, p. 187) als terra typica einfach “New South Wales” an. Gegen diese Art des Citierens muss man denn doch energischen Protest einlegen.

Er entspricht sehr gut der Beschreibung Vieillot's und ist ohne Zweifel das Original zu *Muscicapa griseicapilla* Vieill. Pucheran hatte diese Art zuerst * mit *Eopsaltria gularis* (Quoy & Gaim.) †, aus Westaustralien, identifiziert, korrigierte aber drei Jahre später ‡ diese anfängliche Bestimmung, indem er *M. griseicapilla* auf *Eopsaltria australis* bezog, *E. gularis* hingegen für eine verschiedene Art erklärte und ihre Gleichartigkeit mit *Eopsaltria griseogularis* Gould § hervorhob. ||

Nach eingehender Untersuchung des Typus mit Exemplaren dieses Würgers auf verschiedenen Teilen Australiens bin ich zu dem Resultat gekommen, dass Pucheran's spätere Deutung durchaus richtig, und der Typus von *M. griseicapilla* ein ♂ ad. der in der Gegend von Sydney, N. S. Wales heimischen Form, d. h. gleichbedeutend mit *E. a. australis* ist. Der Typus stimmt mit einem Exemplar in der Sammlung Boucard aus dem östlichen Australien, coll. Waller, vollständig überein. Bei beiden sind Backen und Ohrgegend ausgesprochen aschgrau, die Oberschwanzdecken wie der Bürzel matt gelblichgrün.

Sieben Bälge aus Queensland, die augenscheinlich zu *E. australis chryso-rhos* Gould ¶ gehören, unterscheiden sich sehr auffallend durch weissliche Kopfseiten und lebhaft safrangelbe Oberschwanzdecken, die sich scharf von dem matten Olivengrün des Hinterrückens abheben.

Auch bei *M. griseicapilla* liegt zweifellos eine falsche Fundortsangabe vor. Der Typus kam sicher nicht aus Timor, sondern wol aus Port Jackson bei Sydney, wo die Corvette *Le Naturaliste* längeren Aufenthalt nahm.

Aus der Fauna Timor's ist *Eopsaltria a. australis* zu streichen.

Lalage aurea (Temm.)

Ceblephyris aurea Temminck, *Rec. Pl. Col.*, livr. 64, tab. 382, fig. 2 (Dec. 1825.—"l'île de Timor," coll. Reinwardt).

Temminck beschrieb die Art nach zwei männlichen Exemplaren, die Reinwardt angeblich in den Gebirgen von Timor gesammelt hatte. Hartert ** wies bereits auf das Irrtümliche dieser Angabe hin. *L. aurea* ist lediglich ein Bewohner der Molukken (Batjan, Gilolo, Ternate, etc.).

Aus der Fauna von Timor ist sie zu eliminieren.

Climacteris picumnus Temm.

Climacteris picumnus Temminck, *Rec. Pl. Col.*, livr. 47, tab. 281, fig. 1 (1824.—"à Timor, à Celebes et la côte septentrionale de la Nouvelle Hollande").

Temminck's Angabe, dass diese Art auch auf Timor vorkomme, entbehrt jeglicher Grundlage. Sie lebt ausschliesslich in Australien. Mathews unterscheidet drei geographische Formen, die indessen nur unscharf gekennzeichnet zu sein scheinen.

* *Arch. Mus. Paris*, vii, p. 356.

† *Muscicapa gularis* Quoy et Gaimard, *Voyage de l'Astrolabe*, Zool. i. p. 176, tab. 4, fig. 1 (1830.—"port du Roi-Georges," West Australien).

‡ *Rev. Mag. Zool.* (2) x, 1858, p. 469.

§ *Syn. Birds Austr.*, Part iv. App., p. 2 (1838.—Swan River, West Australia).

|| Diese Richtigstellung Pucheran's scheint Mathews vollständig entgangen zu sein. Sonst hätte er unmöglich (siehe *Austr. Av. Rec.* ii. No. 5, p. 94) den Namen *griseicapilla* Vieill. an Stelle von *E. griseogularis* in Vorschlag bringen können!

¶ *Eopsaltria chryso-rhos* Gould, *Ann. Mag. N. H.* (4) iv. p. 109 (1869.—"eastern part of N. S. Wales and the southern portion of Queensland").

** *Nouv. Zool.* x, 1903, p. 54.

Artamus cyanopterus (Lath.)

Loxia cyanoptera Latham, *Ind. Ornith., Suppl.*, p. xlvi (1801.—“in Novâ Wallia Australi”).

Ocypterus albo-vittatus Valenciennes, *Mém. Mus. d'Hist. Nat.* vi. p. 23, tab. 8, fig. 1 (ad.) 2 (juv.) (1820.—“à Timor d'où elle a été rapportée au Muséum par M. Maugé”).*

Artamus sordidus Hartert, *Kat. Vogels. Mus. Senckenb. Ges. Frankfurt*, p. 78 (Timor).

Die Heimatsangabe “Timor” für *O. albo-vittatus* Val. ist natürlich ebenso sicher auf einen Irrtum zurückzuführen wie bei so vielen anderen von der Expedition Baudin herstammenden Exemplaren. Sie wurde übrigens schon von Lesson † in “la Nouvelle-Galles du Sud” korrigiert. Die Zuverlässigkeit des Fundortes an dem im Frankfurter Museum aufbewahrten Stücke hat Hartert selbst bereits angezweifelt.

A. cyanopterus bewohnt nur das östliche und südwestliche Australien.

Aus der Avifauna Timors ist die Art zu streichen.

Oriolus sagittatus sagittatus (Lath.)

Coracias Sagittata Latham, *Ind. Orn. Suppl.*, p. xxvi (1801.—“in Novâ Wallia Australi.”)

Oriolus variegatus (nec Bechstein 1811) Vieillot, *Nouv. Dict.* xviii. p. 196 (1817.—“Nouvelle Hollande”); Lesson, *Traité d'Orn.* p. 405 (“Timor, Maugé”); Pucheran, *Arch. Mus. Paris*, vii. p. 339 (crit., “Timor”).

Vieillot's Beschreibung geht ohne Zweifel auf die australische Art, wie schon Pucheran (l.c.) durch Nachprüfen der Typen festgestellt hat. Die Heimatsangabe “Timor” an den zwei Exemplaren des Pariser Museums beruht sicher auf einer Fundortsverwechslung. Auf Timor kommt nur *Oriolus viridifuscus* vor.

Certhionyx variegatus Less.

Certhionyx variegatus Lesson, *Traité d'Orn.* livr. 4, p. 306 (Sept. 1830.—“Timor (Lesueur)” — errore !); Pucheran, *Rev. Mag. Zool.* (2) v. 1853, p. 488 (crit.).

Der im Pariser Museum befindliche, von Lesueur angeblich auf Timor gesammelte Typus stimmt in jeder Hinsicht mit Stücken aus Südwestaustralien überein. Wie schon Pucheran nachgewiesen hat, ist *C. variegatus* gleichbedeutend mit *Melicophila picata* Gould, ‡ einer Art, die nur die westlichen Teile des australischen Kontinents bewohnt. Die Fundortsangabe “Timor” hat zweifellos in einer Etikettenverwechslung ihren Ursprung.

C. variegatus ist aus der Avifauna Timors zu streichen.

Cinnyris leucogaster Vieill.

Cinnyris leucogaster Vieillot, *Nouv. Dict.* xxxi. p. 514 (1819.—“Timor, où l'a trouvé le naturaliste Maugé,” — errore !)

Cinnyris thoracicus Lesson, *Traité d'Orn.*, livr. 4, p. 297 (Sept. 1830.—“Timor (Maugé),” — errore !)

Der Typus im Pariser Museum ist folgendermassen bezeichnet:

“Timor [ausgestrichen], par M. Maugé. *Cinnyris*

leucogaster Vieill. Type, *C. thoracicus* Less.

Type. Afrique ♂ ad. No. 10532 ” . . . Al. 50; caud. 34; r. 15 mm.

* Mathews (*A List of the Birds of Australia*, 1913, p. 236) gibt für *Ocypterus albo-vittatus* Val. als Heimat “New South Wales” an, scheint die Originalbeschreibung also nicht gelesen zu haben!

† *Traité d'Ornith.* p. 371, tab. 44, fig. 2.

‡ *Birds of Australia* iv., tab. 49 (1844.—“from South Australia and from Swan River”).

Dies ist in der Tat eine afrikanische *Cinnyris*-art. Wie Pucheran* ausgeführt hat, beruhen *C. leucogaster* und *C. thoracicus* auf einem und demselben Exemplar, obwol die Beschreibungen in mehreren Punkten von einander abweichen. Während Vieillot die Färbung der Brust als "bleu d'acier poli," die des Abdomens als "blanc" bezeichnet, heisst es bei Lesson "ceinture rouge, † puis noire; deux taches jaune d'or, bas-ventre grisâtre, le milieu jaune clair." Das Original entspricht übrigens im Wesentlichen der Kennzeichnung im "Nouveau Dictionnaire," nur hat Vieillot (dessen Diagnosen ja bekanntermassen häufig recht ungenau sind) die Achselbüschel ignoriert, ferner vergessen zu erwähnen, dass der **Vorderscheitel** (bis oberhalb der Augenmitte) **metallisch violettblau** gefärbt ist. Die Angabe "ventre blanc" ist gleichfalls irreführend, der Bauch ist nur ausgebleicht und war, wie man noch an den hie und da sichtbaren Resten sehen kann, ursprünglich blassgelb.

Bisher hat man (cfr. Reichenow, *Vögel Afrikas* iii. p. 471) *C. leucogaster* und *C. thoracicus* mit *Cinnyris talatala* A. Smith ‡ identifiziert. Dies ist nicht zutreffend, denn der Typus gehört unzweifelhaft zu *C. venusta* (Shaw & Nodder) 1799, und stimmt sehr gut mit einem ♂ ad. aus Cap Vert, Sénégal, coll. Léon Laglaize, im Pariser Museum bis auf einige durch Verbleichen erklärliche Abweichungen überein.

Die seitlichen Brustbüschel sind **orangerot** (nicht blassgelb wie bei *C. talatala*), der Vorderscheitel ist violettblau, scharf abgesetzt gegen das Metallischgrün des Rückens (während bei *C. talatala* Stirn, Scheitel und Rücken gleichmässig goldiggrün erscheinen), u. s. w.

Beide oben angeführte Namen werden also Synonyme von *C. venusta*, wogegen der südafrikanischen, bisher *C. leucogaster* genannten Art die Bezeichnung *C. talatala* zukommt.

Die Fundortsangabe Timor ist natürlich auf eine nachträgliche Etikettenverwechslung zurückzuführen.

Munia maja (Linn.)

"*Loxia maja* Gm." Lesson, *Traité d'Orn.* p. 445 ("de Java, de Timor").

Dieser Weberfink kommt in Timor nicht vor. Seine Heimat sind die Inseln Sumatra, Java, Bali und das Festland von Malakka.

Motacilla flavescens Steph.

Motacilla flavescens Stephens, in Shaw, *Gen. Zool.* 10. ii. p. 559 (1817.—ex Latham et Montbeillard: Timor).

Dieser Name, der vielfach als Synonym von *M. flava flava* Linn. betrachtet wurde, lässt sich, wie Hartert § auseinandergesetzt hat, nicht mit völliger Sicherheit deuten, obwol er sich möglicherweise auf *M. flava taiwana* (Swinh.) beziehen könnte. Wallace erbeutete auf Timor die in Kamtschatka brütende *M. f. simillima* Hart. ||

* *Rev. Mag. Zool.* (2) v., 1853, p. 487-8.

† Ein übertriebener Ausdruck für den rötlichvioletten Kropf von *C. venusta*!

‡ *Report Exp. Expl. Central Africa*, p. 53 (1836.—"the country between the Orange River and Kurrichaine").

§ *Vög. paläarkt. Fauna*, i. p. 293.

|| Siehe Hellmayr, *Avifauna von Timor*, p. 63.

Cuculus pallidus pallidus (Lath.).

Columba pallida Latham, *Ind. Orn., Suppl.*, p. lx (1801.—“in Nova Hollandia”).

Cuculus variegatus (nec Scopoli 1786) Vieillot, *Nouv. Dict.* viii. p. 224 (1817.—“l’Australasie”); Pucheran, *Rev. Mag. Zool.* (2) iv. 1852. p. 556 (crit.: “deux spécimens indiqués comme originaires de Timor (Maugé)”).

Im Pariser Museum stehen zwei Exemplare, etikettiert wie folgt:

- (1) Adult: “Timor, M. Maugé. No. 1954.
Cac. pallidus Lath. *C. variegatus* Vieill.
 Type.” Al. 190; caud. 160; rostr. 23 mm.
- (2) Juv.: “No. 1956. Timor, M. Maugé.
Cac. pallidus Lath.” Al. 184; caud. 170; r. [defekt] mm.

Das erstgenannte Stück, im ausgefärbten Alterskleid, entspricht in jeder Hinsicht australischen Bälgen in Boucard’s Sammlung. No. 2 ist ein junger Vogel im gefleckten Kleide. Es scheint mehr als zweifelhaft, ob diese Kuckucksart jemals ausserhalb Australiens vorgekommen ist. Vieillot gab ursprünglich “Australie” als Heimat an. Für ihr Vorkommen auf Timor steht jedenfalls der Beweis aus.

Cuculus sonneratii Lath.

Shelley, *Cat. Birds Brit. Mus.* xix. 1891, p. 265 (sp. d³: Imm., Timor).

Der junge Vogel aus der Collection Tweeddale im British Museum trägt ohne Zweifel eine falsche Fundortsangabe, vorausgesetzt dass er nicht zu einer anderen Art gehört. Junge Stücke der östlichen Kuckucksarten sind ja nicht immer mit Sicherheit zu identifizieren.

Alcedo coerulescens (Vieill.)

Alcedo coerulescens Vieillot, *Nouv. Dict.* xix. p. 401 (1818.—“dans l’île de Timor”); idem, *Tabl. enc. méth. Ornith.*, livr. 89, p. 394 (1820.—“dans l’île de Timor, et fait partie de la collection du Muséum d’Hist. Nat.”); Pucheran, *Rev. Mag. Zool.* (2) v. 1853, p. 389 (crit.; *Alcedo birú* Horsf. 1821).

Alcedo beryllina Vieillot, *Nouv. Dict.* xix. p. 414 (1818.—Java).

Auch diese Eisvogel-art kommt auf Timor nicht vor. Ihre Heimat sind die Inseln Java, Kangean, Bali und Lombok. Vieillot’s Angabe beruht ohne Zweifel auf Irrtum.

Bezüglich der Nomenclatur dieser Art vgl. Laubmann, *Ornith. Monatsber.* 24, 1916, pp. 6–7.

Alcyone azurea azurea (Lath.)

Alcedo azurea Latham, *Ind. Orn. Suppl.*, p. xxxii (1801.—“in insula Norfolk, Maris Pacifici” *,—errore!)

Ceyx cyanea Lesson, *Traité d’Ornith.*, livr. 4, p. 241 (Sept. 1830.—“Timor (Maugé)”—errore!)

Wie in so vielen anderen Fällen ist auch bei diesem von den Naturforschern der Expedition Baudin heimgebrachten Exemplar nachträglich der Fundort verwechselt worden. *A. a. azurea* kommt nicht in Timor, sondern nur in den östlichen Teilen des australischen Kontinents vor.

* Nicht “New South Wales,” wie Mathews (*Nov. Zool.* xviii. p. 285 und *List Birds Austr.* 1913, p. 145) irrtümlich angibt!

Eutelipsitta chlorolepidota (Kuhl)

Psittacus chlorolepidotus Kuhl, *Nov. Act. Phys.-med. Acad. Caes. Leop. Carol.* 10, i. p. 48 (1820.—“Nova Hollandia”).

Australasia viridis Lesson, *Traité d'Orn.*, livr. 3, p. 210 (Juli 1830.—“Timor (?)”); Pucheran, *Rev. Mag. Zool.* (2), v. 1853, p. 159 (crit.).

Pucheran (l.c.) hat ausgeführt, dass der Typus keineswegs aus Timor stammt, sondern von Quoy und Gaimard gelegentlich der Reise der *Uranie* in Australien (“Nouvelle Hollande”) erbeutet wurde. Ich habe ihn gleichfalls untersucht und fand Pucheran's Identifizierung mit *E. chlorolepidota* durchaus zutreffend.

E. chlorolepidota ist aus der Fauna Timors zu streichen.

Geopelia cuneata (Lath.)

Cabanis & Reichenow, *Journ. f. Orn.* xxiv. 1876, p. 325 (“Timor”).

Das von der Reise der *Gazelle* stammende, in Weingeist konservierte Exemplar war zweifellos falsch etikettiert, wenn nicht etwa ein Bestimmungsfehler vorliegt.

G. cuneata bewohnt nur Australien.

Phalacrocorax fuscescens (Vieill.)

Hydrocorax fuscescens Vieillot, *Nouv. Dict.* viii. p. 86 (1817.—“l'Australasie”); Pucheran, *Rev. Mag. Zool.* (2) ii. 1850, p. 625 (crit.; der Typus soll von Péron und Lesueur in Timor gesammelt worden sein).

Der Typus, ein Vogel im Jugendkleid, ist irrtümlich als aus Timor stammend etikettiert worden. Pucheran hatte ihn mit dem neuseeländischen *Phalacrocorax varius* (Gm.) identifiziert, worin ihm alle späteren Autoren folgten. Mathews* hat jedoch überzeugend nachgewiesen, dass es sich um einen jungen Vogel der von Salvadori später als *P. gouldi* † beschriebenen Form handelt, welche Teile Australiens und Tasmaniens bewohnt.

P. fuscescens hat aus der Liste der Vögel Timors auszuscheiden.

* *Austral Avian Record*, ii. No. 1, 1913, pp. 6, 7.

† *Cat. B. Brit. Mus.* xxvi. p. 396 (1898.—Neu Süd Wales, Tasmania).

ERRORS IN QUOTATIONS.

BY ERNST HARTERT, PH.D.

IT is the habit of ornithological writers to adorn their articles with lists of synonyms and quotations. If these quotations are looked up in the original works, and the descriptions read, considered and verified, then, of course, this is very useful; but if they are copied from other works this should be stated. This being neglected, they serve no other purpose than to make an article appear more scientific and learned, and thus to throw sand into the eyes of the readers. The work from which most quotations are copied without verification is the *Catalogue of Birds*, while African students seem to copy from Reichenow's *Vögel Afrikas*. Neither of these works is, of course, free from errors, and thus mistakes are continually perpetrated and will never cease.

Sharpe's volumes of the *Cat. B.* are perhaps better compiled, and contain less numerous wrong quotations than most of the other volumes; but in vol. xxiv. they are, curious to say, very frequent indeed.

Merely to show the danger of copying these quotations without verification, I will mention some I came across incidentally when compiling the synonymies for the forthcoming part of my *Vög. d. pal. Fauna*. I hope it will be a warning to some ornithologists, though many will not read these notes, and will continue to copy the wrong quotations. That is the drawback of great fundamental works like the *Catalogue of Birds*, that they are accepted like a gospel, without criticism.

1. "*Charadrius aegyptius* L."—Every student of African ornithology knows that this is the name given by Linné to the "Crocodyle bird," now called *Pluvianus aegyptius*. Thus it has been correctly quoted by Sharpe in *Cat. B. Brit. Mus.* xxiv. p. 32. By an inexplicable mistake, however, it occurs again, t.e. p. 257, with the same quotation, as a synonym of "*Aegialitis hiaticula*," the Ringed Plover, though Linné's diagnosis and quotations clearly show that it refers only to the *Pluvianus*. This double quotation of the same name has also passed into Reichenow's *Vög. Afrikas*, where we find it on pages 150 and 174.

2. Under *Aegialitis alexandrina* is quoted, p. 277, as a synonym, "*Charadrius cantianus minor*," but Seebohm called it *C. c. minutus*; the latter is a distinct subspecies, now called *C. alexandrinus seebohmi* Hart. & Jacks. (cf. *Ibis*, 1915, p. 529).

3. Under *Himantopus himantopus* we find, p. 311, the quotation: *Himantopus rufipes* Bechst., *Naturg. Deutschl.* iii. p. 466 (1809), and the same is repeated in Reichenow's *Vög. Afr.* i. p. 207. This quotation, however, is incorrect. The page is 446 in any case, and the correct quotation is *Gemeinn. Naturg. Deutschl.* iv. p. 446. Some copies of this volume, it is true, have a second title-page which reads: *Gemeinnützige Naturgeschichte der Vög. Deutschl. . . . Dritter und letzter Band*. Therefore one can, instead of *Gemeinn. Naturg. Deutschl.* iv. also quote *Gemeinn. Naturg. Vög. Deutschl.* iii., but never *Gem. Nat. Deutschl.* iii. This error occurs in many instances in the *Cat. B. Brit. Mus.*, but not constantly, both titles being quoted in vol. xxiv., also copied by Reichenow.

4. The curious sickle-billed bird from Central Asia is, in the *Cat. B. Brit. Mus.*, and all modern works which I have consulted, called *Ibidorhynchus*, and it is quoted thus as named by Vigors, who, however, called it *Ibidorhyncha*. If authors consider themselves justified in altering the gender, they should in any case quote correctly.

5. The quotations from Bechstein under *Calidris arenaria*, p. 526, are incorrect. Instead of *Arenaria vulgaris*, *Orn. Taschenb.*, p. 464A, it should be 462A, and it is better to add "vol. ii." Instead of *Arenaria grisea* Bechst., *Naturg. Deutschl.* iii., it should be iv. (see above).

Calidris tringoides Vieillot, *Gal. Ois.* p. 95, appears in vol. ii., not vol. iii. as quoted by Sharpe—and Reichenow.

6. Under *Limonites minutilla* we find *Tringa nana* Lichtenstein, and "*Tringa georgica*"; the former should be *Pelidna nana*, while the latter does not appear at all in the page and work quoted.

7. Under *Limonites damacensis* we find "*Tringa damacensis* Taczanowski nec Horsf." This happens to be correct, as Horsfield's *damacensis* is not Middendorff's *subminuta*, and not the bird described by Sharpe, l.c.; but since the latter accepted the name *damacensis*, the words "nec Horsf." are senseless.

8. Under *Ancylochilus subarquatus* (p. 586) the following corrections must be made: *Scolopax subarquata* appears in Gmelin's work on page 658, not 568. Latham's "Cape Curlew" is found in the *Gen. Syn.* iii. 1, p. 126, not vol. i.

9. Under *Tringa canutus* (p. 593) we find "*Tringa cinerea* nec Linn.," but Linné never described a *Tringa cinerea*, as far as I am able to find out. *Tringa australis* should in my opinion not be quoted as a synonym of *T. canutus*, as the description of the tail does not agree, the latter not being of the same colour as the wings.

10. The first quotation of ^{*Tringa*} *Pelidna schinzii* Brehm is not "*Vög. Deutschl.*" 1831, but "*Beiträge zur Vögelkunde*," p. 355, 1822!

11. *Numenius pusillus* Bechstein, *Gemeinn. Naturg. Deutschl.* iv. p. 152, appears twice, on p. 586 as a synonym of *Ancylochilus subarquatus*, and on p. 612 as a synonym of *Limicola platyrhyncha*. There is no doubt that Bechstein did not understand very well all the plumages of the various Sandpipers, etc., and on p. 153 he says himself that in his *Orn. Taschenb.* he mixed *N. pusillus* up with "*Numenius pygmeus*" of p. 148, which is *Erolia alpina*, though the quotations refer to *E. ferruginea*! (Latham's "*Numenius pygmaeus*" is certainly *E. ferruginea*, being based on his "Pygmy Curlew.")

The description of Bechstein's *Numenius pusillus*—mark among others the first words "Der breitgedrückte Schnabel"—refers to the *Limicola platyrhyncha* auct., and the figure which he quotes, i.e. Joh. Andr. Naumann's Tab. x., *Nachträge*, depicts that species beautifully, and by no means *Erolia ferruginea*. Bechstein also says that the same kind was meant by his figure in the *Orn. Taschenb.* ii. pl. 21; and for that we have to accept his statement, as the plate is not at all good, and quite discoloured, the white having become pinkish brown-grey, in consequence of lead being used in its manufacture.

The name *N. pusillus* must therefore be quoted under the "Broad-billed Sandpiper," and not under the "Curlew Sandpiper." In fact it would have the priority, according to the Code by which the nomenclature in the *Cat. B. Brit. Mus.* was regulated. It is true that Sharpe added "nec Linn.," but the name *Numenius pusillus* does not occur in the works of Linnaeus! The still earlier name *Numenius pygmaeus* Bechstein, *Orn. Taschenb.* ii. p. 277, pl. 21 (1802) is, as I have said above, partially referable to *Limicola*; and Bechstein, in 1809, tells us that his figure was meant for the latter, but the description suits *Erolia alpina* best. This name is antedated by *Numenius pygmaeus* Latham, as correctly stated by Sharpe, who, nevertheless, failed to quote the latter! *Numenius Pygmaeus*

Latham, *Gen. Synops. B.*, Suppl. i. p. 291 (1787) is based on the "Pygmy Curlew," *Gen. Synops. B.* i. p. 127, and is undoubtedly the Curlew Sandpiper.

The oldest name of the Broad-billed Sandpiper is Pontoppidan's *Scolopax falcinellus*, *Danske Atlas*, p. 623, 1763 (and pl. xxvi. 4). The description is very short, but may be considered as diagnostic; moreover, the species was described in detail under the same name in 1764 by Brünnich. We must therefore call the species *Limicola falcinellus*. In Reichenow's *Vög. Afr.* i. p. 231, the name *Numenius pusillus* appears also wrongly under "*Tringa subarquata*."

12. Under "*Totanus fuscus*" (now *Tringa erythropus*), p. 409, is quoted as a synonym, "*Scolopax atra* Sander, *Naturf.* xiii. p. 193 (1779)." Sander, however, gave no name to the bird, but only describes the black plumage. Reichenow, p. 219, also quotes *Scolopax atra* Sander.

13. Under "*Totanus calidris*" (now *Tringa totanus*), p. 417, is quoted *Totanus meridionalis*, Brehm, *Naumannia* 1855, p. 292; the name is there a nomen nudum, while in *Vogelfang*, p. 312, 1855, a regular description is given; the "*Vogelfang*" therefore should be quoted instead of "*Naumannia* 1855," or both.

14. On pp. 424 and 484 is quoted: "*Limosa horsfieldii* Sykes, *P.Z.S.* 1832, p. 163," as synonymous with "*Totanus stagnatilis*," and "*Glottis nebularius*." Both cannot, of course, be correct. The description shows clearly that the bird is the former, *Totanus* (now *Tringa*) *stagnatilis*, moreover the type is in the British Museum, and mentioned by Sharpe on p. 426. The quotation is somewhat loose, and should be "*Proc. Committee Zool. Soc. London*, Part II. p. 163, 1833."

15. Under "*Glottis nebularius*" is correctly quoted *Scolopax glottis* Latham, 1787, but it must be added "nec Linnaeus!" On p. 484 is quoted *Totanus griseus*, Bechstein, *Gem. Naturg. Deutschl.* iv. p. 249, but the page is 231; the same mishap has occurred to Reichenow, *Vög. Afr.* i. p. 217.

16. On p. 461, under "*Tringoides hypoleucus*" is quoted as a synonym: "*Actitis stagnalis* (nec Gray), Brehm, *Vög. Deutschl.* p. 649"; it should, however, read: *Actitis stagnatilis* (nec Bechstein), Brehm, *Handb. Naturg. Vög. Deutschl.* p. 649.

17. Under *Numenius borealis* are at least two misprints. On p. 369 the page where *Numenius brevirostris* Licht. is described is 75, not 72. On p. 370, the volume in which *N. microrhynchus* Philippi & Landbeck is described should be 1866, i. and not 1868.

18. Under *Scolopax rusticola* is quoted (p. 674): *Rusticola vulgaris* Vieillot, *Nouv. Dict.*, etc., p. 673, but the page is 348.

19. Under "*Phalaropus hyperboreus*" is quoted (p. 701): *Phalaropus lobipes* Keys. & Blas., but these authors called the bird *Lobipes cinereus*!—*Phal. moluccensis* Temm. appears on p. 59 and not p. 69!

20. Misprints and errors occur in every book in the world. Even from Mathews' *B. of Australia* they are by no means absent, though very rare. For example, under *Numenius cyanopus* I noticed that the name *N. rostratus* is quoted as appearing in *Ann. & Mag. Nat. Hist.* ix., while it is vol. xi. in which it is found. Nor is it there given as a "substitute name," but quoted as a MS. name of Latham for *N. cyanopus*.

Sapienti sat! If all these errors occur in a portion of the palæarctic Waders alone, how many may there be in the tropical species?

CORRECTIONS OF AND ADDITIONS TO OUR
 "REVISION OF THE *SPHINGIDAE*."

BY LORD ROTHSCHILD, PH.D., AND DR. K. JORDAN.

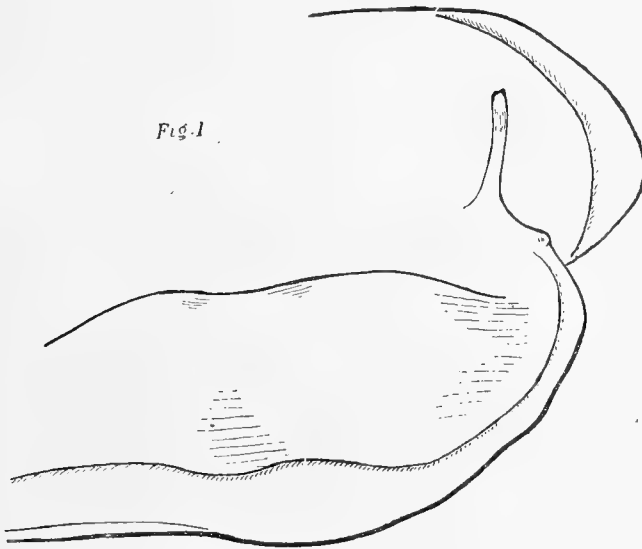
(With 3 Text-figures.)

1. *Polyptychus draconis* spec. nov. (text-fig. 1)

♂. *P. trilineato* similis, magis grisescens, alis fortius dentatis, anticis apice angustiore, lineis duabus externis modice sed distincte incurvatis haud angulatis; alis subtus ut in *P. trilineato* duabus lineis fuscis notatis, linea prima in ala antica obsolescente, secunda tenuissima extus albo-griseo determinata.

Al. ant. long. : 56 mm.

Hab. "Thibet" (verisimiliter China occidentalis), specimen unicum a dom. E. Le Moulton communicatum.



TEXT-FIG. 1.—*Polyptychus draconis*.

The general colour is a mixture of ashy grey and fuscous, without the luteous and purplish tints of *P. trilineatus* Moore (1888).

Palpus rather smaller than in *P. trilineatus*. The apex of the forewing more produced, the dentition of the outer margin more prominent (as is also the case in the hindwing), and the hindmargin rather more deeply incurved before the angle; the lines placed as in *P. trilineatus*, but the dark shade situated outside the first line not separated from the line by a pale interspace, the two discal lines evenly incurved from costal to hindmargin, almost parallel, the outer line more conspicuously bordered with grey, not excurved, the fuscous diffuse marginal patch below the apex extending to tooth R³. Hindwing fuscous along abdominal margin, otherwise ashy grey, palest costally; a whitish grey line extends from anal angle forward.

On the *underside* the external fuscous line of both wings very thin, being

edged on the outer side by a conspicuous, somewhat broader, whitish grey line; the line straighter on the forewing than in *P. trilineatus*; the proximal discal line of the forewing obsolescent (for the greater part absent in our somewhat abraded specimen); the corresponding line of the hindwing not accompanied by a fuscous diffuse band on the outer side, as is generally the case in *P. trilineatus*; marginal area of both wings darker blackish grey than the proximal half of the wings, of a dark hair-brown tint (Ridgway, *Nomencl. Colours*, pl. 3, No. 12).

Genitalia quite different from those of *P. trilineatus* and *dentatus*. Tenth tergite ending in a broader and more obtuse hook than in *P. trilineatus*; the sternite represented by a large plate, which is convex on the upperside and apically sinuate, the two lobes separated from one another by the sinus are broad, rounded, and slightly bent downwards. The clasper (text-fig. 1) is very much larger than in *P. trilineatus*; it is divided distally by a slit into a rather soft, scaled, upper lobe and a more strongly chitinised, more or less naked, lower portion, of which the apical margin is rounded, curving upwards and ending in a slender, apically brown, process, which lies on the inner surface of the dorsal apical lobe. Below the tenth sternite two spiniform processes, as in *P. trilineatus*, but straighter apically. The penis-funnel a simple ovate ring. The unpaired ventral process of *P. trilineatus* absent.

2. *Nyceryx eximia* spec. nov.

Nyceryx tacita, Rothschild & Jordan, *Nov. Zool.* ix. Suppl. p. 418. no. 351. pl. 47. fig. 2, pl. 53. fig. 47, pl. 54. fig. 4 (1903) (partim; Chiriqui).

The specimens described in the *Revision* as *tacita* Druce are not this species. We have now two examples of true *tacita*, the possession of which allows us to compare the genitalia. The two species are certainly very similar both in colour and structure, but perfectly distinct.

In *tacita* the dark patch placed on the upperside of the forewing in front of the hindmargin is sharply bounded on the proximal side by a straight grey line, which is vestigial to the costa and ends here near the upper one of the two black dots situated at the apex of the cell. In *eximia*, the forewing of which is rather more purplish brown, this patch is posteriorly produced towards the base of the wing, its inner edge being curved. The whitish grey lines on the forewing of *eximia* are more irregular in shape than in *tacita*, the postdiscal line which runs obliquely from the costa towards the distal margin particularly being straighter in *tacita* than in *eximia*; the whitish grey submarginal curved line which extends from the brown apical spot to the central tooth of the distal margin bears in *tacita* a very distinct white dot, but not in *eximia*. The ochreous area of the hindwing is much more extended in *eximia* than in *tacita*, the blackish brown marginal border being 5 or 6 mm. wide at the subcostal in *tacita*, and at the most 3 mm. in *eximia*.

The underside of the wings is almost the same in the two species; *tacita* is a little duller in tone and its marginal border contrasts slightly less with the rest of the wing, in *eximia* a tooth projecting from the centre of the marginal band on the forewing being especially deep brown.

The whitish lateral dots on the abdomen are rather larger in *eximia* than in *tacita*, while in *tacita* the first two abdominal sternites are more densely scaled with purplish white, contrasting rather strongly with the other segments.

The genitalia of the ♂ of *eximia* are figured in the *Revision*, l.c. The

hook of the tenth tergite is slenderer in *tacita* than in *eximia*, bearing no trace of a tooth or dilatation in *tacita*; moreover, in *tacita* the portion of the segment proximal to the curved apical hook is more abruptly widened than in *eximia*. The apical ridge at the right side of the penis-sheath (left in figure) is rounded in *tacita* (text-fig. 2), and the one on the opposite side short; the whip is broader in *tacita* than in *eximia*, being particularly broad in our Bolivian example of *tacita*, less so in the one from Costa Rica. The dentate processes of the penis-funnel are rather larger in *tacita* than in *eximia*.

The ♀ of *eximia* differs from the ♂ in the yellow area of the hindwing above being slightly smaller.

Hab. Chiriqui, 2 ♂♂ and 1 ♀, and 1 ♂ without locality, in the Tring Museum. We have 2 ♂♂ of *N. tacita* Druce (1888) from Tuis, Costa Rica, September (W. Schaus) and Rio Songo, Bolivia, 750 m. (A. H. Fassl). All the specimens, with one exception, recorded from other collections in the *Revision* from Mexico, Peru and Bolivia are, we think, *tacita*, but it would be advisable to compare them again. Judging from the notes we took in 1902, the Staudinger collection contained at that time four specimens under the name of *tacita*, of which one belongs to *eximia*.

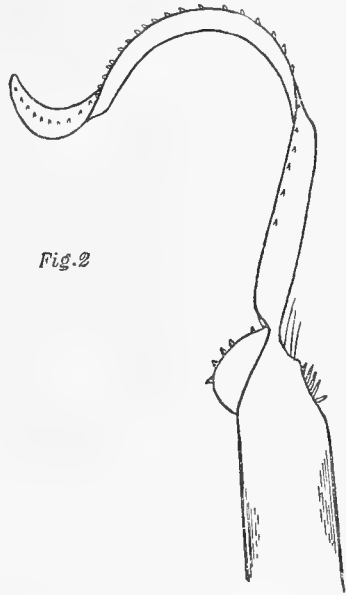


Fig. 2

TEXT-FIG. 2.—*Nyceryx tacita*.

3. *Nyceryx continua cratera* subsp. nov.

Nyceryx maxwelli, Rothschild and Jordan, *Nov. Zool.* ix. Suppl. p. 419. no. 352 (1903) (partim; S. Domingo).

♂. Major, supra magis grisescens, alis anticis magis variegatis, posticis in disco brunneo notatis, limbo nigro-brunneo ante marginem abdominalem ad basin usque continuato, basi ipsa nigro-brunnea.

Al. ant. long.: 30 mm.

Hab. Rio Songo, Bolivia, 750 m. (A. H. Fassl); and S. Domingo, Carabaya, S.E. Peru, 6000 ft., June and August 1902 (G. R. Ockenden); 6 ♂♂, type from the Rio Songo.

When we wrote our *Revision of the Sphingidae* we had only one specimen of *N. maxwelli* Roths. (1896). The figures of the genitalia published in the *Revision* were taken from this specimen. The second specimen mentioned in the *Revision* was received while the work was in press. Considering it to be a somewhat different example of *maxwelli*, we did not compare its genitalia. We now find that the specimen belongs to a new subspecies of *N. continua*.

We have six ♂♂ of *N. maxwelli*, from Bolivia, and Zamora, Ecuador, and a ♀ from Theresopolis, Santa Catharina. The specimens of the new form of *N. continua* are of the same size as these *maxwelli*, i.e. much larger than the Brazilian ♂♂ of *continua*, but all differ from *maxwelli* (apart from the genitalia, which are in *cratera* like those of *N. continua continua* figured in the *Revision*) in the hindwing bearing an

orange streak along the abdominal margin, and in the underside of the wings having no or very few yellow spots.

N. c. cratera is distinguished from *N. c. continua* by superior size, greyer colouring of the upperside of the body and forewing, the broader and less sharply defined border of the hindwing, which, moreover, is connected with the base along the second submedian vein, and by the upperside of the hindwing bearing a brown stigma, and between it and the marginal band a number of brown spots. Besides, the pronotum shows distinct traces of brown transverse lines, which are absent from *N. c. continua*.

4. *Epistor taedium* Schaus (1890)

The ♀ of this species is as yet undescribed. Some time before the war we received from Messrs. Staudinger and Bang-Haas both sexes of the subspecies *taedium taedium* labelled Chiriqui. This ♀ is undoubtedly *taedium*. It agrees closely with that sex of *E. gorgon* Cram. (1777), but differs in the rather narrower forewing, of which the distal margin is somewhat more distinctly elbowed, the darker colouring of both the upper- and undersides as well as the legs, and in the distal margin of the forewing beneath bearing a distinct whitish grey diffuse border, as in the ♂. Moreover, the proximal one of the two discal lines of the underside is on both wings more prominent than in *E. gorgon*.

5. *Temnora albilinea* Roths. (1904)

In *Arch. Naturg.*, 1913, Abt. A, Heft 6, p. 110, Embrik Strand describes as *Temnora albilinea* Roths. v. *obscurascens* Strand n.v., a ♂ of *T. albilinea* from Ujiji in German East Africa, which has a darker ground-colour than is shown in the figure of *T. albilinea* published in Wytzman's *Gen. Ins.* 57. pl. 6. fig. 3 (1907). This figure, however, is a somewhat inaccurate representation of the species. Moreover, the specimen from which it was taken was collected in 1875 (A. v. Homeyer), and has not entirely escaped the influence of time on its colour. The species of *Temnora*, *Nephele*, and many other genera are liable to fading, and a difference in the tone of the ground-colour should always be regarded with suspicion. The ten specimens of *T. albilinea* in the Tring Museum, from Angola and Uganda, afford sufficient evidence that *obscurascens* is only based on a fresh example of *albilinea*, and is not a variety. The figures of *Sphingidae* in *Gen. Ins.*, l.c., are very hard, the colouring being exaggerated by the lithographer, and the small details in the pattern are not absolutely exact.

6. *Temnora cinereofusca* Strand (1912)

We have two ♀♀, one from Bitye, South Kamerun, and the other from Lulua-burg, Kassai R., Congo, which agree with E. Strand's description of *T. cinereofusca*, *Arch. Naturg.* 1912, Abt. A, Heft 6, p. 155, no. 21 (S. Kamerun and Spanish Guinea), except that they are larger, the forewing measuring 30 mm. instead of 25. We had placed these examples in the collection under *T. reutlingeri* Holl. (1898), and on reconsideration adhere to this opinion. We therefore regard *cinereofusca* as synonymous with *T. reutlingeri*.

7. *Temnora griseata* R. & J. (1903) (text-fig. 3)

This species was described from a single ♀ in the Royal Museum at Brussels from the Congo. We have lately received a ♂ from Nigeria (no more exact locality being given) which agrees with the ♀. It is in a better state of preservation, and shows on the forewing two vestigial brown transverse lines in the basal fourth and three in the centre, these lines being convex on the distal side, and the two outer ones of them only indicated by dots on the veins. On the underside both wings are crossed by two discal lines, of which the distal one is dentate.

The long apical spur of the hindtibia is not quite half the length of the first hindtarsal segment. The tenth abdominal tergite is slender, gradually narrowing to the apex, which is very slightly truncate. The sternite is but little wider than the tergite, but much shorter, the apex being truncate. Clasper with six or seven large friction-scales. Harpe slender, tapering, curved upwards, similar to that of *T. livida* Holl. (1889). Penis-sheath with a large apical patch of teeth (text-fig. 3).

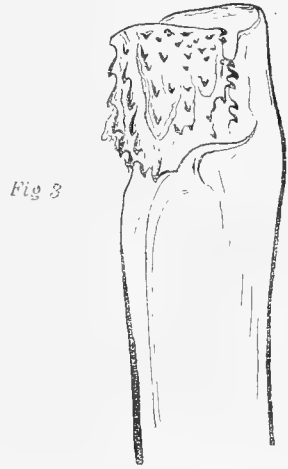


Fig 3

TEXT-FIG. 3.—*Temnora griseata*.8. *Temnora oxyptera* spec. nov.

♂. Alis anticis cum corpore cinereis apice magis productis quam in *T. grisea*, cui haec species similis, lineis medianis postice fere rectis haud obliquis; alis posticis et prona facie subtestaceis.

Long. al. ant.: 26 mm.

Hab. Chintriche, Nyassaland; 1 ♂.

The outer surface of the foretibia bears fewer spines than in *T. griseata*, and the long apical spur of the hindtibia is only one-third the length of the first hindtarsal segment. The *uppersides* of the body and forewing are of a more ashy grey tone than in *T. cinerea*, with a slight purplish tint. The markings of the forewing are as little distinct as in *T. griseata*; there is in the basal fourth a pair of strongly curved lines, of which the proximal one, before reaching the hindmargin, turns basad and runs to the base, as in *T. griseata*; the centre of the wing has two lines, the inner one is broadened anteriorly and touches the upper cell-angle, the two lines are costally farther apart than posteriorly, excurved below the costa, and slightly incurved below the centre, standing almost at right angles to the hindmargin, which they reach just beyond two-thirds; *T. griseata* has four, more or less vestigial, lines in the middle of the wing, and the posterior portions of these lines are more oblique than in *T. oxyptera*, the proximal angles formed with the hindmargin being obtuse; about half-way between cell and distal margin there is in *oxyptera* a row of minute vein-dots; the subapical costal spot is as distinct as in *T. griseata*, but rather more luniform, and the second row of vein-dots, which in *T. griseata* runs from this spot towards the hindmargin, is apparently absent from *T. oxyptera*.—The hindwing is a pale dull brick-red shaded with brown and grey, the red tone agreeing best with the vinaceous cinnamon of Ridgway, *Nomencl. Colours*, pl. 4.

Underside of wings rather paler reddish than the upperside of the hindwing;

proximal half of forewing shaded with brown, on the disc three dentate lines, a complete grey marginal band angulate at the first and second radials (R^1 and R^2).
 —On hindwing the discal lines as on the forewing, the marginal band narrower.

The genitalia are very similar to those of *T. griseata* as regards the anal segment and the claspers; the penis-sheath, which may be expected to show a more conspicuous difference, is unfortunately missing. The anal tergite is less curved and somewhat flatter, appearing thinner in a lateral view; the sternite is a little broader than in *T. griseata*, and shows hardly a trace of an apical sinus.

9. *Deilephila dohertyi callusia* subsp. nov.

Deilephila dohertyi, Rothschild and Jordan, *Nov. Zool.* ix. Suppl. p. 507. no. 426 (1903) (partim; Solomons).

♂. Minor, alis anticis supra linea grisea submarginali fere nulla, posticis subtus absque guttis griseo-albis ad marginem anteriorem.

Al. ant. long. : 35–40 mm. (*d. dohertyi*: 42–47 mm.)

Hab. Solomon Islands: Choiseul (type), December 1903, 6 ♂♂; Bougainville, April 1904, 3 ♂♂; Isabel, June–July 1901, 1 ♂; Kulambangra, February 1901, 1 ♂; all collected by A. S. Meek.

When writing our *Revision of the Sphingidae*, l.c., we had only two specimens of *D. dohertyi* from the Solomon Islands, two from the Bismarck Archipelago, and two from New Guinea. We have now six from New Guinea, two from the Bismarck Islands, and eleven from the Solomons. These specimens evidently belong to two geographical races of *D. dohertyi*, true *dohertyi* occurring in New Guinea and the Bismarck Archipelago, and *callusia* on the Solomons.

D. d. callusia is smaller than *D. d. dohertyi*; on the *upperside* the grey submarginal line which on the forewing of the latter runs from the oblique apical line to the posterior angle, is only vestigial and irregular in *callusia*; the grey line bordering the basal patch is on the whole more irregular in *callusia*; on the *underside* the two white spots present at the costal margin of the hindwing of *d. dohertyi* are absent from *callusia*. The fore- and hindtibiae are less white, and the greyish white median stripe of the meso-metasterna is narrower than in *d. dohertyi*.

10. *Enpinanga labuana oceanica* subsp. nov.

♀. Alarum signaturis melius expressis quam in *E. l. labuana*, anticarum margine externo ad angulum posticum usque griseato, posticarum fascia marginali dentata nigro-brunnea sat bene expressa; subtus laete vinaceo-rufa.

Hab. Andamans; 1 ♀ in Mus. Tring, a dom. celeb. J. W. Kaye benevole don.

On the *upperside* the basal half of the forewing contrasts more sharply with the outer half than in *E. l. labuana*, from Borneo, of which we have two ♀♀, the lines in the disc are more distinct, and the grey shading of the marginal area extends from the apex to the hinder angle. The hindwing is somewhat paler than in *E. l. labuana*, while the external margin on the contrary is darker, a deep brown, well-defined, marginal band being formed, which is dentate at the veins.

The *underside* is much brighter red than in *E. l. labuana*. On the forewing the costal portions of the first and third discal lines form two distinct anguliform brown spots accompanied by two grey spots of nearly the same shape. Three discal lines on the hindwing, the first and third prominent, the second vestigial.

11. *Macroglossum amoenum* spec. nov.

♀. *M. passalo* similis, sed multo minus, alis anticis fascia nigro-brunnea antemediana magis obliqua, posticis fascia flava latiore, abdominis segmentis 4°, 5°, 6° lateribus albo-penicillatis.

Al. ant. long. 19.5 mm., lat. 8.5 mm.

Hab. Sungei Liat, Banka Island; 1 ♀.

Easily separated from *M. passalus* Drury (1773), apart from its small size, by the lateral tufts of the three segments preceding the tail being tipped with white, and by the oblique position of the antemedian band of the forewing, the outer edge of this band being at the hindmargin as far distant from the base as at the costal margin. This latter characteristic also distinguishes *amoenum* from *fringilla* Boisd. (1875).

Upperside of palpus, head and thorax smoke-grey, with black-brown median stripe, sides of mesothoracic tegulae bright walnut, this colouring sharply defined; palpus as long as in *passalus*, longer than in *fringilla*. *Upperside* of abdomen nearly as in *passalus*, the two yellow side-patches small, a vestige of an anterior, third, patch on second segment, the two grey spots at the base of the seventh tergite very conspicuous, more so than in *passalus*, lateral tufts of segments 4 and 5 white, the tuft of 5 particularly conspicuous, tuft of 6 brown with the extreme tip white, tail as in *passalus* tipped with pale hazel. On *underside*, the palpus white, with a dark brown stripe in front of the eye, breast greyish white in centre, clayish brown at sides; legs clayish brown shaded with hazel in parts, the long scales of the hindtibia with whitish tips; abdomen pale hazel, greyish at base in the centre, tail chestnut tipped with hazel.

Wings, upperside. General coloration of forewing as in *passalus*, the basal area a little paler, slightly more contrasting with the black-brown antemedian band; this band is nearly 1½ mm. broad at the costal margin and widens almost suddenly on the proximal side below the submedian vein, its outer edge being about 6 mm. distant from the base throughout, forming an obtuse angle with the hindmargin of the wing, while in *passalus* and *fringilla* the angle is somewhat less than 90°; pale median interspace much shaded with purplish grey; blackish brown postmedian band as in *passalus*, but more oblique and less angulate; a costal patch outside this band, posteriorly bounded by R³, much shaded with purplish grey, sharply defined; a diffuse, but very distinct submarginal band of the same purplish grey scaling extends from apex to hind angle, narrowing at both ends.—*Hindwing*: the orange-yellow band sharply defined, a little over 3 mm. wide in centre; black-brown marginal border of about even width from below costa to below middle, where it is as broad as the orange-yellow band, and then gradually narrows to a point, the inner margin of the border slightly denticulate, but not distinctly angulate, the border proportionately narrower than in *passalus*, especially the posterior portion.

Underside duller red-brown than in *passalus*, almost like burnt-umber faintly shaded with drab; the lines less distinct than in *passalus*.

12. *Macroglossum poecilum* R. & J. (1903).

Macroglossum insipida poecilum Rothschild & Jordan, *Nov. Zool.* ix. Suppl. p. 643. no. 579 c. pl. 3. fig. 17, ♂ (1903) (Loo Choo Is.).

When describing this insect from two Loo Choo specimens we said that it was perhaps a distinct species. We have now, from the van de Poll collection,

a third example, which came from Mt. Marapok, British North Borneo. This specimen agrees with the Loo Choo ones in the structure of the genitalia as well as in the pattern of the wings and body, but has a somewhat darker coloured underside. We have no longer any doubt that *poecilum* is a distinct species.

13. *Macroglossum semifasciata nigellum* subsp. nov.

Macroglossum semifasciata, Rothschild & Jordan, *Nov. Zool.* ix. Suppl. p. 657, no. 601. pl. 50. fig. 32, pl. 56. fig. 47, genit. (1903) (partim; Java).

♂. Fascia aurantiaca alarum posticarum angusta subinterrupta distinguendum.
Hab. Java (Piepers); 1 ♂.

Subapical blackish brown diffuse spot expanded between costa and R¹ of forewing distinct and proximally rather sharply defined; the smoky grey scaling placed at the proximal side of this spot and in the centre of the wing also more prominent than in true *semifasciata*, from Burma, the Andamans, Nias and Borneo.—The yellow band of the hindwing narrow, in the centre the brown-black basal area connected with the distal border by means of vein-streaks.

On *underside* the hindwing less extended yellow than in *semif. semifasciata*, the yellow abdominal patch reaching from base scarcely halfway to anal angle.

Genitalia (figured *l.c.*): In true *semifasciata* the long slender process of the harpe is slightly curved downwards, in *nigellum* curved upwards; the process of the penis-sheath, in the former, ends in a long slender point, while in *nigellum* the apex of this process is obtuse and denticulate; moreover, the teeth on the sheath at the base of the process are larger in *nigellum*.

The larva described by Piepers (1897) as that of *M. fano* is the larva of the present subspecies.

14. *Macroglossum adustum* spec. nov.

♂. *M. semifasciatae* vicinum, alis posticis fascia aurantiaca fere nulla.
Al. ant. long. 28 mm.

Hab. Solomon Islands: Vella Lavella, March 1908 (type), and Rendova, February 1904 (A. S. Meek); 2 ♂♂.

Body and wings deeper brown than in *M. semifasciata*, but the markings the same as in that species, excepting the hindwing. On this wing, *above*, the yellow band indicated by a faint cloud placed in front of the abdominal margin, and a diffuse yellow patch situated outside the upper cell-angle, in between the cloud and the patch some yellowish hair-scales. On the *underside* the bases of both wings slightly clayish grey; on hindwing, before the abdominal margin, a dirty yellow patch from base halfway to apex of SM².

Genitalia similar to those of *M. semif. semifasciata*, differing slightly in the harpe being a little more down-curved and in the teeth of the outer row on the penis-sheath being larger.

15. *Macroglossum moriolum* spec. nov.

♀. Corpore brunneo-nigro, abdomine lateribus albo-penicillato, subtus medio griseo-albo notato, palpis pectoreque griseo-albis. Alis anticis supra brunneo-nigris, grisescentibus, fasciis duabus nigris notatis; posticis nigris, macula subcostali et altera diffusa subanali pallide aurantiacis. Infra nigro-brunneis, basi flavescenti-griseis, posticis macula subabdominali a basi ad medium aurantiaco-flava.

Al. ant. long. 22-24 mm.

Hab. Vella Lavella, Solomon Islands, February and March 1908 (A. S. Meek); 3 ♀♀.

Near *M. melas* R. & J. (1903), which it represents, apparently, on the Solomon Islands. It is easily distinguished from *melus* by the outer margin of the black antemedian band of the forewing being strongly curved proximad posteriorly, the postmedian band of two lines being entirely filled in with black, and by the yellow band of the hindwing (which varies very much in *melas*) being represented by a small, elongate, subcostal patch and an obsolescent, diffuse cloud placed in front of the abdominal margin (in one of our three examples both markings are barely vestigial). Moreover, the yellow basi-abdominal patch of the hindwing extends only halfway to outer margin.

In the type-specimen there is a trace of a yellow side-spot on the third abdominal segment.

A NEW SPECIES OF *GEOMETRIDAE* FROM NEW GUINEA.

BY DR. KARL JORDAN.

Milionia optabilis spec. nov.

♀. *M. paradiseae* similis, alis anticis macula parva basali nitida, posticis duabus striis nitidis ornatis facile distinguenda.

Al. ant. longit. : 22 mm.

Hab. Near the Oetakwa R., Dutch South New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek); 2 ♀♀.

Body glossy blue. Wings velvety black above, with a blue sheen in certain lights; tips of fringes of both wings greyish white; on forewing a short streak on the subcostal and median veins, and another, somewhat longer, on the submedian glossy blue, united at the base, an orange (*type*) or red median band from the costa to hindmargin, the fringe of the hindmargin remaining black, the band just proximal to the discocellulars, the upper angle of the cell being black; distally of the band a few scattered glossy blue scales.—On hindwing the band red, abbreviated in front, extending forward to the subcostal or a little beyond it; in the basal area two glossy blue streaks, one on the median, the other on the submedian, both extending from the base close to the band.

On *underside* the forewing nearly as above, the band reddish behind, and the blue scales outside it more numerous. On the hindwing two blue streaks, the first placed on the costal and subcostal, the second on the median vein.

Veins SC² and R¹ of the hindwing (6 and 7) on a very short stalk in *type*, separate in second specimen.

NOTES ON *ARCTIIDAE*.

BY DR. KARL JORDAN.

(With 47 Text-figures.)

IN the taxonomy of species colour and pattern have played a more important part in Lepidoptera than in other orders of insects. In many genera of Lepidoptera, however, the pattern has remained so uniform or has become so simplified or so unified that colour distinctions between the species are more or less absent, the species being so similar to one another that they are not, or not easily, distinguished without an investigation of their structure (*congeneric synchronatic species*). On the other hand, there are species and groups of species in which colour and pattern, and often also the shape of the wings and the size, are so variable individually that none of these external distinctions are trustworthy guides in differentiating the species. These extremes offer a most interesting field for research. They not only have many surprises in store for the systematist, but also are of considerable importance for the study of the wider question of evolution.

Instances of both these extremes are not rare among the *Arctiidae*, and Lord Rothschild has drawn my attention to quite a number of species which he thought might possibly be composite. In offering herewith some notes on a few American congeneric synchronatic Arctiids I confine my remarks in the body of the paper almost exclusively to the systematics of the species with which I am dealing, but venture to mention at the end of the paper a few points of general interest of which the Arctiids here described may be regarded as illustrations.

GENUS *Ammalo* Walk. (1855)

In Hampson, *Lep. Phal.* iii. p. 83 (1901), the genus *Ammalo* contains six species, one of which is *insulata* Walk. (1855). This is a small species (length of forewing 13 to 22 mm.), with a buff-yellow abdomen which bears black dorsal and lateral spots or dots, the thorax and wings varying from cream-colour to buff-yellow, and the antennae, palpi, lower part of the frons and the tibiae and tarsi being more or less blackish brown. It is a very uniformly coloured insect.

An examination of the specimens in the Tring Museum (about 150) and of the series in the British Museum has produced convincing evidence that there are three such yellow species instead of one. Apart from one of them having the frons rather more extended blackish brown than the others (the difference being measurable under a lens), these species are alike in colour, but perfectly distinct in structure in both sexes.

The species commonest in collections is

1. *Ammalo insulata* Walk. (1855)

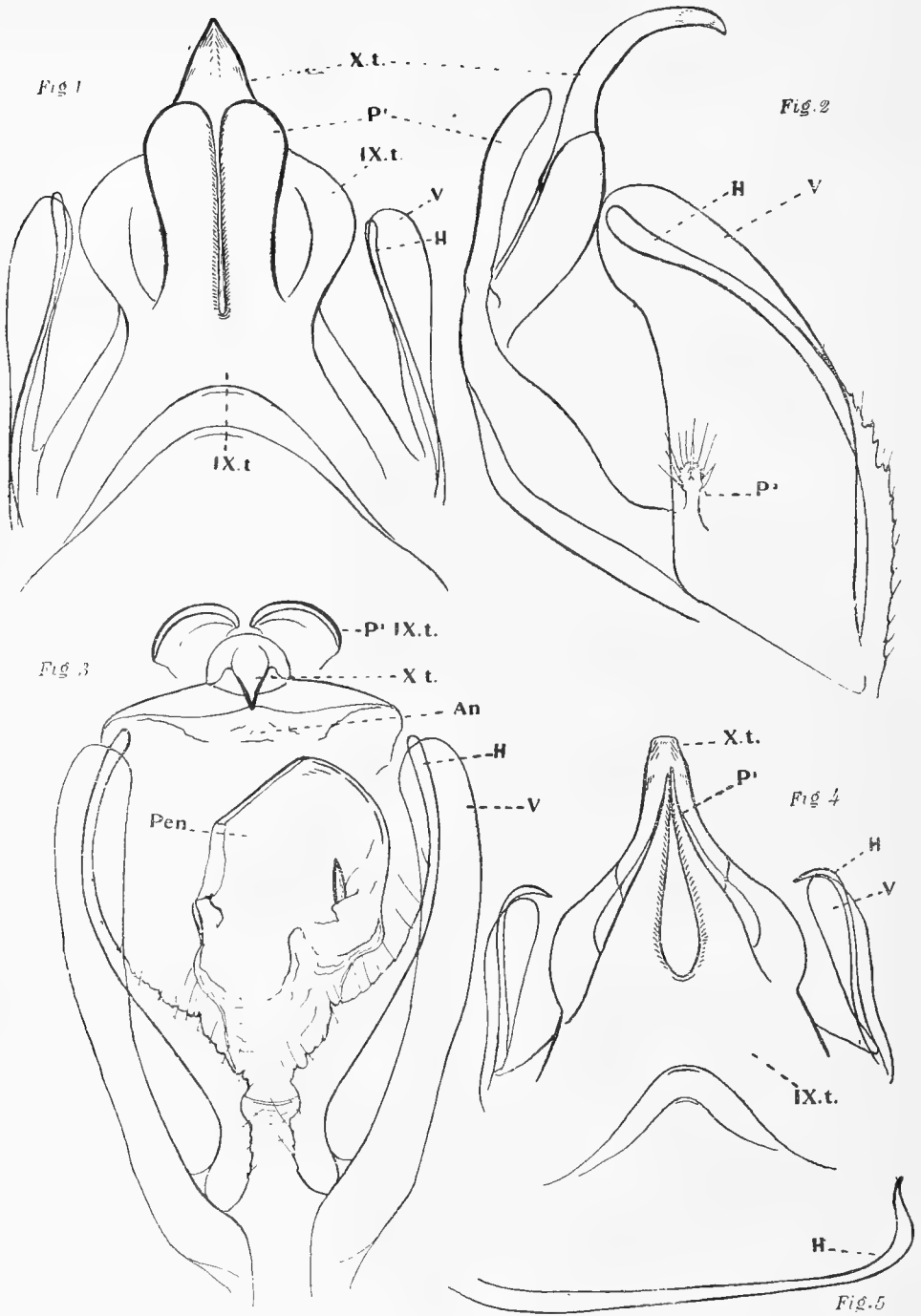
Originally described from Jamaica, this species is known also from the other larger West Indian islands as well as the Bahamas, Grand Cayman, Grenada and Florida, and probably occurs on most of the islands; on the continent it is found from Mexico to Colombia, its range extending eastwards to British Guiana, and

including Venezuela and Trinidad. There is also a pair in the Tring Museum labelled Rio de Janeiro, and another ♀ ticketed "Brazil," but it is perhaps advisable to await confirmation of this record before accepting it as correct. Anyhow, *A. insulata* is an essentially Caribbean species. The ranges of the other species are much more restricted.

In colour *insulata* varies from cream-colour to buff-yellow. The black suffusion of the frons is restricted to the lower third, and is sometimes vestigial only. The pectinations of the central segments of the antenna are in the ♂ about as long as the shaft of two segments. The main distinctions are found in the genitalia, which are built up on the same plan in all three species, but exhibit very striking differences in the detail. The supra-anal hook, which is morphologically the tenth tergite, and is usually termed the *uncus* in descriptive Lepidopterology, is nearly always visible without dissection. But in order to get a clear view of the other sclerites it is necessary to remove the eighth segment, or at least that apical portion of it which projects over the following segments, forming a sort of cylinder or cavity into which the organs of copulation are retracted. When the eighth tergite has been made somewhat flexible by a little wood-naphtha or weak alcohol, a sharp longitudinal cut at one side and a cut across the back usually enables one to lift the integument up and bend it towards one side without breaking it altogether, leaving the ninth and tenth segments exposed to view.

The ninth tergite is dorsally produced into a pair of long processes (P^1 in our text-figures), which are hollow, bear long stiff scales usually pasted together, and contain probably scent-glands. The processes project over the widened and centrally-flattened apical portion of the ninth tergite and overlap the base of the tenth tergite (or uncus). In *insulata* (text-figs. 1 and 2, P^1) they are three times as long as they are broad, being widened distally on the outer sides with the apex rounded off. The pleurite of the ninth segment forms the side-clasper, consisting of the valve (V) and the harpe (H). The valve (text-figs. 1, 2, 3, V) is thin, i.e. weakly chitinised, and evidently serves more as a cover than as an organ of prehension. Its shape in *A. insulata* is represented in text-fig. 2, the real outline being distorted in a view from above (text-fig. 1), and from below (text-fig. 3). The harpe (H) is detached from the valve, except at the base. It is as long as the clasper in *insulata*, slender, with the apex rounded and more or less widened, the proximal portion of the ventral margin being irregularly notched (cf. text-figs. 2 and 3). On the ventral, membranaceous or semi-membranaceous, portion of the ninth tergite, inside of the clasper towards the penis-sheath, there is on each side a short, soft, club-shaped process (P^2) studded at the apex with long bristles (text-fig. 2). This organ, which recurs in various shapes throughout the family, though not everywhere, is apparently of a sensory nature. The tenth tergite (x. t.) of these species is a simple process, widest at the base, more or less convex above, and gradually curved downwards, its under surface being concave. In *insulata* the apex is sharply pointed and subcarinate above. There is no separate, projecting sclerite below the anus homologous with the tenth sternite, this sternite simply forming part of the integument extending between the penis-sheath and the anus. The penis-sheath (Pen) is very large in all three species, and internally armed with one strongly chitinised spiniform love-dagger.

In the **female** the differences most easily seen are those presented by the eighth sternite, which lies behind the orifice of the vagina (Vg) and in front of the anal segment (which is formed by segments ix and x being completely fused). In



TEXT-FIG. 1.—*Ammalo insulata*.
 " " 2.— " "
 " " 3.— " "
 " " 4.— " *arravaca*.
 " " 5.— " "

insulata the centre of sternite viii is always swollen, a transverse glossy callosity being formed which is more or less hidden by the overlapping sternite vii (text-fig. 8). The ♂-genitalia vary very slightly geographically.

2. *Ammalo arravaca* spec. nov. (text-figs. 4, 5, 9)

This species is only known to me from French Guiana and Surinam, all the specimens I have seen from these countries belonging to *arravaca*. The pair recorded by Lord Rothschild under *insulata* (*Nov. Zool.* 1910, p. 35) from "Brazil (Meyer coll.);" is *arravaca*, and the locality Brazil may safely be regarded as erroneous.

A. arravaca agrees in colour with *insulata*, but our specimens are on an average smaller, the forewing measuring from 14 to 16 mm. in length; this measurement may not be confirmed, if a series larger in number than ours is compared.

The pectinations of the male antenna are very slightly longer than in *insulata*. The dorsal processes of the ninth tergite (text-fig. 4, P¹) are pointed, tapering from the base to the apex, the slit between them being much wider than in *insulata*. The valve (V) is practically the same as in that species, but the harpe (H) is strongly curved at the apex, ending in a sharp point, which often projects beyond the apex of the clasper (text-fig. 5). The tenth tergite is rounded-truncate (x. t.), not pointed as in the other species, and apically flattened. As this organ usually projects from beneath the eighth segment, and can easily be examined, there is no difficulty in distinguishing the ♂ of *arravaca* from the other species.

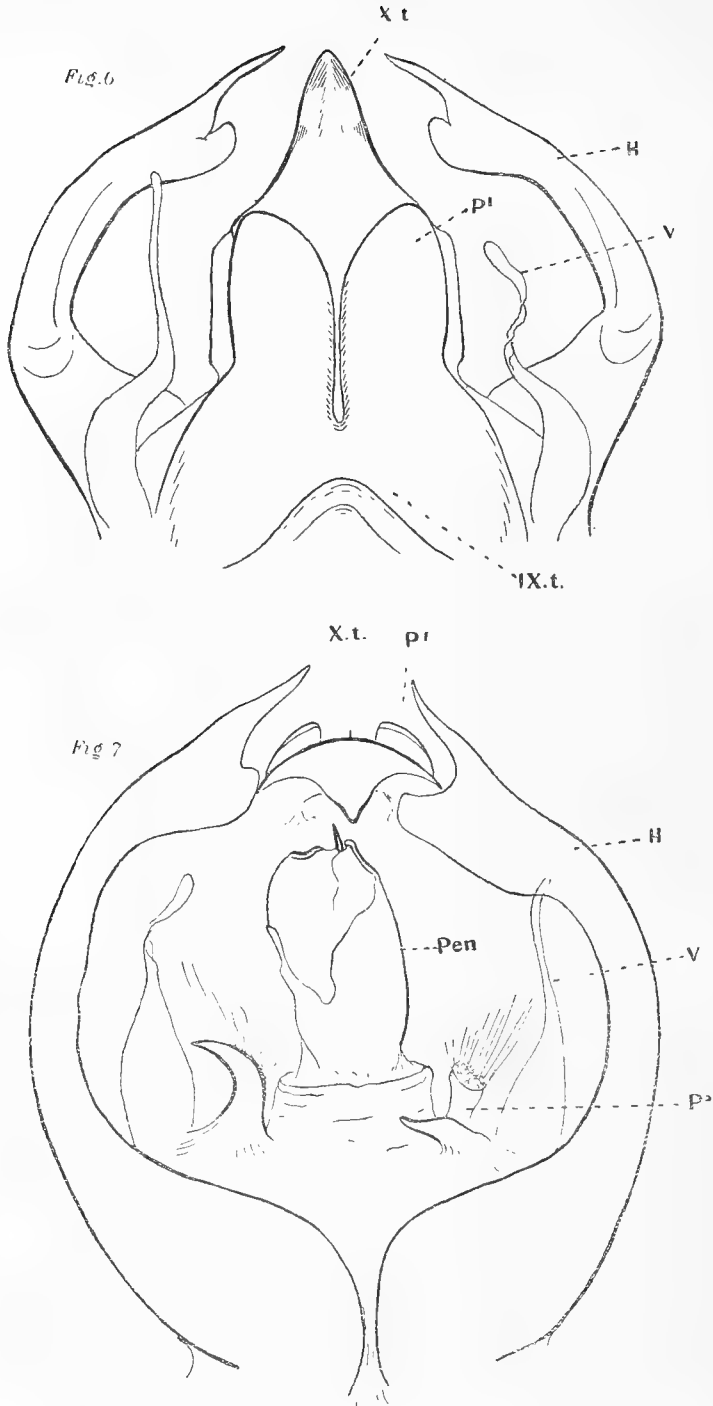
The eighth sternite of the female (text-fig. 9) differs from that of *insulata* in bearing no large median callosity. The apical margin is not incrassate in the centre, or only to a very slight degree. The feeble swelling which is usually present, and which extends forward as an indistinct median ridge, is more due to the segment being slightly folded along the centre than to being actually swollen. If the ridge or fold is distinct, the apical margin of the segment bears a small central notch. This margin is distinctly visible in most specimens without the scaling being touched. If it is concealed the scaling should be lifted up or brushed sideways.

We have a series of both sexes from St. Jean du Maroni (type) and St. Laurent du Maroni, French Guiana (E. Le Mout), and Aroewarwa Creek, Maroewym Valley, Surinam (S. M. Klages). The type is labelled September, and Mr. Klages found his specimens in April and May.

3. *Ammalo aurata* Butl. (1875) (text-figs. 6, 7, 10)

The specimens from South-East Brazil are deep buff-yellow, but similarly coloured examples occur also among *A. insulata*. The deep colouring was the only difference which Butler noted when describing *aurata* from a single Brazilian female from Espiritu Santo. It was a shot in the dark, but nevertheless a hit. *A. aurata* occurs on the Lower Amazons and in South-East Brazil. A female in the Tring Museum bears the locality label "La Merced, Chanchamayo." The specimen, however, was not received direct from the collector, and as we have not seen any other specimens of *aurata* or of *insulata* from the Andes countries of South America apart from Colombia, the before-mentioned female probably did not come from Peru, but from the eastern side of the continent. I consider *aurata* a Brazilian species which has extended its range into the Amazon valley (Pará, Manáos), and in the south is found as far west as Tucuman and Paraguay.

While in the two previous species about one-third of the frons is blackish, this colour extends in *aurata* to one-half. This distinction appears to be somewhat more reliable than the difference in the yellow coloration of the wings above referred to. The pectinations of the male antenna are decidedly longer than in the

TEXT-FIG. 6.—*Annilo aurata*.

" " 7.— " "

previous species, those of the central segments being about as long as the shaft of three segments. The difference in the female antenna is less evident, but quite appreciable under the microscope. The length of the forewing varies as much as in *A. insulata*.

The dorsal processes of the ninth tergite of the **male** (text-fig. 6, P, dorsal view) are much shorter and much broader than in *A. insulata*, and apically more tapering on the inner side than on the outer. The valve (V) is reduced to a narrow and weak strip, presumably without function, but covered with scaling, as is the case with the valve of the other species. The harpe (H), on the other hand, is very strongly developed, being much larger than in *insulata* and *arravaca*. Its shape is also quite different, the apex being divided into a sharply pointed dorsal prong and an obtuse ventral lobe. These apical projections are not quite the same on the two sides of the body, and also vary in the different individuals. The harpes are so long that their apices are nearly always visible without the scaling being brushed aside. The tenth tergite is pointed, as in *A. insulata*. A ventral view of the organs of copulation (text-fig. 7) reveals another distinction of *aurata*. Below the short funnel from which the penis-sheath (Pen) projects we find on each side a strongly chitinised short process not present in the other species. The processes are not alike, the left one being much larger and more regularly curved and pointed than the one of the right-hand side. The tips of both are directed towards the left side. Above them we find the setiferous claviform processes (P²) already mentioned under *A. insulata*.

The structure of the eighth sternite of the **female** (text-fig. 10) is very distinctive. A semicrescent-shaped, smooth, convex rim is formed around the orifice of the vagina, this wall being widened centrally, the widened portion corresponding

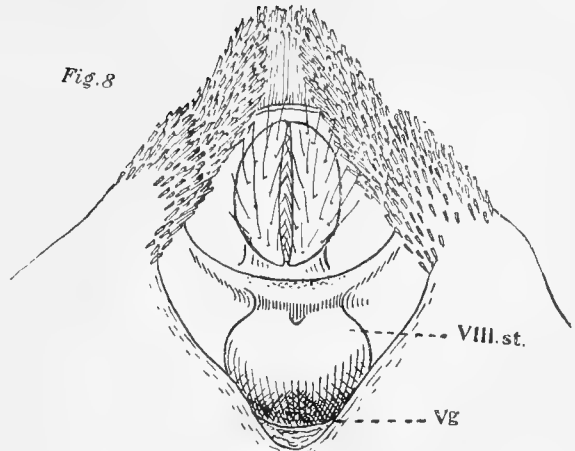


Fig. 8

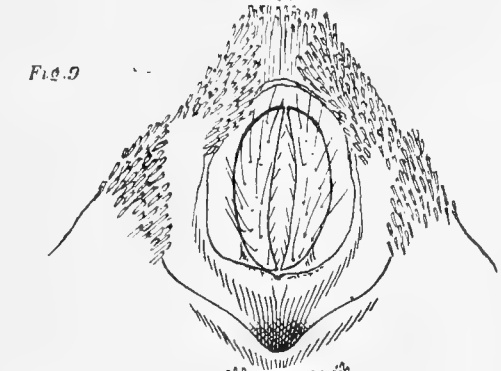
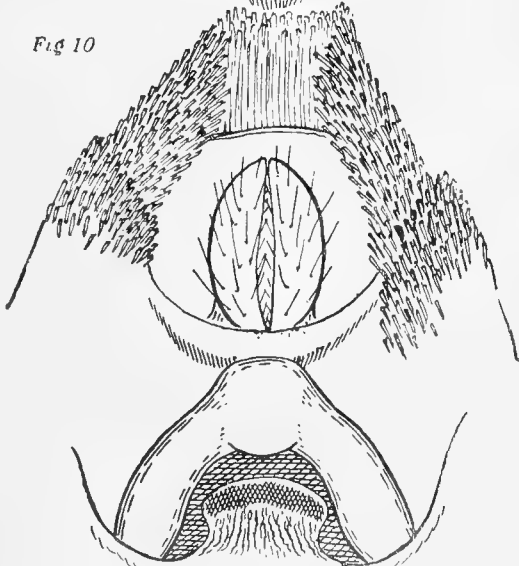


Fig. 9



TEXT-FIG. 8.—*Anomalo insulata*.
 " " 9.— " *arravaca*.
 " " 10.— " *aurata*.

to the callosity described under *A. insulata*. The seventh sternite projects into the cavity, the projection being broad, smooth and glossy, with the proximal portion longitudinally wrinkled.

The distribution of the three species suggests that they have attained their distinctions by means of geographical isolation and the attending differences in the surroundings. The most widely distributed species, *insulata*, is morphologically the central one, its characteristics agreeing more or less with those which I am inclined to attribute to the common ancestor.

Ammalo helops Cram. (1775) is another species of wide distribution according to Hampson, l.c., p. 83. I find it to be a composite species, which I hope to discuss on another occasion. *A. helops* is nearly allied to some species placed under *Elysius*. One of the main distinctions between *Elysius* and *Ammalo* in Hampson's *Lep. Phal.* is the difference in the position of the second subcostal branch of the forewing, this vein being said to arise from the cell in *Elysius*, and beyond it in *Ammalo*. We have, however, a number of specimens of *Ammalo helops* in which this vein branches off from the cell.

GENUS *Sychesia* Möschl. (1877)

In Hampson, l.c., p. 106, the first section of *Elysius* is characterised as follows: "Sect. I. (*Sychesia*). Antennae of male with long branches; hindwing with vein 8 absent." One species is placed in this section, *Elysius dryas* Cram. (1775). As this "*dryas*," however, is not a solitary species, but represents a type to which quite a number of species conform, there is sufficient reason for reviving *Sychesia* as a genus separate from *Elysius*.

The species of *Sychesia* resemble one another very closely in colour. If in the figure of *S. omissus*, in *Nov. Zool.* xvii. pl. 13, fig. 15, the black-brown colour were paler, and the orange of the abdomen and hindwing less bright, the figure might be considered a fairly accurate representation of several other species. There are some colour-differences in the various species, but they are as a rule so vague that a correct determination of the species from mere coloured figures appears to me impossible without recourse to the structure of the tail-ends. In several species there is a conspicuous scarlet tint on the abdomen and collar, but not in all specimens, and this colour may also appear in species which are usually without it. The length of the pectinations of the male antennae is not the same throughout the genus, the males of *omissus*, for instance, being easily distinguished by the short pectinations, and *subtilis* separated from *dryas* by the long pectinations. There are, however, other species which cannot be differentiated by the length of the pectinations from *dryas* or from *subtilis*. The structure of the tail-end of the male is rather complicated on account of the many processes and lobes of which the prehensile organs are composed. A clear view of them is only obtained on removal of the eighth segment; but for the purpose of identification this is hardly ever necessary, the apices of at least some of the processes being visible if the scaling at the tip of the abdomen is partially removed or brushed aside. The commonest of the species is fortunately not difficult to recognise, and therefore may with advantage serve as a starting-point in the determination of the series of species.

1. *Sychesia dryas* Cram. (1775) (text-figs. 11-15, 41)

In Cramer's figure the hindwing is blue-grey instead of yellow.* No such species is known; but as the figure is otherwise a fairly good representation of a male of *Sychesia*, considering the time of publication, we assume with Hampson that the colouring of the hindwing is due to some error. The specimen is said to have come from the West Indies, which geographical term at that time included Surinam.

We have three species from Surinam, obtained by Klages in the same locality on clearings in the forest, at night only. These are *subtilis* Butl. (1878), *omissus* Roths. (1910), and a third species which we treat, rightly or wrongly, as being *dryas* Cram. (1775). The name *fimbria* Möschl. (1877) apparently applies to *dryas*. The figure of *fimbria* is a misrepresentation, the head being much too small, the colouring of the thorax and forewing much too red, and the marginal band of the hindwing much too sharply defined and too narrow.

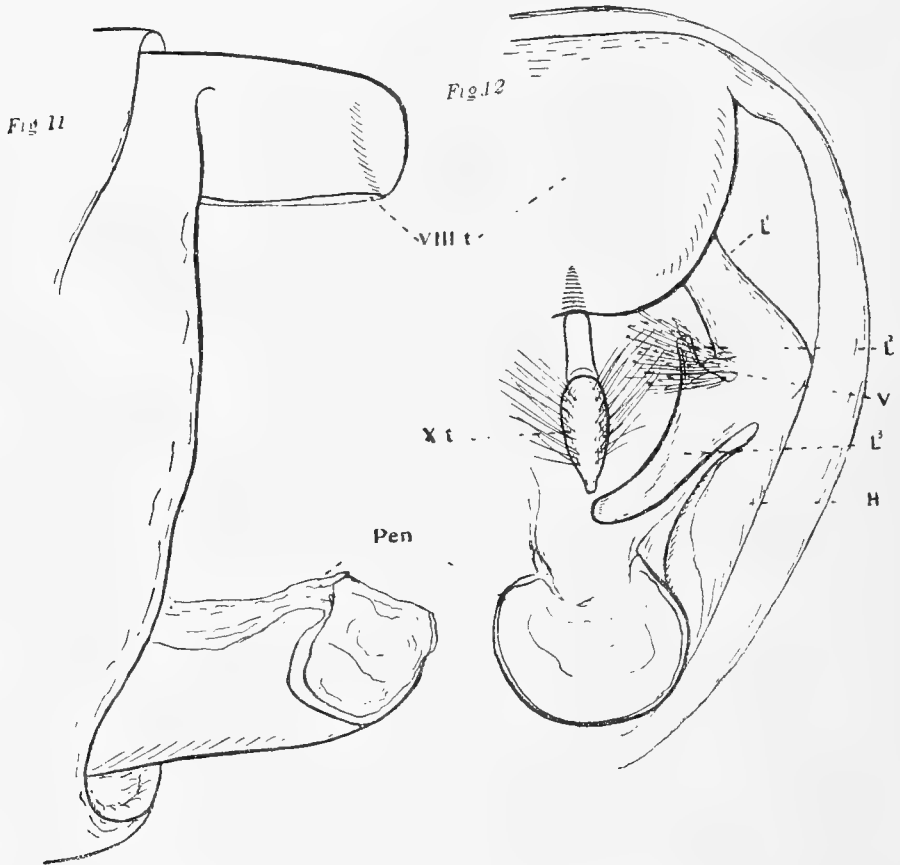
S. dryas is known to me from Surinam, the Caura R. in Venezuela, several places on the Upper Amazon, East and South-East Peru, East Bolivia, and South-East Brazil. In spite of this wide distribution there is no appreciable variation in the organs of copulation, with the exception of our only Brazilian male. The colour of the upperside of the forewing, head and thorax is mummy-brown in the darkest (freshest?) specimens, and a light tint of raw umber in the palest (faded?) examples. The collar has usually a rufous tint, but there is no red colouring noticeable at the base of the abdomen in any of our specimens. The density of the pale irroration of the forewing and the size of the pale discocellular spot are variable, as is also the width of the marginal border of the hindwing. In the male this border is usually separated from the apex of cell by the very pale yellow ground-colour or patches of it, but sometimes extends into the cell. In the female the border reaches always into the apex of the cell and usually expands to the base of the lower median vein, the angle between this vein and the cell remaining yellow in many specimens; on the underside the yellow area is still more restricted, either entering the cell or being bounded in front by the cell and the lower median vein; in the latter case the patch is rounded distally, the fuscous marginal band reaching to the anal angle and extending a little along the abdominal margin, as it often also does on the upperside.

The structure of the last three abdominal segments of the **male** is very characteristic. The last external scaled segment is the eighth. It is black, as in the other species, but quite different in the structure of its central dorsal portion. This difference is easy to see in most examples. When inspected from the anal side the apical margin of the eighth tergite will be found to be clothed with black scaling on the upperside and yellow scaling on the underside.

Compared with any of the other species, the central marginal area of this tergite is thicker and projects anad, being separated at each side from the lateral portion of the segment by a notch. If the scaling is removed the explanation of this difference between *dryas* and the other species becomes at once evident. The segment is centrally produced in *dryas* into a short broad process, which is very slightly impressed centrally, convex above and at the margins, and hollow, membranous and longitudinally folded beneath. The corresponding portion of the eighth tergite of the other species of the genus is but slightly produced and much less thickened than in *S. dryas* (cf. text-fig. 25, viii. t.). This process, of which

* Cramer's original drawings are in the British Museum; in the drawing of *dryas* the hindwing is less uniformly blue and the black border less sharply defined than in the published figure.

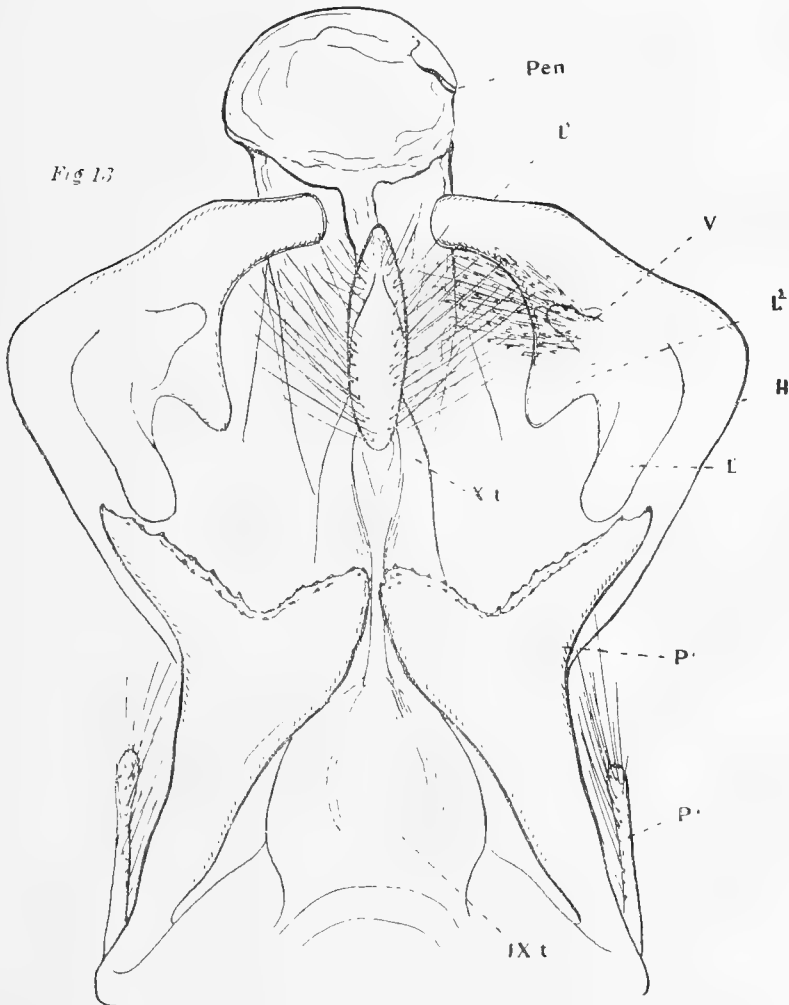
text-fig. 11 gives a lateral view, while in text-fig. 12 we look at it from the anal side and slightly from above, conceals the ninth tergite and its appendages, and must be removed if one wishes to study the latter in toto. Text-fig. 13 represents a dorsal view of the organs. From the lateral portion of the ninth tergite project on each side two processes. The upper one (P^1) is large, strongly chitinised and apically divided into two lobes, somewhat resembling a fishtail. The lobes are denticulate at the distal margin, the outer lobe being much longer than the inner one. The second process (P^2) is subcylindrical, weak, and bears numerous bristles. Below these processes long silky hairs are found, which are probably spreading hairs



TEXT-FIG. 11.—*Sychesia dryas dryas*, lateral view of eighth segment.
 " " 12.— " " " anal view of last segments.

of scent. The lateral clasping organ, the side-clasper, differs in true *dryas* and the Brazilian subspecies in the development of the apical processes of the harpe (H). We describe first the more widely distributed *S. dryas dryas*; in the anal view of the tail-end (text-fig. 12), three processes are visible at each side between the projection of the eighth tergite and the penis-sheath (Pen). These belong to the strongly developed harpe (H). The dorsal process L^1 is glossy, smooth and pale, being often partly concealed by the ninth tergite, as in our figure. The second process L^2 is situated on the proximal side; it is small and not easily seen; on the other hand, L^3 is very conspicuous, being very strongly chitinised, deep brown, and so much bent downwards that it usually lies on top of the penis-funnel (Pen). Between L^1 and L^3 , on the outer side, there is a small weakly chitinised lobe bearing

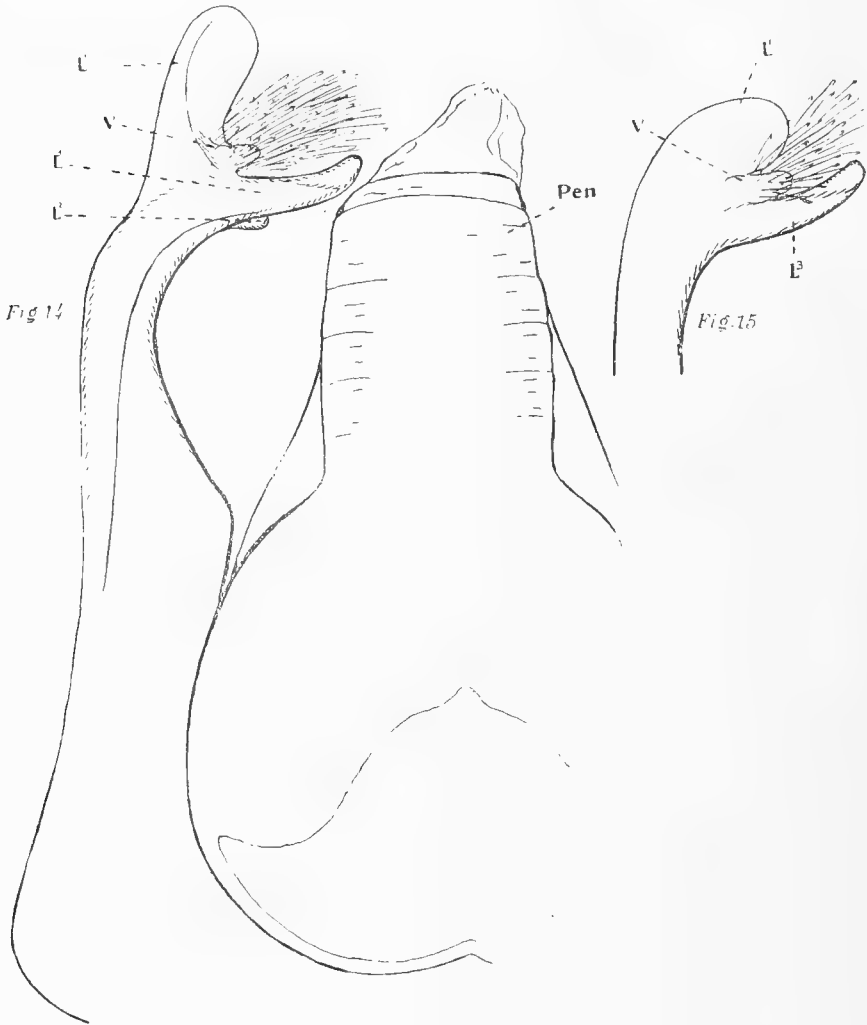
long scales. This lobe (V) is the remnant of the valve. We shall find the valve more normally developed in other species of *Sychesia*. The shape of the processes L¹, L², and L³ is, of course, different according to the direction from which they are inspected; cf. text-fig. 13, a dorsal view. The harpe is visible in its entire length if examined from the ventral side (text-fig. 14). In the Brazilian form of *dryas* (text-fig. 15) process L² is absent, and L¹ is bent towards the middle plane of the body instead of pointing upwards, and rounded. The tenth tergite is long and



TEXT-FIG. 13.—*Sychesia dryas dryas*, dorsal view of last segments.

slender, being bent down at the base and then curved upwards, the apex forming a sort of head and beak. The ninth and tenth tergites together, in a side-view, resemble to some extent a swimming bird, the former representing the body. The slightly widened head of the tenth tergite bears numerous bristles, as in the other species of this genus. The penis-funnel (Pen) has the shape of a flagon, the neck being more or less wrinkled transversely: the upperside of the penis-funnel is membraneous, and open along the centre. The penis-sheath, which projects from it, has no external armature, nor does it seem to have an internal armature in any of the species (text-figs. 12, 13, 16).

The **female** armature is very simple. The eighth segment, which is covered by the seventh, is strongly chitinised in all the species, non-scaled, glossy, deep brown, both the dorsal plate and the ventral one. The latter bears the distinctive characters, which are slight, but appear to hold good. In *dryas* the eighth sternite (text-fig. 41) has a smooth edge, which is slightly incrassate in the centre, the corners of the plate being either somewhat acuminate or rounded, not bearing a distinct tooth.



TEXT-FIG. 14.—*Sychesia dryas dryas*, ventral view.
 " " 15.— " " *tupus*, " "

According to the genital armature of the **male**, *S. dryas* consists of two subspecies :

a. *S. dryas dryas* Cram. (1775) (text-figs. 11-14, 41)

Harpe of ♂ with three apical lobes, the upper one compressed, pale, and polished, directed upwards.

French Guiana, Surinam, Caura River (southern affluent of the Orinoco), Upper Amazons, Peru and Bolivia.

b. *S. dryas tupus* subsp. nov. (text-fig. 15)

Harpe of ♂ with two apical processes, the upper one rounded and curved inward. The eighth sternite of the ♀ as in *S. d. dryas*.

Santa Catharina; one pair in the Tring Museum.

Halesidota basipennis Walk. (1856), from Pará, was based on a single female, now in the Oxford Museum. Dr. H. Eltringham, who has very kindly examined it for me, informs me that the edge of the eighth sternite is quite smooth. This would prove that the specimen belongs to *dryas*, and not to *subtilis* as I suspected from the locality. The females of *S. dryas tupus* and *S. dryas dryas* not being different, it is, of course, not possible to decide whether *basipennis*, from Pará, is the same as subsp. *tupus* or as subsp. *dryas*, or whether it represents a special subspecies from the Lower Amazon. To settle this point we must wait for the arrival of males. The Rev. A. Miles Moss having been stationed at Pará now for several years, this keen and successful lepidopterist will no doubt obtain a series of *S. dryas* in that most interesting district.

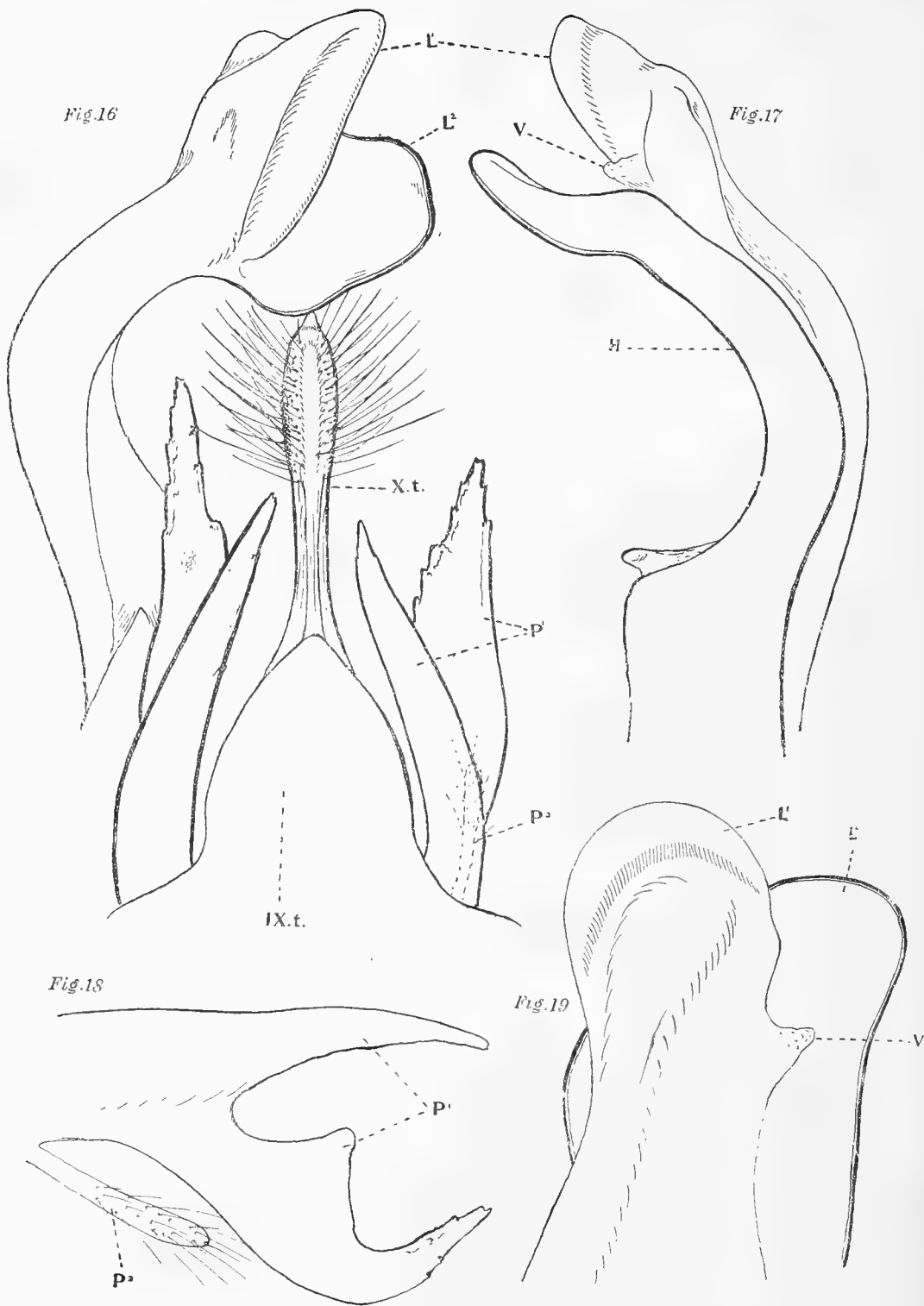
2. *Sychesia hora* spec. nov. (text-figs. 16-19)

The abdomen and hindwing perhaps a little deeper yellow than in *S. dryas*, otherwise the colouring the same as in certain specimens of that species. The black-brown border of the hindwing rather sharply defined in both sexes, in the male (we have only one specimen of this sex) not reaching the apex of the cell, and in the female (of which sex we have two specimens) extending to the point of origin of the upper median branch (vein 3).

The median projection of the eighth tergite of the **male** resembles that of the preceding species, but is shorter and vertically thinner. The process P¹ of the ninth tergite (text-fig. 16) is large, compressed and apically divided into two large prongs, of which the lower one is curved and bears a large tooth on the upperside, as shown in the lateral view represented by text-fig. 18. From the base of this process P¹, on the underside, projects the pale, slender, setiferous process P², not visible in a dorsal view of the organs. The side-claspers are strongly developed, and very different from those of *S. dryas*, although built on the same plan. The thin apical lobe of the valve (text-fig. 17, V, ventral aspect) is reduced to a small tubercle, densely covered with scales. The harpe (H) consists of a more deeply chitinised inner portion ending in a very broad lobe, L², and bearing proximally to the middle a tooth, and a pale, glossy and smooth outer portion also ending in a broad lobe, L¹. The harpe is much broader centrally than it appears to be from our text-figs. 16 and 17, which represent it in a dorsal and ventral aspect; the lateral aspect is given in text-fig. 19. The tenth tergite (x.t.) is similar to that of *S. dryas*; the apex is grooved above. In spite of all the differences, the similarity between the organs of *S. dryas* and *hora* can easily be perceived.

One male from Cananche, Cundinamarca, Colombia, September 1903 (M. de Mathan); and two females from Popayan, Cauca Valley.

I do not find any structural difference between these **females** and *dryas*, and I only place them with *hora* on account of the locality. Perhaps they are *dryas*; but as *hora* is undoubtedly closely allied to *dryas*, the absence of a structural difference in the eighth segment is not surprising.



TEXT-FIG. 16.—*Sychesia hora*, dorsal view.
 " " 17.— " " , ventral view of clasper.
 " " 18.— " " , lateral view of process P'.
 " " 19.— " " , lateral view of clasper.

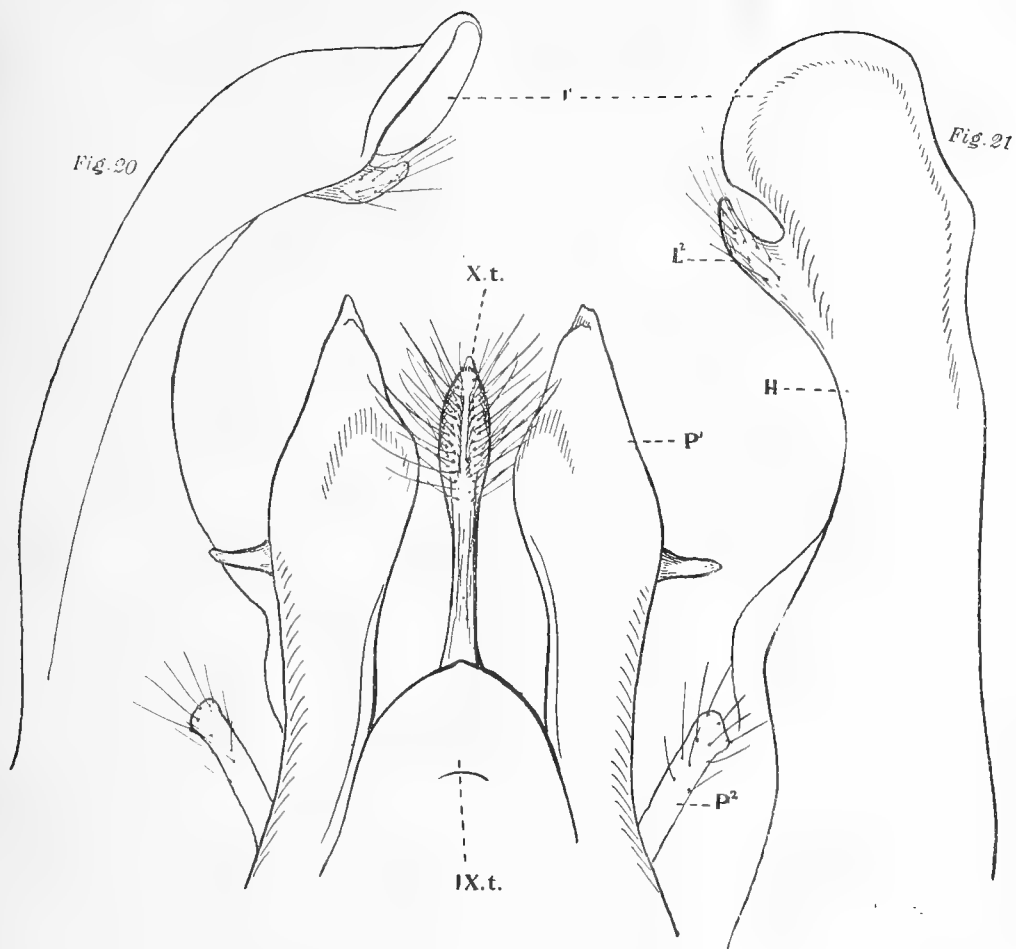


Fig. 20

Fig. 21

L¹

H

P¹

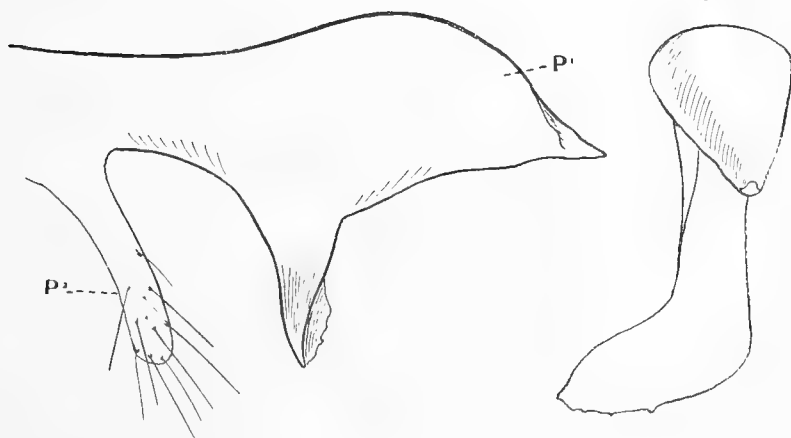
P²

X.t.

IX.t.

Fig. 23

Fig. 22



TEXT-FIG. 20.—*Sychesia naias*, dorsal view.
 " " 21.— " " , ventral view of clasper.
 " " 22.— " " , lateral view of processes P¹ and P².
 " " 23.— " " , anal view of process P¹.

3. *Sychesia naias* spec. nov. (text-figs. 20–23, 42)

If the preceding species, *S. hora*, is the Colombian representative, then *S. naias* must be regarded as replacing it in Central America. Colouring as in *S. hora*; in one of the females a distinct yellow spot in front of the base of vein M^1 (=vein 3) on the hindwing.

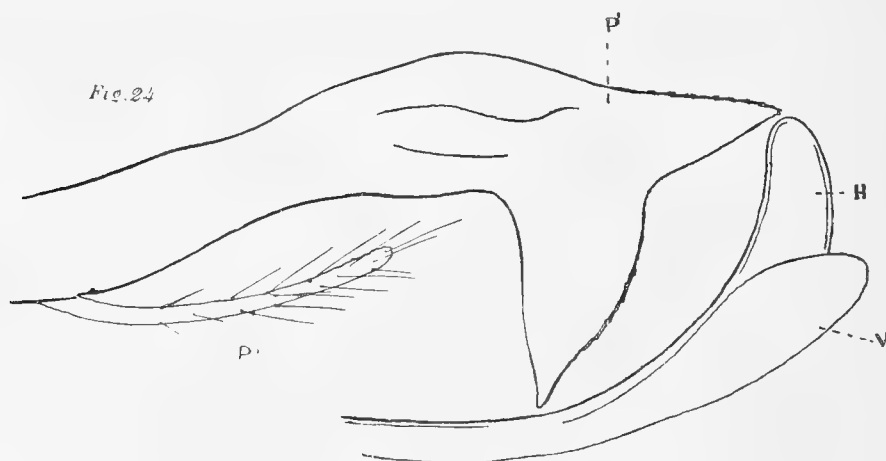
The **male** organs differ as follows: The large process (P^1) of the ninth tergite (text-fig. 20) is apically divided into two lobes, of which the lower one (text-fig. 22) is directed downward, and is curved so much sideways that in a dorsal view (text-fig. 20), its apex projects from under the dorsal lobe. In an anal aspect (text-fig. 23) this ventral lobe somewhat resembles a stocking in shape. The setiferous process (P^2) is thicker than in *hora*. The valve-portion of the side-clasper has entirely disappeared; the harpe (H) ends in two lobes; the outer lobe (L^1) is broad, rounded, and smooth (text-figs. 20, 21), and the inner lobe (L^2) narrow, curved, deeper brown, and bears bristles (as does the corresponding lobe in the other species of *Sychesia*). The apex of the tenth tergite (x. t.) is rather narrower than in the previous species.

In the **female** the eighth sternite has at each side two teeth (text-fig. 42), one being placed at the lateral angle, and the other, which is sometimes small or obtuse, further inward.

We have: one male from Guapiles, Costa Rica, June (W. Schaus), type; three females from Costa Rica (Ch. Underwood); and one female from Rio Wanks, Nicaragua, September 1905 (M. G. Palmer).

4. *Sychesia erubescens* spec. nov. (text-figs. 24, 43)

Besides *S. dryas tupus* there occurs in Santa Catharina a species closely allied to it, but different in colour and structure. This *erubescens* stands about in the same relation to *S. dryas* in the South as *naias* and *hora* in the North.



TEXT-FIG. 24.—*Sychesia erubescens*, lateral view.

A small tuft of scales behind the antenna, the collar, sides of the breast, apices of the coxae, inside of the forecoxa, and the larger portion of the trochanters scarlet,

the abdomen also shaded with scarlet, in the male to a greater and in the female to a lesser extent, the abdominal area of the hindwing, especially in the male, with a distinct red tint.

Larger than *S. dryas*, the fuscous border of the hindwing as broad as in that species, but the fringe from the anal angle to the lower median vein yellow. There is another red-tinted species in Brazil, described below, which has a much narrower terminal band in the male than *erubescens*.

The central prominence of the eighth tergite of the **male** is much smaller than in *S. dryas*. The large process P¹ (text-fig. 24) of the ninth tergite is more compressed distally than in *S. dryas*, and the two lobes into which it is divided (fishtail) are different, the lower being shorter than in *S. dryas*, and the upper one rather longer. The setiferous, slender lobe P² projects from the underside of P¹. The side-clasper is very different from that of *S. dryas*. The valve-portion (text-fig. 24, V, lateral aspect) is well developed instead of being reduced to a small tubercle, and the harpe (H) is quite simple, being curved inward apically.

The eighth sternite of the **female** is thicker in the centre than in *S. dryas*, and bears at the lateral angle a very prominent tooth (text-fig. 43).

We have one pair from Santa Catharina.

5. *Sychesia subtilis* Butl. (1878) (text-figs. 25-30, 44)

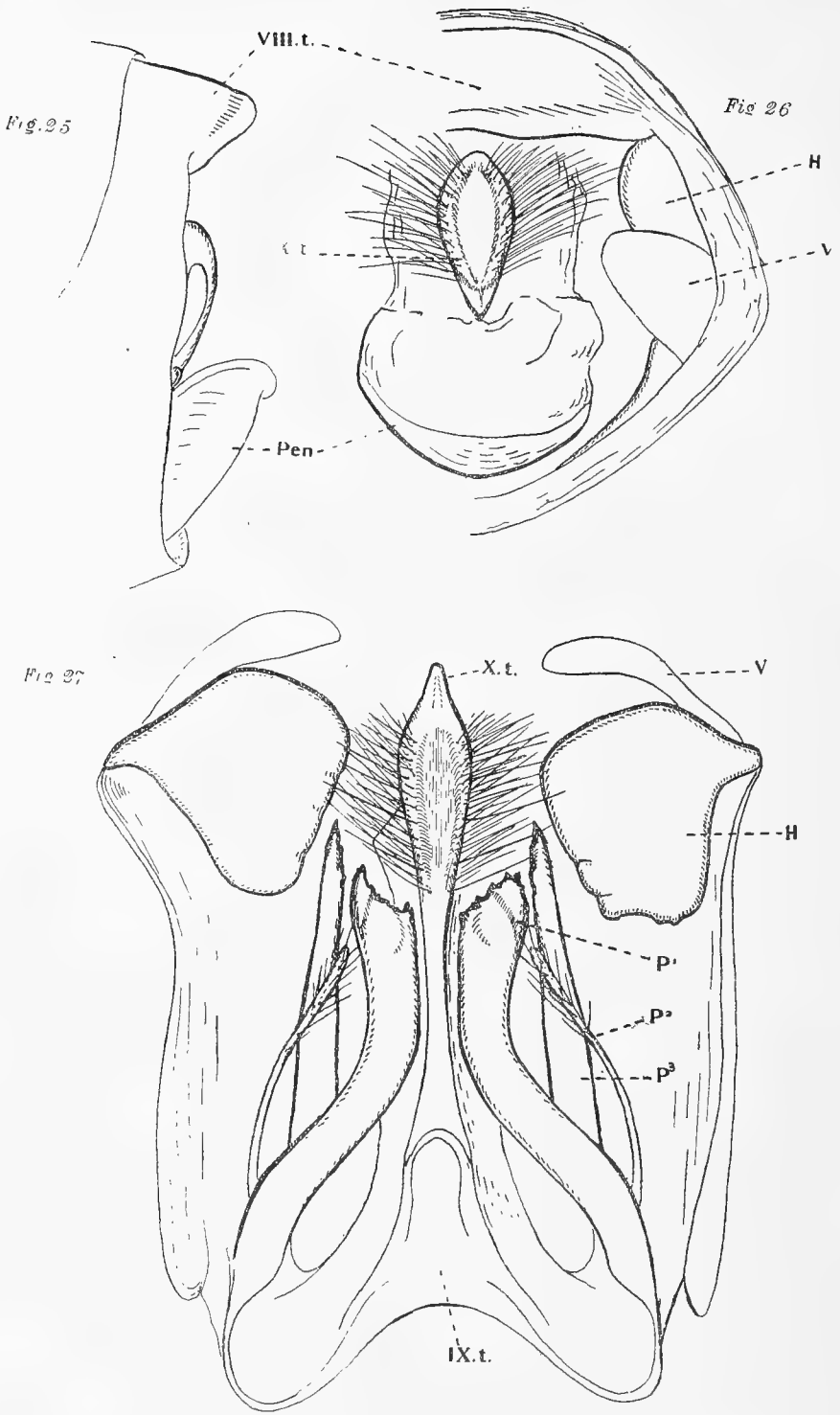
On an average smaller than the preceding species in both sexes; the colouring is the same as in *dryas*, except that the fuscous costal and distal marginal borders of the hindwing, in the male, are narrower and more diffuse both above and below.

In most specimens the upper angle of the cell of the hindwing projects rather less than in *S. dryas*. The pectinations of the male antenna are distinctly longer than in specimens of *dryas* of the same size, and the distance between the scape and the first pair of pectinations is shorter than in most *S. dryas*.

The genitalia of the **male** are different. The eighth tergite projects much less than in the *S. dryas*, and is less incrassate (text-fig. 25, viii. t.). The ninth tergite has three processes on each side, not two, as in *S. dryas* (text-fig. 27, P¹, P², P³; dorsal view, corresponding to text-fig. 13). The upper process (P¹) is the largest; it is apically widened, but very much less so than in *S. dryas*. P² is longer than in *S. dryas*. P³ arises from the underside of P¹ about its centre, and is straight and pointed.

The feebly chitinised valve (V) is much larger than in *S. dryas*, but still appears as a weak appendage of the harpe, and bears rough scaling. The harpe is large and strongly chitinised (H), the portion most easily seen being a deeply coloured glossy apical lobe which is directed upward. Below this lobe (L¹) the inner margin is sinuate, a second, small lobe (L²) being formed. The tenth tergite almost agrees with that of *S. dryas*, except that the apex is rather broader and mesally more or less impressed longitudinally.

In the **female** the eighth sternite has not a smooth edge laterally, but is here conspicuously folded and notched, and bears a large pointed tooth at the angle (text-fig. 44).



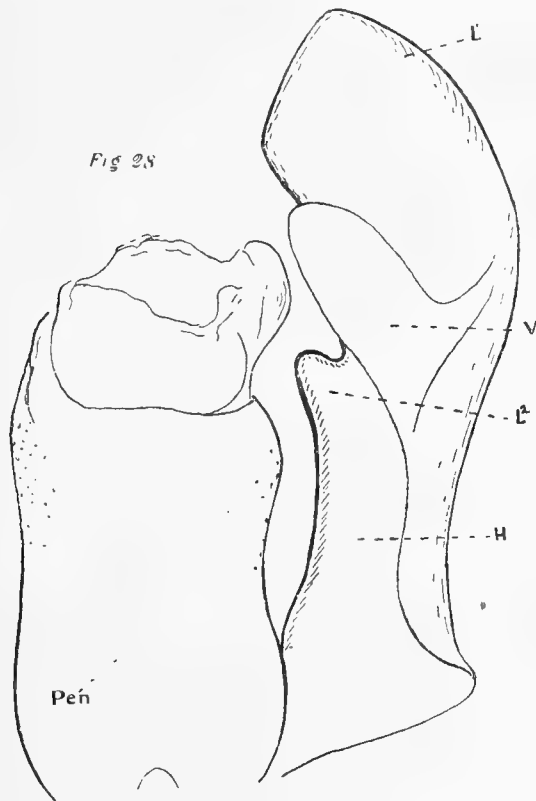
TEXT-FIG. 25.—*Sychesia subtilis megalobus*, lateral view of eighth segment.
 " " 26.— " " " , anal view of last segments.
 " " 27.— " " " , dorsal view.

According to the male genitalia there are two geographical forms :

a. *S. subtilis megalobus* subsp. nov. (text-figs. 25-29, 44)

Harpe with a very large apical lobe (text-fig. 29, L¹); process P¹ of the ninth segment dorsally convex apically.

A series in the Tring Museum from Aroewarwa Creek, Maroewym Valley,



TEXT-FIG. 28.—*Sychesia subtilis megalobus*, ventral view of clasper and penis-sheath.

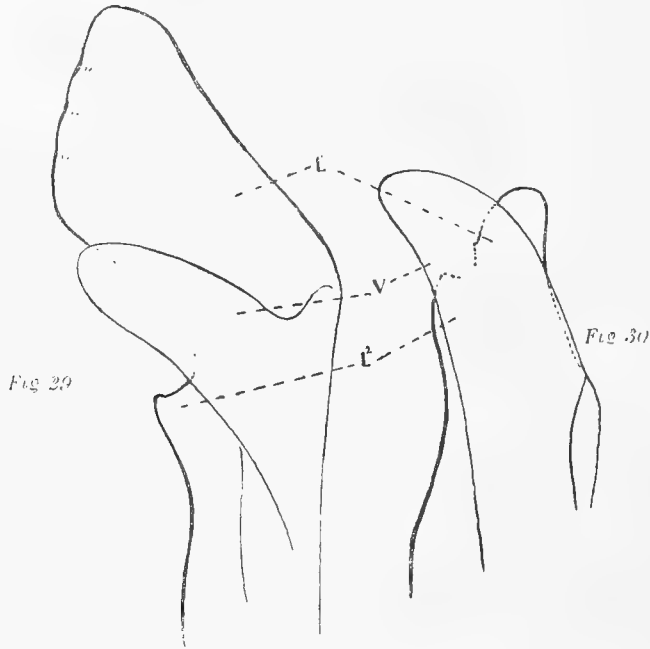
Surinam, February (S. M. Klages), type; La Union and Guaypa, Casra R., Orinoco, October, November, December, April, May (S. M. Klages); Trinidad (F. Birch).

b. *S. subtilis subtilis* Butl. (1878) (text-fig. 30)

Apical lobe of harpe small (text-fig. 30, L¹). Process P¹ of the ninth segment apically compressed; process P² shorter and slenderer than in *megalobus*; apex of the tenth tergite dorsally more convex.

The type of *subtilis* came from the Rio Sapo, Amazons, caught on December 13, 1874; the other specimens mentioned by Butler as far as they are preserved in the British Museum are *S. dryas dryas*, for instance the second Rio Sapo example caught on December 14. As the specimen labelled by Butler "type" is the present insect, the name should be retained for this species, although Hampson has sunk the name as a synonym of *S. dryas*. I cannot find the Rio Sapo; is Sapo a misspelling of Napo? In the Tring Museum another male, obtained on board the

steamer on the Amazon between Manacapurei and Teffé at the end of April 1906 (S. M. Klages). This and the type are the only examples I have seen of the Amazonian race. In the type-specimen the lobe of the valve (V) is almost as deep brown as the harpe.



TEXT-FIG. 29.—*Sychesia subtilis megalobus*, ventral view of clasper.
 " " 30.— " " *subtilis*, " " "

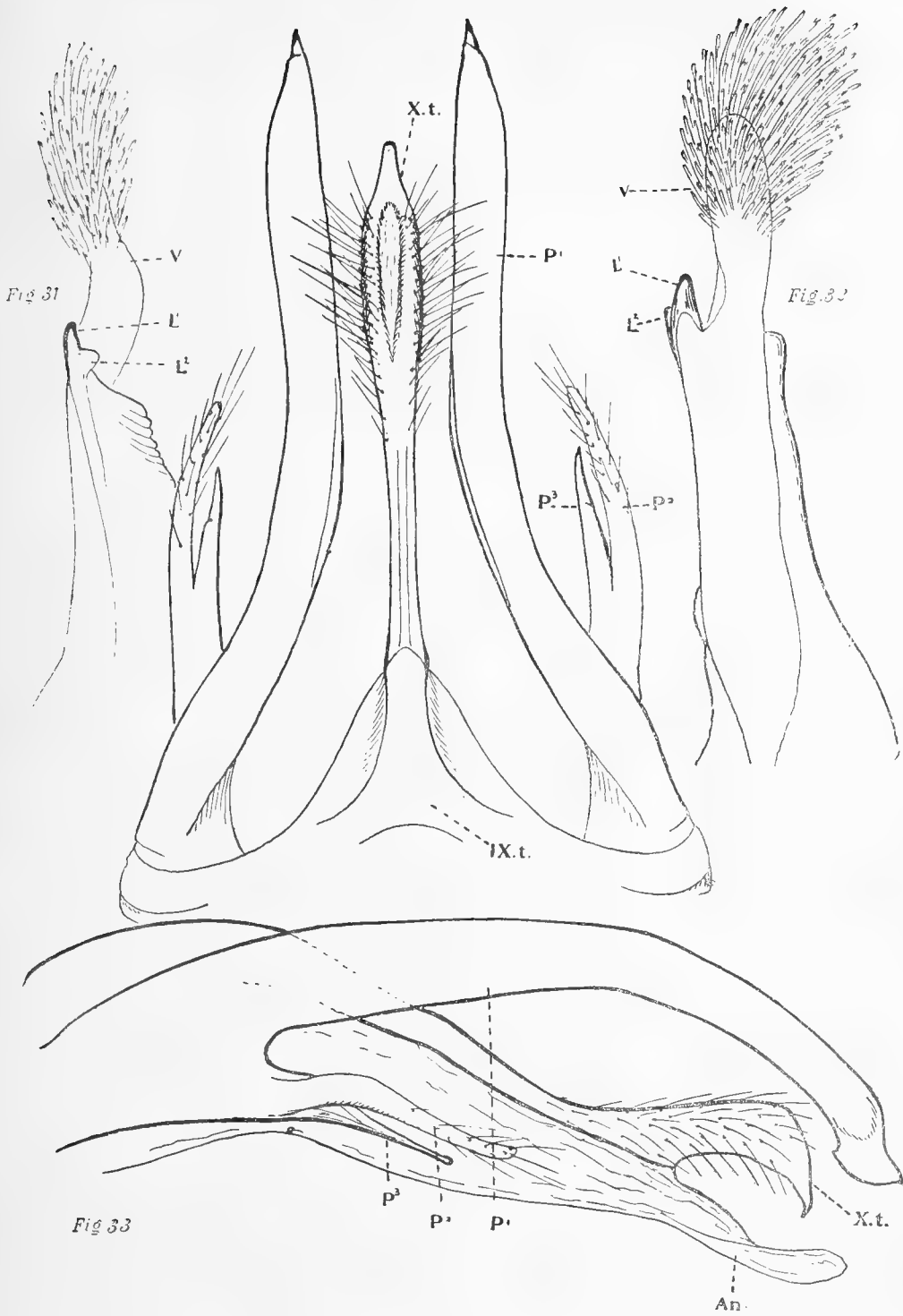
6. *Sychesia dimidiata* spec. nov. (text-figs. 31–33, 45)

Similar to *dryas* in colour, but the tips of the coxae pure buff-yellow, the yellow area of the hindwing more sharply defined and extending from the base to the lower angle of the cell or only to the point of origin of the upper median branch (type), the area agreeing in size more or less with that of the female of *S. dryas*, except in being deeper yellow.

The ninth tergite of the **male** bears a very long upper process, P¹ (text-fig. 31) and a short, forked, lower process, the two prongs of which are homologous to P² and P³ of *S. subtilis*. Text-fig. 33 represents these organs in a lateral aspect. The valve (V) is long and slender, and the harpe (H) very much smaller than in the previous species, ending in a short lobe (L¹), which bears a tooth on the inner side representing a second lobe (L²). Only the apical lobe of the harpe is plainly visible, if the long scaling situated at the edge of the eighth segment is removed, L¹ lying inside this segment. The tenth tergite (x. t.) is longer and less curved than in the previous species; the setiferous apical portion bears a dorsal median groove. The penis-funnel is cylindrical, not flagon-shaped.

We have three males from Muzo, Rio Cantinero, Colombia, 400 m. (A. H. Fassl).

Two females from Quevedo, West Ecuador, in the Tring Museum possibly belong to this species. The terminal band of the hindwing is somewhat broader than in the male. The edge of the eighth abdominal sternite is thinner in the centre than laterally; the lateral angle bears a tooth (text-fig. 45).

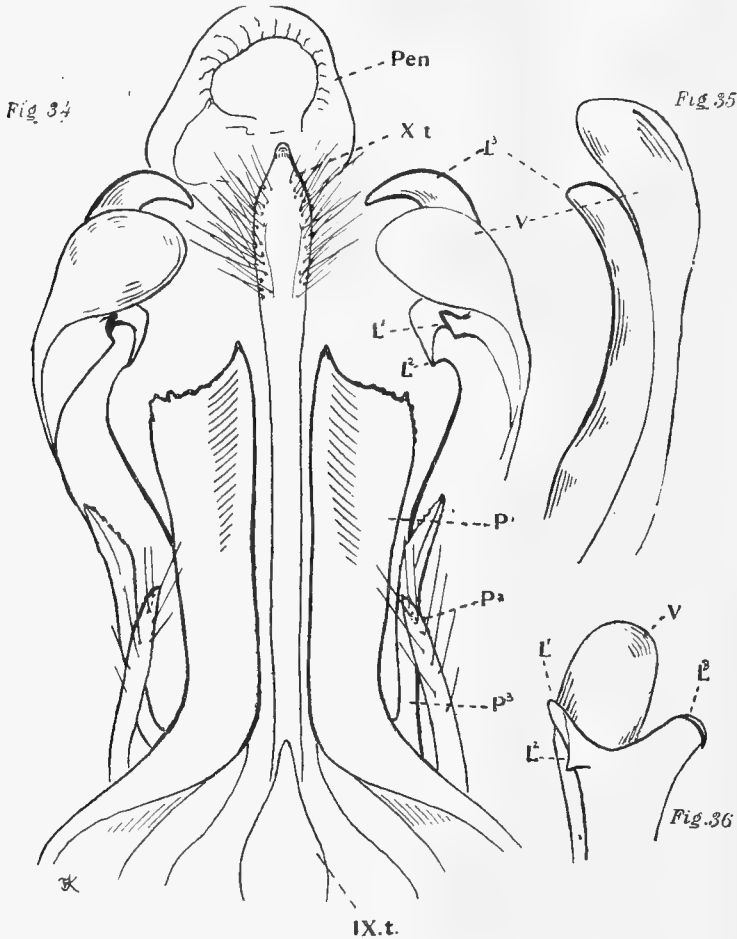


TEXT-FIG. 31.—*Sychesia dimidiata*, dorsal view.
 " " 32.— " " , ventral view of clasper.
 " " 33.— " " , lateral view of ninth and tenth tergites.
 An = anus.

7. *Sychesia coccina* spec. nov. (text-figs. 34-36, 46)

In the scarlet tint of the collar, breast, coxae, abdomen and the basi-abdominal area of the hindwing similar to *S. erubescens*. Somewhat smaller than that species, the pectinations of the antenna in the male longer, the scape reddish yellow on the outside, and the terminal border of the hindwing much narrower in the male and broader in the female, than in *erubescens*.

The ninth tergite of the **male** has three processes on each side, as in *S. subtilis*. The large process P¹ is compressed apically and rather strongly curved beyond the



TEXT-FIG. 34.—*Sychesia coccina*, dorsal view.
 " " 35.— " " , ventral view of clasper.
 " " 36.— " " , inner view of clasper.

middle, the apex being dentate and obliquely truncate, with the dorsal angle projecting (text-fig. 34). Process P² is stouter than in *subtilis* and P³ is shorter. The side-claspers are quite different. The valve is well developed (V, text-figs. 34-36), while the lobes of the harpe (H) are small. In a ventral, semilateral aspect (text-fig. 35) the valve and harpe are seen lying side by side, being merged together except the apices, but recognised by the difference in colour and surface-structure. Viewed from this direction only the largest lobe (L³) of the harpe is visible. In a dorsal view (text-fig. 34) the large lobe (L³) is much more curved, and below it two

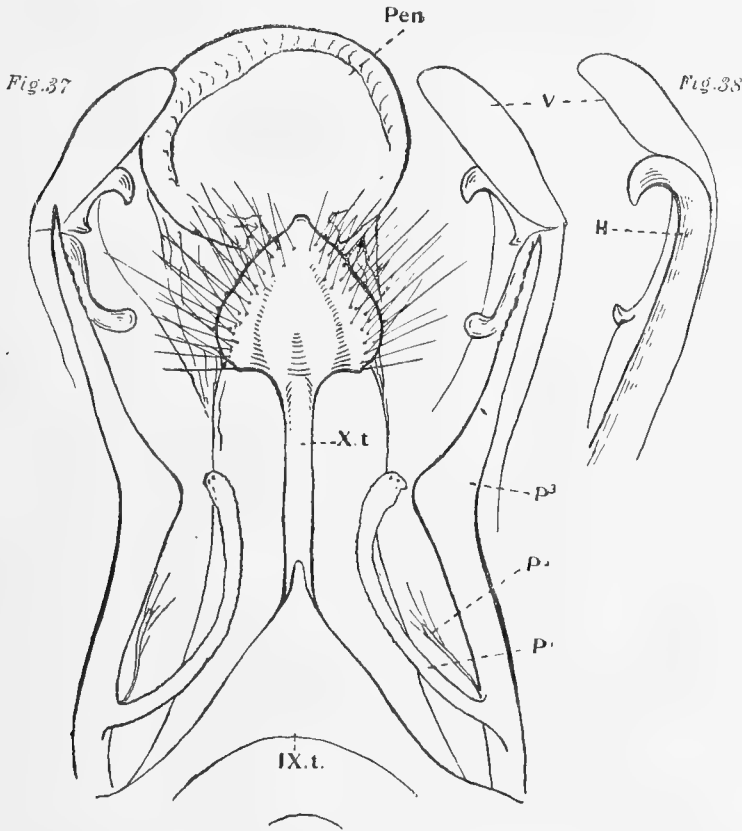
short processes are seen (L^1 and L^2). These are more easily inspected from the inner side (text-fig. 36), the clasper being bent sideways. The three lobes are all strongly chitinised, being red-brown. The tenth tergite resembles that of *S. subtilis*, the tip pointing sharply downwards. The penis-funnel is cylindrical, being slightly widened proximally.

The eighth sternite of the **female** has the edge thicker than in *S. erubescens*, notched in the centre and slightly undulating at each side of the middle. The lateral tooth is conical (text-fig. 46).

We have a pair from Porto Alegre, Rio Grande do Sul. The female recorded by Hampson from the same province, as subsp. 1 of *dryas*, also belongs to *coccina*.

8. *Sychesia pseudodryas* Roths. (1909) (text-figs. 37-38)

Originally described from a single male from La Oroya, South-East Peru; several other specimens were subsequently recorded in *Nov. Zool.* 1910, p. 41, of which the pair from Sta. Catharina is my *erubescens*. On the other hand, the male



TEXT-FIG. 37.—*Sychesia pseudodryas*, dorsal view.
 " " 38.— " " , ventral view of clasper.

mentioned, *l.c.*, under *dryas* from Suno, Upper Rio Napo, belongs to *pseudodryas*. We have now also a male from Sitio, Costa Rica, May (W. Schaus), another from Calama, Rio Madeira, Amazonas, below Rio Machados, August—October 1907 (W. Hoffmanns), and a pair from Teffé, Upper Amazons, October 1912 (Dr. Ducke). These specimens agree closely in structure, and all the males have the terminal

band of the hindwing diffuse; some specimens have no red tint at all, while others have the collar, abdomen, abdominal area of the hindwing and the yellow portions of the breast and coxae more or less tinted with scarlet, like the type-specimen of the name *pseudodryas*. In the female the yellow area of the hindwing is sharply defined, reaching to the point of origin of M^1 , being incurved below M^2 and excurved at SM^2 , the mummy-brown distal border extending to the abdominal margin.

The eighth tergite of the **male** is thin, in a vertical sense, and not much produced. The ninth tergite has on each side three processes (text-fig. 37). P^1 is very slender, curved upwards and anad, and is, like the very thin setiferous process P^2 , a dorsal branch of the main process P^3 . The latter is elbowed in the centre, where it is slightly widened, and tapers to the apex, the apical portion of the inner edge being denticulate. In the development of these processes *S. pseudodryas* stands quite isolated. The side-clasper resembles that of *S. coccinea* to some extent. The valve (text-fig. 38, V) is well developed, and the harpe (H) bears a small unciform ventral apical lobe and two small lobes farther proximally. The tenth tergite (x. t.) is very characteristic, its apical widened portion being very broad, reversed cordiform, and at least twice as broad as in any of the other species.

The eighth sternite of the **female** resembles that of the females placed above under *S. dimidiata* (text-fig. 45), but the thin central third of its margin is incurved.

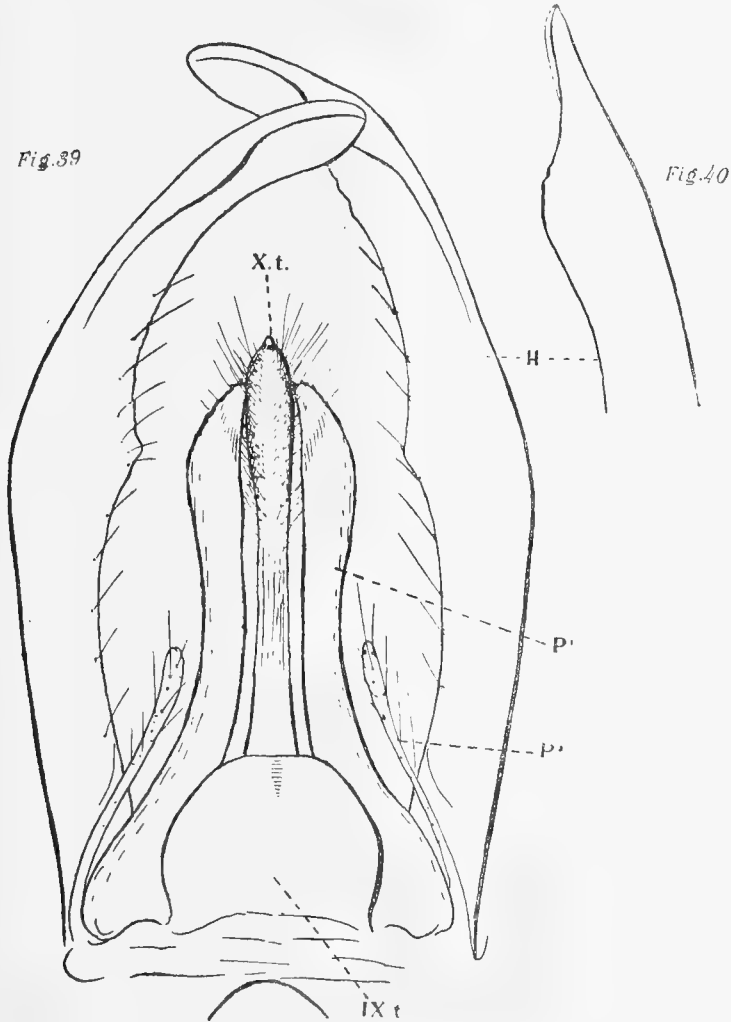
9. *Sychesia omissus* Roths. (1910) (text-fig. 39, 40, 47)

The male is in colour similar to *S. dryas*; the thorax and forewing are usually deeper blackish brown, the collar is red in most examples, and there is occasionally also a reddish tint at the base of the abdomen; the hindwing is, like the abdomen, usually rather deeper yellow than in *dryas*, the distal marginal band posteriorly more sharply defined and here as a rule also broader, and the median branches are more prominently blackish brown. The size varies a great deal, the forewing having a length of from 22 to 31 mm. The pectinations of the antenna are always much shorter than in *dryas*, a difference easily perceived if the two species are placed side by side, while there is no reliance on any of the colour-differences mentioned. The female also has a deeper colour than in most *dryas*.

The genitalia of the **male** are very distinct. The eighth tergite is only slightly produced. The ninth tergite (text-fig. 39) has on each side two processes, the upper one (P^1) being large, curved in the middle and obliquely truncate at the apex; it appears almost straight from the centre to the apex in a dorsal view. P^2 projects from P^1 on the underside. The side-clasper is quite different from that of the other species; it consists of a single, long, curved, strongly chitinised sclerite which tapers at the apex (text-figs. 39, 40). The two claspers cross one another beneath the eighth tergite, and are visible without dissection on account of their great length. The tenth tergite (x. t.) is essentially as in *S. dryas*, only the widened apical portion being rather longer. The genitalia are neither individually nor geographically quite constant.

The two **females** which I place here differ very little from *dryas*. The margin of the eighth tergite is less convex in the centre, and the lateral angles bear a tooth (text-fig. 47). Considering the great difference in the claspers between *S. dryas* and *omissus*, one would have expected to find a trenchant distinction between the females as well.

We have this species from : Aroewarwa Creek, Maroewym Valley, Surinam, February 1905 (S. M. Klages), 1 ♂; La Union and Guaypa, Caura R., Orinoco, March and April 1902, September—October, 1901, November—December, 1902 (S. M. Klages), 11 ♂♂, 11 ♀♀; Oxapampa, Peru, 1 ♂ (type); Chanchamayo, Peru, October 1901 (Garlepp), 1 ♂; Huancabamba, Huánuco, Peru (E. Böttger), 5 ♂♂; S. Domingo, Tinguri, R. Huacamayo, and La Oroya, Carabaya, South-East Peru, 6000 ft., 3400 ft., and 3100 ft. respectively (G. R. Ockenden), nearly



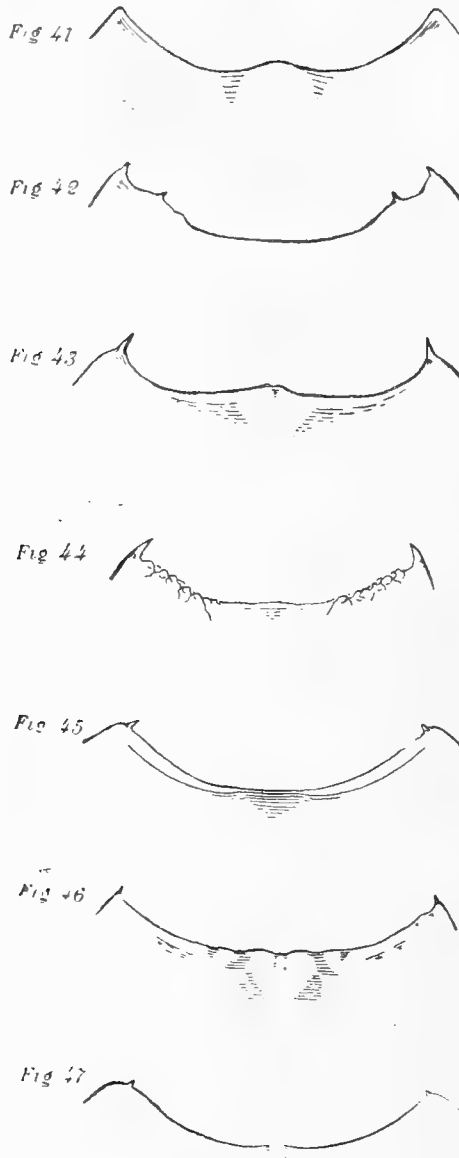
TEXT-FIG. 39.—*Sychesia omissus*, dorsal view.
 " " 40.— " " , ventral view of apex of clasper.

all the year round, 17 ♂♂, 1 ♀; Salampioni, Bolivia, 800 m., August 1901 (Simons), 1 ♂; Yungas de Coroica, Bolivia (Garlepp), 1 ♂.

The other specimens mentioned under *omissus* in *Nov. Zool.* 1910, p. 41, do not belong to this species.

The distribution of *S. omissus* is essentially the same as that of *S. dryas dryas*. The type-specimen is labelled Oxapampa, N. Peru; it was received from a German dealer, and I presume that the name is meant for Oxabamba in the province of

Huánuco, to the east of Cerro de Pasco. The collector probably was a Saxon, pronouncing p as b and b as p.



TEXT-FIG. 41.—*Sychesia dryas*, eighth sternite of ♀.
 " " 42.— " *naias*, " " "
 " " 43.— " *erubescens*, " " "
 " " 44.— " *subtilis*, " " "
 " " 45.— " *dimidiata*, " " "
 " " 46.— " *coccinea*, " " "
 " " 47.— " *omissus*, " " "

On the preceding pages I have dealt with insects corresponding to two species of the *Lep. Phal.* of Hampson, *Ammalo insulata* and *Sychesia dryas* (as *Elysius dryas* in Hampson). We have seen that under the garb of *insulata* three species are concealed, and that there are nine species of *Sychesia* instead of one (Hampson, *dryas*)

or three (Rothschild, *dryas*, *pseudodryas* and *omissus*). The conclusion to be drawn from the results of our investigation is obviously this : In order to arrive, without evidence from breeding, at fairly accurate systematics it is insufficient to study only the external aspect of the specimens. A cataloguer, however, who has to cover the ground at a rapid pace, cannot be expected to spend his time in tedious and minute investigations. That is a matter for a specialist. The scientific study of Lepidoptera, unfortunately, has not yet arrived at such a state of development that there is a sufficiency of specialists supplementing the army of general lepidopterists. It would therefore be of great advantage if the lepidopterist, after having acquired a general knowledge of the order, concentrated his efforts on a single family or a branch of a family. Here he can do substantial systematic work absolutely necessary for our understanding of nature. If I thus plead for specialisation, I do not wish to say a word against the collector who gathers the specimens for the sake of the pleasure they give him, nor against the lepidopterist who is made happy by the receipt of new species which he can name. Their efforts are a great asset in science, although there have been, and there are still, members of the scientific world who pour cheap satire on them. The very pleasure which the collector derives from the products of nature, and the communion into which he enters with nature when contemplating and comparing the species and pondering over their habits and life-history, are of such high aesthetic value in our neurasthenic times that from this point of view even, quite apart from any incidental contribution to science pure or applied, the occupation with nature's products should be greatly encouraged in a nation. Who would call it accidental that there are so many more collectors of insects among the truly progressive nations than among the others? I am not pleading against the collector pure and simple, the man who is brought in close touch with nature and is the happier for it. There are, however, many among them who could achieve more, many who have the knowledge, the time and the opportunity. It is the inclination to concentrate their efforts and deepen them which is missing; and to awaken this inclination wherever it may be dormant and to foster it wherever it has begun to stir, I should, if I could, paint in glowing terms the need for specialisation and a morphological treatment of the Lepidoptera.

A second point quite clearly demonstrated by the foregoing pages is this : Specimens of the various species, or of most of them at any rate, have been in the hands of lepidopterists and not been recognised as belonging to different species, and I have stated over and over again that the external differences are, in nearly every case here dealt with, quite unreliable. If that is so, could these species be recognised from coloured drawings only? Certainly not. Therefore the dictum of my friend Charles Oberthür, that no name is valid which is not accompanied by a good figure, does not cover all cases. If any such proposal could ever be adopted—the proposal certainly draws attention to a weak spot in descriptive entomology, and will exercise a good influence whether officially adopted or not—we must replace “a good figure” by “a figure sufficient for the determination of the species or variety.” Such a practice in nomenclature, however, would invalidate many names which are accompanied by “good” figures, these figures not showing any of those details in structure by which alone the particular species can be recognised, structures of which neither the author who named the species nor the artist who made a drawing of it had taken cognizance.

The differences between the species above described being essentially such

as are not visible outwardly, the specific distinguishing characters cannot have developed by means of selection on the part of insectivorous enemies.

In some of the species we find small but obvious morphological differences in the specimens from certain localities: geographical varieties or **subspecies**. In other forms which are also geographically separated the differences are so great that we must consider them specific; these species replace one another, one being a substitute for the other: **vicariant species**. And lastly, we have species the ranges of which overlap or are more or less the same, the species occurring side by side, often actually flying together: **sympatric species**. This gradation in the evolution is represented, for instance, by (1) *Sychesia dryas dryas* and *S. dryas tupus*, which exclude one another geographically, but are essentially the same insect; (2) *Ammalo insulata*, *A. arravaca* and *A. aurata*, which also inhabit separate geographical areas, but are so different that they might occur together without mixing and amalgamating; and (3) *Sychesia dryas*, *S. subtilis* and *S. omissus*, which occur together. If the differences in the first category become greater, we have the second. If the range of the second category extends, we have the third category of forms. This is true not only for insects, but also for other classes of animals, the exceptions appearing to me more seeming than real. The important part which geographical isolation plays in the evolution of the subspecies and vicariant species is so obvious that it is hardly necessary to dilate on it. Which, however, is the factor or group of factors that led to the appearance of the structural differences we have described? Mendelism cannot account for the geographical phenomenon embodied in the problem; selection by insectivorous enemies being likewise excluded, there remains the influence of the anorganic surroundings, which are different in the various geographical areas, in connection with geographical isolation. If the geology of a continent or archipelago is known, i.e. the relative ages of the districts or islands, one can generally predict with a high degree of accuracy where subspecies and vicariant species will be found.

I have assumed that the various species of *Sychesia*, and the three yellow *Ammalo*, have retained the colouring of the respective ancestors from which they are derived, and for this reason are externally so similar to one another. The opinion, however, might be advanced that these species were originally also different in colouring, and their present sychromatism is a secondary development due to mimicry. This cannot be a true explanation, because (1) most of the species are not sympatric, and (2) the subspecies of *S. dryas* and *S. subtilis* are alike in colour and different in structures in a similar way as are the species, but to a much lesser degree.

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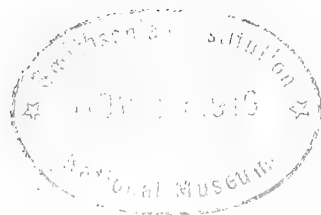
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NOVITATES ZOOLOGICAE.

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No. 2.

NEW NEOTROPICAL *GEOMETRIDAE*.

By LOUIS B. PROUT, F.E.S.

SUBFAMILY OENOCHROMINAE

1. *Dolichoneura foveata* sp. nov.

♂, 31–32 mm. Closely similar to *convergens* Warr., differing chiefly in its much smaller size and in structure. Antennal ciliation rather shorter (about as long as diameter of shaft).

Forewing with M approaching SC at a good distance from base, to make room for a large, elongate fovea which extends to the base of M²; rather less pure white than *convergens*, the proximal submarginal shade thickened, thus closely approaching or in places almost confluent with the distal one.—*Hindwing* with R¹ and R² arising very near together and curving so as to approach even more closely in the middle of their course; distinctions from *convergens* in colour and markings as on forewing.

Underside much less pure white than in *convergens*.

Aroewarwa Creek, Maroewym Valley, Surinam, July, 1905 (S. M. Klages), type in coll. Tring Mus.; St. Jean de Maroni, French Guiana, August, paratype in coll. L. B. Prout.

An interesting link between Warren's *Dolichoneura* and *Pycnoneura*, which are scarcely separable generically.

2. *Pycnoneura monops* sp. nov.

♂, 37 mm. Head with palpus and scaled surface of antenna blackish brown. Thorax, abdomen, and legs concolorous with wings, only the foreleg in part darkened.

Forewing with apex moderately sharp, termen almost straight, only behind M² very faintly subconcave; SC¹ from cell*; drab, with sparse, inconspicuous dark irroration; lines fine; antemedian extremely faint, sinuous, from nearly one-third costa to one-third hindmargin; postmedian better expressed, from before two-thirds costa, oblique to R¹, with a slight tooth outward at SC⁵, strongly toothed at R¹, thence lunulate-dentate, with slight proximal curves between the radials and behind M²; discal dot large (1 mm. in diameter), black; an extremely faint, crenulate whitish subterminal line; termen with the usual black dots before and behind SC⁵, the rest of the series very minute to obsolete; terminal line slightly and fringe

* Exceedingly few examples in this genus (always difficult to obtain) were known to me when I prepared my revision for *Gen. Ins.*, fasc. 104. I am now able to say that in the species which passes for *oxypteraria* Guen (unfortunately described from a ♀) and in its close ally *turpis* Warr., as also in *rectilineata* Warr., SC¹ is always well stalked, in *cinerea* Butl. usually very shortly stalked, in *ablataria* Guen. (which is perhaps more of a *Dolichoneura*) always from the cell.

decidedly brown, the latter with a fine pale line at base.—*Hindwing* with the dark lines reproduced, much nearer base (at about one-fourth and one-half), subterminal slightly better discernible than on forewing; termen and fringe somewhat brown.

Both wings beneath without the lines; forewing with discal dot weaker than above, terminal dots wanting.

Chanchamayo, Peru, December 1901 (Garlepp). Type in coll. Tring Mus.

Probably near *cinerea* Butl., but the straight termen and large cell-dot make it recall *Dolichoneura nigrinotata* Warr. more than any *Pycnoneura*.

3. *Pycnoneura protrusilinea* sp. nov.

♂, 43 mm. Head with palpus deep brown, almost black. Thorax and abdomen concolorous with wings.

Forewing with termen slightly more convex from apex to R^3 than in the other species, the posterior concavity slight; SC^1 longer stalked (2 to 2.5 mm.) than in the other species; pale drab, densely irrorated almost throughout with deep purple-brown (nearly seal-brown), so as to leave free only a subcostal streak, two bands on which stand the lines, and some ill-defined subterminal cloudings; costal edge narrowly blackish; lines bistre; antemedian at one-third, with a deep, almost V-shaped projection proximad in the middle (its apex between M and M^2), otherwise nearly straight; postmedian at two-thirds, lunulate-dentate, the tooth outward on R^1 long, the lunules inward between the radials and between M^2 and SM^2 deep; terminal line black, with two or three small triangular swellings in anterior part, otherwise very slightly swollen between the veins; fringe rather bright brown, with a very slender and inconspicuous pale line at base.—*Hindwing* similar, with an apical cloud of the pale ground-colour (weakly dark-irrorated); first line ill defined; second arising little beyond the first of forewing, lunulate-dentate, very strongly bent outward between R^3 and M^2 .

Underside uniform drab.

Chanchamayo, Peru, November 1901 (Garlepp), type in coll. Tring Mus.; Potaro River, British Guiana, April 1908, 1 ♂; Aroewarwa Creek, Maroewym Valley, Surinam, April, May and September 1905, 2 ♂♂, 1 ♀. All the specimens from the Guianas (in coll. Tring Mus., collected by S. M. Klages) are slightly smaller than the type and look a little paler, but are in poor condition.

Nearest *turpis* Warr., but with less pointed forewing, browner lines (in *turpis* tawny olive), much more irregular postmedian and slightly different venation.

4. *Leptoctenopsis tatochorda* sp. nov.

♀, 33–36 mm. Head and palpus blackish, mixed with red; palpus fully twice as long as diameter of eye. Body and legs concolorous with wings, foretibia and foretarsus darkened on inner side.

Forewing with apex minutely produced, termen minutely sinuate behind apex, then somewhat bowed, oblique; vandyke brown, finely irrorated with black scales; lines rust-reddish, the postmedian mixed with blackish and slightly ochreous-shaded proximally; antemedian fine and not strong, from scarcely one-fifth costa, excurved, but with an inward bend between fold and SM^2 ; discal dot black; postmedian line from costa 2 mm. before apex, almost straight to hindmargin, little beyond middle, only with inappreciable sinuosities in anterior part; an

extremely vague purplish shade distally to this line, then a row of very feeble interneural dark dots (in the paratype obsolete); terminal interneural dark dots rather strong anteriorly, becoming progressively weaker; a whitish line at base of fringe, distal half of fringe pale.—*Hindwing* with termen very slightly more convex than in *melusina* Prout, etc., tornus scarcely produced; concolorous with forewing, the postmedian line and its accompanying shades continued but antemedian, termen without dark dots, only with weak undulate brown line; fringe as on forewing.

Underside grey, forewing with costal margin bright ochreous and apical region suffused with rosy; both wings with large discal dot and slight indications of pale subterminal line, forewing with a slightly sinuous and oblique, hindwing with a curved, postmedian line; termen and fringe marked nearly as above, but more weakly.

Dominica, April 1905 (type) and January—February 1905 (E. A. Agar), in coll. Tring Mus.

Related to *melusina* Prout, but differing in longer palpus, more convex margins, brown colour and straight postmedian line.

5. *Leptoctenopsis translativena* sp. nov.

♂ ♀, 35 and 31 mm. Face and palpus blackish. Head, body and legs otherwise concolorous with wings. Antennal structure about as in *calexaria* Walk.

Forewing with apex acute, very minutely produced, termen curved; smooth drab-grey, without dark irroration; a very fine, scarcely appreciably darkened antemedian line from nearly one-third costa to beyond one-third hindmargin, fairly straight; a feeble discal mark; postmedian line better expressed except at costa, slightly pale-edged distally, from beyond two-thirds hindmargin, slightly more oblique than termen to R, here curved or bent, anteriorly with some slight indentations; a faint whitish line close to termen, only developed in anterior part, lunulate-dentate, forming slight teeth outwards both on veins and folds; folds between this and termen somewhat whitened; terminal line blackish, thickening between the veins (especially in anterior part), accompanied proximally by a fine brown line; fringe rather dark, with a whitish line at base.—*Hindwing* with R² arising behind middle of DC, in the ♂ very much behind (presenting an extraordinarily Noctuid appearance); antemedian line and cell-mark wanting, subterminal line scarcely traceable; the rest nearly as on forewing.

Underside without markings.

Amazon, without further data. Type in coll. Tring Mus. Also a worn ♀ from the Felder collection labelled "Amboina"—certainly an error, presumably attributable to the reprehensible practice of employing abbreviations for geographical names in labelling.

6. *Leptoctenopsis subrufa plagiogramma* subsp. nov.

♂ ♀, 39–45 mm. Ground-colour above variable, in general brighter than in *subrufa subrufa* Warr., from Ecuador, more rufous, with an admixture of fulvous; forewing with traces (at least on the veins) of a dark antemedian line, which is strongly angulated near costa, then very oblique inward; a thick, very oblique dark line across both wings, formed as in *mena* Druce; a row of blackish vein-dots

beyond this, on forewing close to it, though receding somewhat posteriorly, on hindwing strongly excurved beyond the cell-dot.

Underside with almost black, usually thick, postmedian line, its position almost corresponding with that of the vein-dots of upperside.

French Guiana: Nouvean Chantier, November (type ♂), December (1 ♀); St. Jean de Maroni, November (2 ♀ ♀). Type in coll. L. B. Prout.

Antenna of ♂ dentate, with the cilia a little longer than diameter of shaft; hindtibia of ♂ with hair-pencil; hindwing of ♂ with a tuft of hair on abdominal margin opposite an orifice and flap on the pleura of the third abdominal somite. Possibly a separate species; of *subrufa subrufa* I know only Warren's two originals, both ♀, but the shape and the characteristic venation (see *Gen. Ins.* fasc. 104, p. 83), as well as the subapical markings and other points of agreement, induce me to unite the two forms.

7. *Achlora doris* sp. nov.

♂ ♀, 30-32 mm. Exceedingly like *cuprinaria* Guen., and *zoë* Prout, but considerably smaller. Structure of the latter, but with the antennal pectinations little longer than in the former (in *cuprinaria* about three to three-and-a-half times diameter of shaft, in *doris* about four times, in *zoë* six to seven times). Differs from both in that the ground-colour is more rufous (less purple), especially in the distal area, and that the postmedian line of the forewing is more strongly curved about the radials, being **oblique inwards** at the costal end, not (as in all the other known species) about vertical to the costa.

Brazil: Para (Stuart), type ♂ and two others (♂ and ♀) in coll. Tring Mus., one dated November 17, 1892. A ♂ from British Guiana, July 17, 1902 (C. B. Roberts) in coll. Brit. Mus.

8. *Achlora euctenachlora* sp. nov.

♂, 43 mm. Akin to *injunctaria* Hb., and belonging to the same structure-group—hindwing with R^3-M^1 separate and without hair-tuft beneath. Larger, the antennal pectinations considerably longer, about ten times diameter of shaft, and reaching more nearly to the apex (extreme tip lost). Ground-colour slightly more reddish, with the postmedian and subterminal lines rather more deeply dentate, the latter (especially on the under-surface) more sharply expressed. Termen of hindwing rather markedly straightened from apex to R^3 (almost as in *coenobiata* Feld.).

"Brazil" (probably Amazon region). Type in coll. Tring Mus., ex coll. Felder.

I feel no doubt this is the specimen on which Warren founded his genus (subgenus) *Euctenachlora*, for Felder's unique type of *coenobiata* has lost the antennae (except the extreme stumps, which have not sufficiently long pectinations) and possesses the hair-tuft on hindwing beneath; but if his statement that the antenna is bipectinate to **apex** was founded on accurate observation, a slight breakage must have subsequently occurred. No other specimen extant in the Tring Museum would have met the requirements.

9. *Macrotres commatica* sp. nov.

♂, 66-74 mm. Closely allied to *netrix* Cram., but larger, the ♂ antenna without the specialised hairs on the distal third.

Forewing with costal margin proximally more strongly darkened than in *netrix*, the beginning of the subbasal line less sharp; antemedian row of vein-dots accompanied distally by a stronger elongate dot or dash on the fold; discal dot rather larger; terminal line simple, thick, as in *cordovaria* Guen.—*Hindwing* with apex rather less rectangular (intermediate in shape towards *cordovaria*), the white cell-mark quite differently shaped from that of the allies, being considerably shortened (the red patch on which it stands consequently enlarged), its distal margin retracted after crossing R^2 , its posterior part thus restricted to a very narrow streak along the distal edge of DC^3 .

Peru: Pozuzu, Huannco, 900 m. (W. Hoffmanns); Huancabamba, Cerro de Pasco (E. Boettger); S. Domingo, Carabaya, 6000 ft., November 1901, wet season (Ockenden). Bolivia: Charaplaya, 1300 m., June 1901 (Simons). In coll. Tring Mus., the type from Huancabamba.

10. *Ergavia roseivena diphora* subsp. nov.

♂, 35–38 mm. Smaller than name-typical *roseivena* Prout, more recalling *biangulifera* Prout (which I now believe to be another race of *roseivena*), but rather more deeply coloured—more rufescent or brownish; lines about as in the latter; differs from both in having a conspicuous tuft of raised blackish scales on DC^{2-3} of the hindwing as well as of the forewing, which is possibly of sufficient morphological significance to indicate a distinct species; dark submarginal markings beneath rather weak, a good deal broken.

Sapucay, Paraguay, September 13, 1901 (type), November 20, 1902, January 6, 1903, November 1904, December 11, 1904 (W. Foster); La Plata Town, a worn example. All in coll. Tring Mus.

11. *Ergavia eris* sp. nov.

♂, 44 mm. Exceedingly like *roseivena* Prout, especially on the upperside; similar in structure. Face and palpus redder, more irrorated and spotted with black. Wings more mixed with olivaceous, especially in distal area.

Forewing with the basal and discal raised tufts not, or scarcely, mixed with black, the basal not very dense; costal margin proximally mixed with rufous, and much dotted with black; postmedian line less acute outward behind R^3 , merely forming a rounded lobe, on which stands a scarcely perceptible tooth at M^1 .—*Hindwing* with the wavy lines stronger, one immediately behind the cell-mark particularly well developed, somewhat thickened; postmedian line with much less pronounced tooth outward behind R^3 and especially behind M^1 .

Underside easily distinguishable from that of *roseivena* by being much less pale, the costal margin of the forewing with distinct dark dots or minute strigulae, both wings with the postmedian line of the upperside conspicuously reproduced.

Calama, Rio Madeira, below Rio Machados, August–October 1907 (W. Hoffmanns). Type in coll. Tring Mus. A rather worn ♀, precisely similar and scarcely larger, from Rio Demerara, in the same collection.

12. *Hedyle albipannosa* sp. nov.

♂, 44–50 mm. Similar to *heliconiaria* Guen., but considerably larger. Antennal pectination rather longer, tapering more rapidly and ceasing earlier. Both wings rather less narrow, with termen fuller.

Forewing with a broad whitish streak from base along M (extending about

from cell-fold to submedian fold), towards end of cell bending backward a little and broadening, bounded posteriorly by M^2 , its anterior and distal boundaries less defined, the latter about 3 mm. from termen; the blackish shading proximally to the white costal triangle stronger and broader than in *heliconiaria*, a more noticeable brown admixture midway between the triangle and the termen; termen clouded with blackish from before R^3 to behind M^1 .—*Hindwing* not mixed with whitish along middle of termen.

Peru: Huancabamba, Cerro de Pasco, 6000–10,000 ft. (E. Boettger), type and three others; Pozuzo, Dept. Huanuco (Hoffmanns), 1 ♂; all in coll. Tring Mus.

13. *Phellinodes klagesi* sp. nov.

♂, 50 mm. Face brown. Palpus brown, somewhat mixed with blackish, at the beginning of third joint pale; not extending much beyond frons, third joint less long and slender than in *cascaria* Schaus.

Wings coloured nearly as in dull males of *cascaria*.

Forewing slightly narrower, with termen less projecting at R^3 ; whitish costal triangle scarcely indicated except by a slight pale line marking its distal end, bounded by a slight dark line; brown apical patch less clear, more tinged with chestnut, more strongly irrorated, the black submarginal spot in it well developed; elongate discal streak obsolete, replaced by a quadrate spot in front of R^3 just outside the cell; blackish shading along fold obsolescent; black shade along mid-termen wanting.—*Hindwing* nearly as in *cascaria*, rather more mixed with whitish, except costally and distally.

Fonte Boa, Upper Amazons, May 1906 (S. M. Klages). Type in coll. Tring Mus.

14. *Phellinodes costilunata* sp. nov.

♀, 44 mm. Closely similar to *muscerdata* Feld., but with the blunt projection in termen behind R^1 longer, the termen behind this projection straight (in *muscerdata* very faintly subconcave).

Forewing more variegated, a whitish costal patch in front of the white post-discal spots distinct, 5.5 mm. long, 1.5 mm. deep, its margin regularly curved: an elongate dark cell-mark; the white spots placed on more noticeable dark shading, that between R^1 and R^2 reduced, obliquely placed (in *muscerdata* parallel with the veins), its proximal end slightly broader than its distal, nearly touching R^1 .—*Hindwing* similar to that of *muscerdata*.

Paramba, Ecuador. Type in coll. Tring Mus.

15. *Phellinodes albistria* sp. nov.

♂, 38–41 mm. Superficially similar to *coscoja* Dogn., the forewing with termen rather more oblique, the colour mostly darker, more variegated; structurally nearer *uniformis* Warr., the hindwing beneath showing the median vein near base thickened, bent, and partly hairy, and the scaleless depression adjoining it in the cell.

Forewing with similar colouring to that of dark *coscoja*, an ill-defined oblique dark patch in cell at about the bifurcation of the cell-fold (broader and stronger than the similar mark in *satellitata* and *uniformis*); anterior to this patch and continuing as a narrow streak or line almost to termen is an ill-defined white mark, oblique at first, then straight along R^3 , bounding the dark apical patch; the white dots proximally to the apical patch are smaller than in *coscoja* but conspicuous,

roundish, not confluent, that in the fork of the last two subcostal veins very minute, the two beside R^1 less so.—*Hindwing* darker than in *coscoja*.

Underside with the dark apical patch hardly differentiated, the other markings reproduced, though not very sharp, the oblique whitish shade broadened posteriorly.

Peru: La Union, Rio Huacamayo, Carabaya, 2000 ft., December 1904, wet season (G. R. Ockenden); Huancabamba, Cerro de Pasco (E. Boettger). All in coll. Tring Mus.; the first-named the type.

16. *Phellinodes minutipuncta* sp. nov.

♂, 44–48 mm. Coloration of *uniformis* Warr., except for the lack of the dark apical patch, but belonging to the section *Hyphedyle* Warr. (♂ venation not distorted).

Forewing shaped as in *uniformis* or with the points at apex and extremity of R^1 slightly sharper, the sinus between consequently deeper; a minute white dot between SC^5 and R^1 just beyond the origin of SC^4 (in one aberrant specimen obsolete); sometimes also a still minuter dot anteriorly to this and in one example another posteriorly.—*Hindwing* as in *uniformis*.

Underside nearly as upper, but rather more pale-mottled, both wings with vague dark discal mark, that of forewing elongate, that of hindwing more roundish.

La Oroya, Rio Inambari, Peru, 2100 ft., September 1904 (dry season), March 1905 (wet), November–December 1905 (wet) (G. R. Ockenden). Eight in coll. Tring Mus.

♀, 49 mm. Slightly paler and more rufescent than the ♂, forewing more strongly produced at R^1 , the white dot between SC^5 and R^1 larger, the one anteriorly thereto present but minute, the posterior extended to a length of 1.5 mm., its proximal end rounded, its distal tapering to a point; a slender elongate dark cell-mark and a subcostal spot scarcely beyond middle of cell more distinct than in any ♂. Underside similar. Taken with some of the males, September 1904.

17. *Phellinodes lamellifera* sp. nov.

♂, 44–45 mm. Coloration of *leptosiata* Feld. except for the lack of the whitish apical dash, but belonging to the section *Hyphedyle* and with the antennal teeth still longer than in *leptosiata*.

Forewing intermediate in shape between *leptosiata* Feld. and *uniformis* Warr., showing a very weak angle at the end of R^1 and extremely slight concavity between this and apex; beneath rather less mixed with white than in *leptosiata*, except sometimes in the distal area.—*Hindwing* beneath more mixed with white than forewing, with traces of a somewhat angulated fuscous submarginal fascia, almost touching the termen in middle.

Fonte Boa, Upper Amazon, July 1907 (type) and July 1906. Both in coll. Tring Mus., collected by S. M. Klages.

SUBFAMILY HEMITHEINAE

18. *Rhodochlora endognoma* sp. nov.

♂, 46–50 mm.; ♀, 56 mm. Shape and structure of *roseipalpis* Feld.; general coloration similar, except that the proximal band of the hindwing is dark grey, with scarcely any red admixture.

Forewing with the proximal lunulate or V-shaped fragment of rosy antemedian

line between M and SM² placed on a conspicuous yellow patch, which is nearly as extended longitudinally as transversely; the yellow patch between M² and SM² against postmedian line also enlarged, nearly or quite as extended longitudinally as transversely.—*Hindwing* broadly yellow from close to base to beyond antemedian band; this band broader and more distally placed than in *roseipalpis*, reaching beyond the discocellulars and enclosing on DC² a slight pale mark; apical fringe with a small rosy, black-mixed dash or short streak.

La Oroya, R. Inambari, Carabaya, Peru, 3100 ft., November—December 1905, wet season (G. R. Ockenden). Type in coll. Tring Mus. Others from the same locality and from Santo Domingo, 6000–6500 ft.

Perhaps this and not *basicostalis* Dogn. will prove to be the western subspecies of *roseipalpis* Feld. (from Venezuela), of which at present I only know two or three specimens. *basicostalis* (which is also common at Santo Domingo) appears slightly squarer-winged, and the red base of costa distinguishes it from both the other forms in question.

19. *Rhodochlora tornistriga* sp. nov.

♂, 53–56 mm. Face cadmium yellow, the markings maroon, consisting of a narrow stripe above, a line down middle and a narrow stripe at side, broadening rapidly in lower half. Palpus maroon. Vertex and antennal shaft white. Thorax green above, white beneath. Abdomen above green anteriorly, fading off to white; beneath white.

Forewing green, slightly paler than in most of the genus, the markings maroon with a purplish admixture; antemedian line present between M and SM², slender and somewhat interrupted, slightly angled outward before middle, edged proximally and distally with cream-colour; cell-spot weak; postmedian line from R¹ 3 mm. from termen, moderately dentate to M², between M² and SM² deeply inbent and enclosing on its distal side a large cream-coloured spot; a patch distally to this, more or less connected with terminal line, becoming narrow and interrupted anteriorly to M², disappearing before reaching R³; a conspicuous terminal line from M² to tornus, the fringe also here reddened.—*Hindwing* ample, the termen convex, very slightly bent in middle, apex not quite as squared as in *roseipalpis* Feld.; subbasal patch large but pale (scarcely yellower than cream-colour), the purplish contained band variable in width, **followed distally by an elongate cell-mark** on the anterior part of DC³; postmedian line faintly indicated in darker green and with small maroon dots on the veins from R¹ to M² and a very feeble, interrupted sinus inward between this and SM²; a maroon terminal line from apex to beyond SC², accompanied by some very slight dusting proximally.

Forewing beneath more whitish posteriorly, the markings of upperside indicated, mostly ill-defined, a green postmedian line traceable but not sharp. *Hindwing* beneath in part whitish, the green postmedian line thicker and more distinct than above, but without vein-dots; markings of upperside otherwise indicated but not sharp.

Monte Tolima, Colombia, 3200 m., January 1910, type and another; Cañon de Tolima, 2700 m., December 1909 (A. H. Fassl); in coll. Tring Mus.

20. *Racheospila pectinifera* sp. nov.

♂, 28–32 mm. Face red, extreme lower edge white except in middle. Palpus moderate, first and second joints white beneath, strongly mixed with red-brown;

third joint moderate, red. Vertex white; occiput red. Antennal shaft reddish; pectinations long for the genus—about six times diameter of shaft. Thorax above green; abdomen in part greenish, mixed with red, first tergite with a red spot, second and fourth each with a large snow-white, red-encircled spot, fifth with a similar but much smaller spot. Hindtibial process more than half as long as first tarsal joint.

Wings shaped, coloured and marked about as in *albociliaria* H.-Sch. (= *purpureotincta* Warr.), the red markings less purple, approaching those of *molliculata* Warr.—*Forewing* with SC¹ anastomosing or osculating with C; costal margin rather markedly arched, narrowly dark red; cell-spot rather large, but not quite so large as in most *albociliaria*; postmedian dots (or dashes) only very slightly whitish-edged distally, the costal one not appreciably enlarged.—*Hindwing* nearly as forewing, antemedian line only represented by a red dash on M proximal to the origin of M², postmedian with more of the red and less of the white than in *albociliaria*.

Underside whitish green, the anterior part of forewing greener; dark red costal margin rather broader than above, projecting a streak at origin of postmedian line, which is otherwise (in common with the other markings) more or less completely obsolete; forewing sometimes with a small red cell-spot.

Peru: Santo Domingo, Carabaya, 6500 ft. (G. R. Ockenden), 7 ♂♂, the type October 1902, dry season; Tinguri, Carabaya, 3400 ft., January 1905, wet season (G. R. Ockenden), 1 ♂; Huancabamba, Cerro del Pasco (E. Boettger), 1 ♂. Also a small ♂ from Chiriqui, Panama. All in coll. Tring Mus.

A discoloured ♀, slightly larger, taken with the type, is no doubt referable here, though the species, except in the ♂ antennal pectinations, is puzzlingly like *molliculata* and an insect which I take to be the Peruvian form of *albociliaria*, both of which latter also occur at Santo Domingo.

21. *Racheospila rhodonota* sp. nov.

♂, 34–35 mm. Face and palpus deep vinous or “pomegranate purple”; vertex snow-white; occiput crimson; palpus narrowly pale beneath, short, with third joint quite small. Antenna white proximally, red distally; pectinations almost three times as long as diameter of shaft. Collar and thorax above green. Abdomen above reddish, the first, third, and fourth segments mostly crimson, these and the second segment sometimes each with a narrow white mediodorsal spot. Foretibia with innerside and tuft blackish fuscous; hindtibia with short process (not quite as long as inner terminal spur).

Forewing with costa very slightly arched, apex rather acute, termen oblique, scarcely curved; SC¹ anastomosing strongly with C and sometimes with SC², DC³ strongly oblique posteriorly, M¹ widely separate; light green, not very opaque, costal edge vinous nearly to apex, at base inclining to crimson; markings vinous; cell-spot large; lines represented by short dashes on the veins; antemedian with the dash on SC smaller, that on M just proximal to the origin of M²; postmedian oblique outward or obsolete from costa to R¹, about parallel with termen (at 3 mm. distance) from R¹ to M¹, then slightly incurved; faint indications of a crenulate pale line, especially as teeth on the veins accompanying the postmedian dashes distally; terminal line broken into long dashes; fringe more yellowish, palest at base, weakly spotted with reddish.—*Hindwing* with termen convex, scarcely waved, almost inappreciably bent at R³; DC³ very oblique, M¹ rather widely

separate; antemedian only present on M; postmedian, terminal and fringe as on forewing; cell-spot rather smaller.

Underside with costal margin of forewing more broadly crimson, especially proximally, where it is darkened with purplish; markings feebly reproduced.

Carabaya, Peru: Limbani, 9500 ft., May 1904, type; Agualani, 9000 ft., December 1905, wet season. Both in coll. Tring Mus., collected by G. R. Ockenden.

What I take to be the ♀, as it occurred in the same localities and has the same shape and essentially the same markings, is slightly smaller (32–33 mm.), the head relatively small, with palpus long, third joint not quite as long as second, the red markings less bright, the white spots on abdomen sometimes enlarged.

Somewhat transitional between groups *Ib* and *Ih* (*Gen. Ins.*, fasc. 129, pp. 104, 108), presumably nearer to the former.

22. *Racheospila monospilonota* sp. nov.

♂, 34 mm. Related to the preceding, agreeing in shape, colour, and scheme of markings, as also in venation and most points of structure; hindtibia with process longer—somewhat over one-half the length of first tarsal joint. Face red, with a white band near lower edge. Palpus red, with some white admixture. Vertex white; occiput green. Abdomen without red or white markings; a large black spot on first tergite.

Forewing above with costal edge narrowly white, only at extreme base narrowly red; markings blackish, scarcely mixed with red or purple; antemedian dots scarcely prolonged into dashes; cell-spot less large than in *rhodonota*, postmedian row of dashes more incurved posteriorly; no terminal line; fringe ochreous whitish, with an inconspicuous reddish dot at apex.—*Hindwing* with corresponding distinctions, the cell-dot rather redder than on forewing.

Underside with costal margin of forewing broadly dark red from base to about one-sixth; markings very feebly reproduced.

Monte Tolima, Colombia, 3200 m., February 1910 (A. H. Fassl). Type in coll. Tring Mus.

The quite different shape distinguishes this species at a glance from the similarly marked *nigripes* Dogn., which was taken at the same time and place. In that species the ♂ hindtibia is without process, and there are several other differences.

23. *Racheospila neodmes* sp. nov.

♂, 28–29 mm.; ♀, 30 mm. Face green. Palpus in ♂ about one-and-a-half times diameter of eye, third joint not minute; in ♀ slightly over two, third joint long; white, with a few red scales on outer side, third joint mostly red. Vertex white, occiput narrowly green, a narrow bright-red band intervening. Antenna white proximally, reddish distally; pectinations in ♂ about three times diameter of shaft. Thorax and anterior part of abdomen green above, first abdominal tergite with a quadrate black spot. Foreleg marked with reddish and fuscous, middle- and hindleg whitish; hindtibia in ♂ with hair-pencil, but without terminal process.

Forewing with costa slightly arched, apex moderately pointed, termen nearly straight, oblique; SC¹ free, R¹ connate; whitish green, not very opaque, minutely irrorated with dark blue-green scales; costal edge red at base, otherwise (together with termen) very finely white, separated from the ground-colour by a reddish line

(at termen bright red, uninterrupted); lines whitish, rather indistinct, scarcely indicated except as dots on the veins and folds, and from SM^2 to hindmargin; antemedian from cell-fold at less than one-fourth length of wing, oblique to SM^2 at well beyond one-third, then vertical; postmedian oblique outward at first, but very feeble, parallel with termen at the radials, then incurved, nearly vertical to termen before two-thirds; cell-dot large, black mixed with red, its edges not very sharply defined, surrounded by a very vague pale ring; fringe white, with a slight tinge of yellow.—*Hindwing* with termen somewhat convex, extremely slightly bent about R^3 ; M^1 connate or barely separate; as forewing, except costally.

Underside whitish green, with discal dots blackish; forewing with costal margin reddish, in proximal part broadly, here somewhat mixed with black; terminal red line thick at apex, then slender, soon becoming obsolete.

Carabaya, Peru: Agualani, 9000 ft., October 1905, dry season (type and another ♂), September 1905, wet season (♀); Limbani, 9500 ft., April 1904. All in coll. Tring Mus., collected by G. R. Ockenden. Also in coll. L. B. Prout, from Oconeque, 7000 ft., February 1905, with the lines slightly better expressed.

Nearest *diarita* Dogn.; larger, rather more pointed-winged, the black spot at base of abdomen much larger and more concise, occupying the entire length of the segment, the white dots of abdomen obsolescent, those of the wings less sharp, hindtibia of ♂ without terminal process, etc.

24. *Racheospila carmen* sp. nov.

♂, 26–28 mm. Closely related to *cecilia* Prout (*Gen. Ins.* 129, p. 107), differing as follows; hindtibia with developed hair-pencil and short terminal process (length of longer terminal spur, or scarcely as long).

Wings very slightly yellower green.

Forewing with SC^1 anastomosing with C (free in *cecilia*); a strong blackish cell-dot, rather larger above than beneath; postmedian line rather more strongly oblique inward in front of vein R^1 ; beneath with the smoky suffusion at costal margin perhaps more extended.—*Hindwing* above (but not beneath) with a sharp, though small, cell-dot; postmedian line even more deeply excurved than in *cecilia*.

Peru: Cushi, Prov. Huanuco, 1900 m. (W. Hoffmanns). Type and others in coll. Tring Mus.

In both species the costal margin of forewing above is reddish ochreous, with scarcely a trace of "crimson," and the terminal line strongest at apex.

25. *Racheospila montana* sp. nov.

In almost all respects like the preceding, from which it may possibly prove not specifically distinct; antennal pectinations perhaps very slightly shorter and stouter, hindtibial process slightly better developed.

Forewing with the termen in general not quite so straight and oblique, SC^1 generally anastomosing at a point only (in one Agualani example free). Distinguishable by having the postmedian line denticulate, the teeth on R^1 and R^2 of the forewing the most conspicuous, almost W-shaped; terminal line more conspicuously interrupted with white dots at vein-ends, sometimes also slightly interrupted midway between.

Three races, distinct in colour, are before me, and neither is of the same tone as *carmen*. All are in coll. Tring Mus.

Racheospila montana montana. Pale terra-verte, with a slight suspicion of bluish, the white lines a little thickened.

Agualani, Carabaya, 9000 ft., August—December 1905 (G. R. Ockenden).

Racheospila montana tenuilinea. Pale terra-verte, without suspicion of bluish, the white lines quite slender.

Oconeque, 7000 ft., July 1904, dry season (G. R. Ockenden).

Racheospila montana smaragdina. Deeper coloured, almost emerald green, the white lines still finer.

Huancabamba, Cerro de Pasco (E. Boettger).

26. *Racheospila viridilinea* sp. nov.

♂, 24–28 mm.; ♀, 30 mm. Face green, slightly prominent. Palpus scarcely reaching beyond face, with third joint quite short; mostly fuscous, first and second joints beneath whitish. Vertex broadly white; occiput green. Antennal shaft white proximally, reddish distally; pectinations scarcely twice as long as diameter of shaft. Thorax and part of abdomen green above; abdomen with small white spots at posterior end of segments. Foretibia infuscated on upper and inner side; hindtibia with process about half as long as first tarsal joint.

Forewing with apex moderately sharp, termen almost straight, oblique, SC¹ free; bright bice green, a little brighter than in most of the allies (*diarita* group); costal edge narrowly white, then narrowly ochreous, at extreme base tinged with red; lines white, very fine, not interrupted; antemedian very slightly angulated outward on M; postmedian from about two-thirds costa, slightly incurved near its origin, right-angled at R¹, thence extremely slightly lunulate-dentate (sometimes appearing to the naked eye almost smooth), forming an extremely gentle inward curve in posterior half; discal dot black, strong; terminal line obsolete; fringe whitish ochreous, unspotted.—*Hindwing* with termen rather full, bluntly bent in middle, M¹ connate or very shortly stalked; cell-dot as on forewing; first line curved, rather near cell-dot; postmedian rather more dentate than on forewing, projecting outward at R³—M¹, incurved between M² and SM².

Forewing beneath in anterior part (nearly to hindmargin proximally, less extended distally) deeper green than in the allies; costal edge whitish, tinged with red in proximal half; cell-dot present; a vague white, proximally green-edged postmedian line; a fuscous-reddish apical dot on fringe. Hindwing whitish, greener from base to the place of the antemedian line; cell-dot present; a conspicuous green postmedian line, following the proximal edge of the white line of upperside.

Santo Domingo, Carabaya, Peru, 6000 ft., December 1901, March—May 1902, 7 ♂♂, December 1902, 1 ♀ (G. R. Ockenden), in coll. Tring Mus.

Most easily recognised by the underside. A race (?) with termen of forewing rather more oblique, of hindwing less bent, ground-colour slightly paler, cell-dots sometimes minute, occurs at Cushi (coll. Tring Mus.) and Huancabamba (coll. L. B. Prout); on the upperside this rather recalls *carmen* Prout.

27. *Racheospila cosmata peruviana* subsp. nov.

Face more uniformly red than in *cosmata cosmata* Prout, from Mexico and Costa Rica (in which it is markedly white at lower edge and upper corners). Abdomen with the white spots smaller, though sharply expressed.

Forewing with a conspicuous blackish-red cell-dot; fringe more conspicuously

barred with red beyond middle.—*Hindwing* with a more minute blackish-red cell-dot; fringe as on forewing.

Peru: Santo Domingo, Carabaya, 6000—6500 ft., a series of both sexes, including the type; Tinguri, Carabaya, 3400 ft., 1 ♂; Huancabamba, Cerro del Pasco, 2 ♂♂. Type in coll. Tring Mus.

28. *Racheospila degener* sp. nov.

♂, 19 mm. Face red, near upper extremity with a white dot on each side. Palpus extending little beyond frons; white, second and third joints marked with red on outer side. Vertex white; occiput green. Antennal shaft white proximally; pectinations rather stiff, little longer than diameter of shaft. Thorax above green; abdomen marked with red on first, third, and fourth tergites, in one example with enclosed white spots, in the other apparently only with a few white scales (slightly discoloured). Hindtibia with process about half the length of first tarsal joint.

Forewing with apex not very sharp, termen very slightly curved, moderately oblique; SC¹ free or anastomosing with C; malachite green, about as in *sitellaria* Guen. (slightly more opaque than in *cosmeta* Prout); costal edge narrowly whitish; lines fine, white; antemedian very faint; postmedian not at all dentate, obsolete anteriorly, distinct from R¹ to hindmargin, forming the slightest possible inward curve from R²; cell-dot black, minute; terminal line very fine, blackish dotted with red, interrupted by whitish dots at veins; fringe ample, ochreous whitish, clearest in distal half, proximal half with indistinct red spots opposite the veins.—*Hindwing* more strongly bulged in anterior part than in *cosmeta*, roundly prominent about R³; M¹ stalked; first line obsolete; postmedian complete, obtusely bent about R³; cell-dot, terminal line and fringe as on forewing.

Underside paler; cell-dots present but weaker; forewing also with traces of postmedian.

La Soledad, Entre Rios, close to Uruguay frontier, December 14 and 30, 1909 (Miss E. A. Britton). 2 ♂♂ in coll. Tring Mus.

A pygmy relative of *cosmeta* Prout.

29. *Racheospila tisstigmaria scotocephala* subsp. nov.

♂, 32–36 mm. Larger than name-typical *tisstigmaria* Dyar (= *magnidiscata* Prout). Face more blackened; occiput mixed with blackish fuscous.

Forewing in general more heavily clouded costally in the region of the cell-spot and again at costal end of subterminal row of dots.—*Hindwing* slightly less bent at end of R³ than in *tisstigmaria tisstigmaria*, antemedian line less conspicuous (not thickened) at abdominal margin.

N.E. Peru: Cushi, Huanuco, 1900 m. (W. Hoffmanns), type and another; Huancabamba, Cerro del Pasco (E. Boettger). Also from Cañon del Tolima, Colombia, 1700 m. All in coll. Tring Mus.

The dorsal markings of the abdomen of this species have not been described, as my type had the body discoloured and Dyar described the wings only. The first tergite bears a moderately large (longer than broad) blackish spot, and the posterior end of the third and of the fourth tergite each a rather smaller blackish spot. Except for this difference and the black terminal dots, and the fact that M. Dognin himself has sunk *nigricincta* Warr. to his *puntillada*, I should have been inclined, from the description, to identify *tisstigmaria scotocephala* with the last-named.

30. *Racheospila radiolinea* sp. nov.

♂, 32–37 mm. Face brown, very narrowly white below. Palpus scarcely reaching beyond frons; darker brown, white beneath. Vertex green. Antennal pectinations scarcely longer than diameter of shaft. Patagia and base of tegulae green; thorax otherwise mostly fuscous above, metathorax with a green spot. Abdomen dorsally fuscous at base, then mediodorsally green, the segments (especially the fourth) more or less spotted with fuscous posteriorly; subdorsally fuscous. Body beneath pale. Legs whitish, the foretibia mixed with fuscous; hindtibial process reaching scarcely beyond middle of first tarsal joint.

Forewing with SC¹ free; rather light green, not very opaque, costal margin dark reddish fuscous; markings dark reddish fuscous; a small basal patch, mixed with blackish, its edge rather oblique outward and somewhat angled outward on M; antemedian line double, somewhat confluent into a bar, rather oblique outward from costa to M, then obsolete or slenderly connected behind M with median band; a median band, composed of more or less confluent lines, in anterior half 3–4 mm. broad, enclosing the large black cell-spot, in posterior half suddenly narrow, consisting of two wavy lines 1 mm. apart, running from base of M² to hindmargin, with more or less dark shading between them; a longitudinal fuscous shade between R² and R³ from median band to postmedian, containing a conspicuous black line along the fold; postmedian line rather near termen, dentate, blackish in its anterior part, vaguer in its posterior, deeply incurved between M² and SM²; placed on fuscous shading, which is rather broad in anterior part, narrow or obsolescent in posterior, subterminal dots placed on the dentate edges of this band; terminal vein-dots strong, that at R³ enlarged; dots weakly continued on fringe.—*Hindwing* not very broad, termen slightly waved, a little prominent at R³; M¹ connate or stalked; concolorous with forewing; a fuscous, black-mixed spot close to base, containing a minute green dot in cell; antemedian lines and cell-spot wanting; median double line continued, but very vague or almost obsolete except towards abdominal margin, a strong outward curve discernible between the radials, blackish inward dots conspicuous on M (proximal to origin of M²) and SM²; postmedian line and subterminal dots formed nearly as on forewing, the accompanying band slight and narrow, scarcely noticeable anteriorly; terminal dots as on forewing.

Underside similarly but more feebly marked, only the cell-spot and anterior part of postmedian band of forewing usually strong.

Upper Amazon: Fonte Boa, June 1906 (type), May and September 1906; Santo Antonio de Javary, May 1907 (S. M. Klages). Colombia: Allianca, below S. Antonio, Rio Madeira, November–December 1907 (W. Hoffmanns). Bolivia: Charaplaya, 1300 m., June 1901 (Simons); Buenavista, 750 m., August 1906 to April 1907 (Steinbach). All in coll. Tring Mus.

Belongs to the *conspersa* group.

31. *Racheospila promontoria dilata* subsp. nov.

♂. Both wings with the patch at middle of hindmargin somewhat darkened and considerably widened, on the forewing nearly twice as broad as in name-typical *promontoria* Warr., its proximal edge arising on M at 1 mm. nearer the base than the origin of M² (in *promontoria promontoria* at the origin of M²), its distal edge rather nearer the termen than in *promontoria promontoria*. In addition, the patch

generally encroaches a little into the cell, whereas in the name-type it is sharply bounded by M except about the discocellulars.

N.E. Peru: Huancabamba, near Cerro del Pasco (E. Boettger), type and others; Cushi, Prov. Huanuco, 1900 m. (W. Hoffmanns). Type in coll. Tring Mus.

32. *Racheospila schmassmanni* sp. nov.

♂, 22 mm. Face and palpus reddish, the latter quite short and slender. Antennal pectinations long. Crown green, narrowly white in front. Thorax and abdomen somewhat discoloured, evidently green dorsally, the abdomen apparently with traces of two or three small white dorsal spots. Hindtibia not dilated, the spurs rather long.

Forewing with apex moderately acute; SC¹ anastomosing with C; blue-green, strigulated with whitish, similarly to *Prasinocyma vermicularia* Guen., etc.; a small black dot on radial fold just outside the cell, its longitudinal measurement slightly exceeding its transverse; no trace of lines.—*Hindwing* with costal dilatation at base rather marked; termen rounded, tornus not very sharp; M¹ well separate; like forewing.

Underside paler, without markings, costal area of forewing basally tinged with dull rosy.

Chanchamayo, Peru. Type in coll. L. B. Prout, kindly presented by Mr. W. Schmassmann, to whom I dedicate it.

M. Dognin writes me that this is "exact to *licada* Dogn. (from Ecuador) except in size" (20 mm. by continental measurement) "and the tint, which is darker green." The description of *licada*, however, does not mention the strigulation, and it is said to have the lines indicated by slight rows of vein-dots (absolutely wanting in *schmassmanni*), the discal dots brown, that of the forewing present also beneath. If the palpus, antenna, leg, etc., allow of its retention in *Racheospila*, *schmassmanni* (together presumably with *licada*) should probably form a new section, perhaps nearest to group *h*.

33. *Racheospila minor* (Warr.)

The statement (*Gen. Ins.* 129, p. 105) that SC² of forewing is stalked beyond SC⁵ rests on an unaccountable error of observation. There remain only the shape and facies to suggest that the species is "erratic" in the genus.

34. *Racheospila suppomposa* sp. nov.

♂, 27–30 mm. Face rosy above, white below. Palpus more than twice as long as diameter of eye, third joint not as long as second; rosy, with first joint and part of second beneath white. Antenna white, becoming tinged with red distally. Vertex white. Occiput narrowly rosy. Collar rosy. Metathorax and abdomen red-brown, with a row of large white dorsal spots (the first one or two sometimes shaded with red-brown), becoming small on posterior segments.

Forewing delicate green, less pale and translucent than in *leucoceraria* Snell., but not opaque; costal edge deep rose-colour in basal one-fourth, then narrowly white, towards apex (and sometimes very slenderly throughout) narrowly underlined with red; both lines present, whitish, the antemedian obtusely angled outward at both folds, the postmedian lunulate-dentate, with the teeth acute, pointing distally on the veins; receding slightly from termen anteriorly to R¹; discal dot minute,

deep rosy; terminal line fine, deep rosy, very slightly crescentic between the veins, forming a very small swelling from tornus and across SM²; fringe white, tinged with rosy in distal half and with strong subtriangular rosy spots opposite the veins.—*Hindwing* quite similar, the first line sometimes obsolete, the terminal line thickening also very slightly at apex.

Underside more whitish green, the lines scarcely traceable; otherwise similar.

Tucuman, 1100 m., January—February 1905 (J. Steinbach). 3 ♂♂ in coll. Tring Mus.

Very near *pomposa* Dogn. (= *diaphana* Warr., *Nov. Zool.* viii. 450, nov. syn.), terminal joint of palpus rather less long, wings brighter green, cell-dots smaller, terminal line appreciably thickened at tornus and on hindwing at apex.

35. *Racheospila pomposa indecora* subsp. nov.

♂ ♀, 19–23 mm. Smaller than *pomposa pomposa* Dogn., cell-dots minute, terminal line scarcely expanding between the veins.

Mexico: Guadalajara, November 1893 (W. Schaus), type in coll. Tring Mus.; Jalapa, June 1896 and June 1897 (W. Schaus). Nicaragua: Jinotega, 3400 ft., January 1906 (M. G. Palmer), in coll. Tring. Mus.

Labelled by Schaus "*congruata* Walk.," but that is an example of *sigillaria* Guen. from Haiti (not *sitellaria*, where it is wrongly cited in *Lep. Cat.*, Hemith. p. 71).

36. *Racheospila dependens independens* subsp. nov.

Differs from name-typical *dependens* Warr. as follows: dentate transverse lines distinct, whitish; the "brown-red" markings lighter, less purplish; costal streak of forewing less broad; cell-spots on an average smaller, that of forewing not or scarcely confluent with costal streak; dark costal projection at beginning of postmedian line faint or obsolete; tornal blotch reduced, especially on forewing.

Oconeque, Carabaya, Peru, 7000 ft., dry season, July 1904 and February 1905 (G. R. Ockenden), in different collections; type ♂ in coll. Tring Mus.

37. *Nemoria mustela monostigma* subsp. nov.

♂, 26 mm. Smaller than *mustela mustela* Druce from Central America; forewing with distinct red, black-mixed discal dot, the lines without the reddish dots on the veins and especially at hindmargin which are conspicuous in the name-type; the postmedian on both wings more strongly defined, placed slightly farther from termen.

San Cajetano, Colombia, 8000 ft., September 1902. Type in coll. Tring Mus.

The hindtibia shows a well-developed terminal process, which is wanting in the unique type of *mustela*; in the latter, however, the sole hindleg is so badly abraded that it is impossible to say it may not have existed. The new form, however, may well prove a distinct species.

38. *Nemoria rubrifrontaria* (Pack.)

Racheospila rubrifrontaria Pack., *Rep. Peab. Acad. Sci.* v. 76 (1873); Prout, *Gen. Ins.* 129. p. 104. *Aplodes rubrifrontaria* Pack., *Mon. Geom. U.S.A.* p. 386, t. 10, f. 87 (1876).

This not uncommon species is unrepresented in the British Museum collection, and was unknown to me when I revised the subfamily. On the strength of mis-

identified material in the collection named, I unfortunately misplaced the species in *Racheospila*. It is of course a close relative of *mimosaria* Guen., and must be referred to *Nemoria* (= *Aplodes* Guen.), for the terminal joint of the palpus is quite short in both sexes.

39. *Tachychlora prasia* sp. nov.

♂, 22 mm. Close to *flavicoma* Warr., of which it may possibly prove a form.

Forewing slightly narrower, rather duller, greyer; the beginnings of the two lines on hindmargin rather far apart, with stronger rosy suffusions between them. — *Hindwing* with the greenish shade at base fainter, rather more extended distally but almost obsolete along abdominal margin; boundary-line of the yellow area red with a few black scales (not black), rather thick, less incurved on DC³ (DC³ itself rather less curved); strong red distal projections from this line along R¹ and R², joining the postmedian shade, which is also more reddish and diffuse than in *flavicoma*; distal area duller grey-green.

Hindwing beneath with the yellow patch less noticeable than in *flavicoma*; **an elongate blackish discal mark**.

Rio Huacamayo, Carabaya, Peru, 3100 ft., June 1904, dry season (G. R. Ockenden). Type in coll. Tring Mus.

A specimen of *flavicoma* from Yahuar Mayo, S.E. Peru, agrees absolutely with the Fonte Boa series determined by Warren and fitting his description. Both this and *prasia* differ (at least racially) from *uricha* Kaye.

40. *Phrudocentra agari* sp. nov.

♂, 33 mm. Closely like the largest examples of *pupillata* Warr. and *vivida* Warr.,* palpus rather longer (one-and-three-quarter times diameter of eye), antennal pectinations longer (four times diameter of shaft), hindtibia very little dilated, without terminal process.

Forewing with termen rather more oblique, very slightly bent at R³. — *Hindwing* with abdominal margin very long, termen strongly bent at R³; the black antemedian patch between DC and abdominal margin wanting.

Dominica (E. A. Agar). Type in coll. Tring Mus.

41. *Phrudocentra contaminata* sp. nov.

♂, 32–33 mm.; ♀, 38–39 mm. Head green, with a few white dots. Palpus in ♂ 1 $\frac{3}{4}$, third joint less than half as long as second; in ♀ 2, third joint more than half second; white, the second joint (except beneath) and the third rather strongly mixed with fuscous. Antenna fuscous, in ♂ rather shortly pectinate (branches scarcely over twice as long as diameter of shaft); in ♀ scarcely serrate. Thorax green, mixed with white beneath. Abdomen above green, with small white, dark-surrounded dots, as in *trimaculata* Warr. Legs pale; foretibia mixed with fuscous; hindtibia in ♂ not appreciably dilated.

Forewing with termen in ♂ scarcely, in ♀ slightly, sinuate (inward anteriorly, outward behind middle); green, behind M and M² and distally to postmedian line in a tapering patch from tornus about to R¹ clouded with dirty olivaceous grey; lines olivaceous, faint at costa; antemedian fine, gently and rather regularly

* *vivida* Warr., which I have hitherto sunk to *pupillata*, seems only to differ in the shorter (almost obsolete) terminal process of the ♂ hindtibia, and is at present problematic.

curved; postmedian nearly straight, very slightly oblique, 3 or 4 mm. from termen anteriorly, 4 or 5 mm. posteriorly, edged distally by a violet-whitish line; cell-dot small, black; a rather large black dot at apex.—*Hindwing* with termen only very feebly (in ♀ scarcely) bent at R^3 ; M^1 just separate; the olive-grey clouding covering most of the wing, leaving an ill-defined green distal area of about 4 mm. width at abdominal margin but narrowing and becoming lost in the suffusion before apex; discal dot present; postmedian line as on forewing, but scarcely beyond middle of wing.

Underside with the suffusions darker purple-grey, at hindmargin of forewing and in places on hindwing irregularly relieved with whitish; forewing otherwise green, with minute discal dot; hindwing whitish.

La Oroya, Rio Inambari, S.E. Peru, 3100 ft., March 1905, wet season (G. R. Ockenden), type ♂ in coll. Tring Mus.; September 1904, dry season, 1 ♂, 2 ♀♀. Santo Domingo, Carabaya, 6000 ft., November 1901, wet season.

Distinguished from *trimaculata* Warr. by the much less angulated hindwing, the regularly curved postmedian line of forewing, larger apical dot, etc.

42. *Phrudocentra albicoronata* sp. nov.

♂. Closely like *opaca* Butl. (= *abscondita* Warr., nov. syn.), from the Amazons and Peru, differing as follows. Vertex broadly white (in *opaca* green, with only a very slight white admixture, or at most a narrow white band). Hindtibia with a small hair-pencil which is wanting in *opaca*.

Forewing above on an average with less dark clouding.—*Hindwing* more angulated at R^3 , almost as in *condensata* Warr.; beneath with the purple-fuscon postmedian spots extended into an almost uninterrupted sinuous band from costa near apex to M^2 or submedian fold.

Venezuela: San Esteban, June—July 1909 (S. M. Klages), type and seven others in coll. Tring Mus.; Cucuta, a worn ♂ in the same collection.

A local race (?), from Sixola River, Costa Rica, determined by Schaus as *opaca*, has the postmedian band beneath broader and denser. I have before me only one of each sex, the ♀ antenna bipectinate almost as in *opaca*, but with the branches slightly shorter.

43. *Phrudocentra eccentrica* sp. nov.

♀, 40 mm. Palpus slightly over twice as long as diameter of eye; mostly pale, the second joint, and the third except at its tip, with minute scattered fuscous strigulae. Antennal pectinations unusually long (five or six times diameter of shaft), appreciably thickened towards their tips. Wing-shape, coloration and general aspect of *trimaculata* Warr.

Forewing with apical black dash stronger than in *trimaculata*; first line obsolescent, an ill-defined grey cloud placed behind M just proximal to the origin of M^2 ; postmedian line whiter and considerably more slender than in *trimaculata*, slightly more oblique.—*Hindwing* (as in *trimaculata intermedia*) without dark subapical spots; a cloudy grey antemedian band, at the distal edge of which stands the minute cell-dot; postmedian line as on forewing.

Forewing beneath with the dark postmedian band as in many examples of *trimaculata* (broadening strongly behind, reaching tornus), the posterior dark shade almost confined to a patch behind M just proximal to the origin of M^2 , thus well

isolated (except for some very feeble greyish shading) from the postmedian band. Hindwing beneath with both the dark bands strong and sharply defined, the ground-colour, especially between them, more whitish than in *trimaculata*, quite free from grey clouding.

Sapucay, Paraguay, November 23, 1904 (W. Foster). Type in coll. Tring Mus.

A single ♂ from the same source, September 15, 1904, is considerably smaller (30 mm.); forewing with apex less produced, antemedian line indicated, the dark cloud being absent on upperside; hindwing with termen less strongly bent in middle. Its absolute agreement with the ♀ type in all other respects (except of course the shorter palpus) seems to leave no doubt as to its identity; but the pectinations are **shorter** (scarcely over three times diameter of shaft), and this is such an unexampled phenomenon in the lepidoptera that I have made the more striking ♀ the type. No other species of the group is yet known from Paraguay.

44. *Dichorda rhodocephala* sp. nov.

♂, 26–30 mm.; ♀, 36 mm. Head predominantly red, even the white crown being spotted or mixed with red; the occiput red. Palpus dark purple-red, first and second joints white beneath. Antenna proximally red; in ♀ not pectinate. Thorax and base of abdomen green above; the rest of abdomen mostly dirty pale ochreous, second tergite with a large, third with a small white spot at end, narrowly edged, except behind, with red. Fore and middle femora and tibiae with dark purple-red spot at end, that of foretibia extended proximally so as to cover a large part of the joint.

Forewing with SC¹ free; bright uniform green, as in *rectaria* Grote; costal edge dark purple-red nearly to apex (most broadly towards base), somewhat spotted (scarcely at base) with white; first line obsolete; cell-dot minute; postmedian line whitish, with slight suggestion of narrow dark yellow-green edging proximally, nearly straight from beyond five-sixths costa to two-thirds hindmargin.—*Hindwing* without red costa or dark discal dot; line continued, straight, ending at nearly two-thirds abdominal margin.

Forewing beneath paler green, becoming whitish posteriorly; costal edge narrowly ochreous-whitish, spotted with red; cell-dot present; line feebly indicated. Hindwing whitish green, a little brighter at apex and along anterior part of termen; white line indicated.

Jamaica, 2 ♂♂, 1 ♀ in coll. Tring Mus.

Nearest *rectaria* Grote, from North America, distinguished by the redder head, the abdominal ornamentation, obsolescence of first line, etc. Seems to have been confused with the very different *iris* Butl. (Amazons and Peru), of which *uniformis* Warr. (Trinidad, Colombia, Venezuela, and the Guianas) is the more northerly representative. In both these the ♀ antenna is bipectinate.

Racheolopha Warr.

When I prepared fascicule 129 of *Genera Insectorum*, I was greatly in doubt about this genus, being unable to study the species on which its author founded it (*miccularia*, Guen., Warr. det.); and to add to the confusion, I unaccountably attributed to *rufilimes* Warr. a 4-spurred hindtibia. I have now seen the specimen which Mr. Warren had before him, besides several other examples of the same species (= *imula* Dogn.), and can $\frac{1}{2}$ provisionally accept it as Guenéé's

miccularia. It is structurally like *sarptaria* Möschl. (*ecuadorata* Dogn.), and not inconceivably a form thereof with the marginal blotches greatly reduced.

Thus the name *Racheolopha* really belongs to the genus which I provisionally called "*Auophyllodes*, Section II" (*Gen. Ins.* 129, p. 131), though recognising an apparently generic distinction in the venation— SC^2 of forewing arising before SC^5 .

Oospiloma gen. nov.

Characters of *Oospila* Warr., but all spurs of the hindtibia well developed. DC^3 in both wings (variable in *Oospila*) is somewhat inbent anteriorly, then oblique outward.

Type of the genus: *Oospiloma thalassina* (Warr.) = *Oospila thalassina* Warr.

Here also belongs *lacteguttata* Warr. (*Nov. Zool.* xvi. 85), and probably *peralta* Schaus (*Ann. Mag. Nat. Hist.* [8] x. 297), which, according to a figure of the type, should be close to *lacteguttata*, if not a local race thereof. In *thalassina* the third joint of the palpus is relatively long, in *lacteguttata* quite small, so that it may almost be considered that the former stands near the parent stock of *Oospila*, the latter of *Progonodes*; even superficially, *lacteguttata* bears a good deal of resemblance to *Progonodes holochroa* Prout.

45. **Oospila rhodophragma** sp. nov.

♂, 30 mm. Face reddish ochreous, paler on lower half. Palpus very short; ochreous, narrowly whitish beneath. Vertex snow-white. Occiput red. Antenna ochreous, the shaft white proximally. Thorax above green. Abdomen above narrowly green anteriorly, mixed with white posteriorly; crests red.

Forewing with SC^1 free, R^1 stalked, M^1 almost connate; bright apple-green, opaque; costal edge red at base, then broadly snow-white, separated from ground-colour by a red streak; cell-dot red, mixed with black; lines obsolete; distal margin very narrowly snow-white, separated from the ground-colour by a slightly crenulate red, black-mixed line, which thickens so as almost to touch the margin at the vein-ends; fringe snow-white proximally, pale yellow distally, divided in places by an extremely fine reddish line, and marked opposite the veins with elongate, subtriangular red spots, whose apices point basewards.—*Hindwing* with termen slightly waved, almost rectangularly bent at R^3 ; DC^2 slightly oblique, DC^3 strongly inbent anteriorly, then oblique outward, M^1 just stalked; cell-dot, termen and fringe as on forewing.

Underside whitish green; costal edge of forewing broadly reddish ochreous, becoming whitish distally, and with a slight reddish flush in cell; fringes as above, but not quite so bright.

Codajas, Upper Amazon, April 1907 (S. M. Klages). Type in coll. Tring Mus. Very distinct from all known species.

46. **Oospila pellucida** sp. nov.

♂ ♀, 29–31 mm. Face red, rather lighter below. Palpus with third joint in ♂ short, in ♀ moderately elongate; dull red, beneath whitish. Vertex white, narrowly red-edged behind. Antenna ochreous, with shaft white proximally; pectinations in ♀ moderately long. Thorax above green. Abdomen above pale green, fading to ochreous; crests glossy dark ruby red, mixed with some whitish scales. Hindtibia in ♂ simple.

Forewing with SC^1 free, R^1 well stalked, M^1 connate or short-stalked; pale, translucent blue-green, with some extremely slender violet-grey strigulae; costal edge bright orange-yellow; cell-dot small, blackish; termen very narrowly pinkish white, at vein-ends pure white, a fine, slightly crenulate pinkish line separating the border from the ground-colour; terminal line blackish, slightly waved, scarcely interrupted at vein-ends; fringe pinkish, with darker spots opposite the veins.—*Hindwing* with termen slightly waved, not or scarcely bent at R^3 ; M^1 stalked; termen and fringe as on forewing, cell-dot still smaller.

Underside blue-whitish, glossy, the forewing, except at hindmargin, with slight pinkish reflections; costal edge of forewing orange-yellow; cell-dots scarcely indicated; a red terminal line; fringes nearly as above.

La Oroya, Rio Inambari, 3100 ft., September 1904, dry season (G. R. Oekenden), type and another ♂; Tinguri, 3400 ft., August 1904, 1 ♀; La Union, Rio Huacamayo, 2000 ft., November 1904, wet season, 1 ♀. All in coll. Tring Mus.

O. coerulea Warr., which bears some superficial resemblance to this species, is less translucent and differs structurally in both sexes, the ♂ hindtibia being clothed with very long hair and the ♀ antenna being simple.

47. *Oospila tricamerata* sp. nov.

♂, 29–32 mm.; ♀, 32–36 mm. Very similar to *rufiplaga obsolescens* Warr. (*Nov. Zool.* xvi. 86, erroneously as *trilunaria* ab.), differing as follows: ♂ antennal pectinations longer; ♀ palpus with third joint almost as long as diameter of eye (in *rufiplaga* half as long). Both wings with the borders duller, the pink parts being white, sometimes almost entirely obscured by dark speckling.

Forewing with the patch at the radials always developed (in *rufiplaga* sometimes wanting).—*Hindwing* with a corresponding patch (always wanting in *rufiplaga*); tornal blotch of forewing generally narrower, in any case differently shaped, especially in the ♂, in which sex in *rufiplaga* its anterior edge is well rounded, receding to M^2 at termen, whereas in *tricamerata* it continues to slope forward, reaching termen between M^2 and M^1 .

Amazons: Fonte Boa, May (type) and August 1906, July and August 1907 (S. M. Klages); Codajas, April 1907; a series in coll. Tring Mus. French Guiana: Godebert-Maroni, a ♂ in coll. L. B. Prout.

48. *Oospila circumsignata* sp. nov.

♂, 28–31 mm. Face and upperside of palpus dull red, palpus beneath ochreous whitish. Vertex and base of antennal shaft white; pectinations about as in *albicomma* Feld. Thorax above green. Abdomen above mostly wine-purple, anteriorly with some green between this and the pale venter; anal end and tuft ochreous whitish; crests dark dull purple, with bronzy admixture.

Forewing chromium green, more translucent than in *albicomma*; costal edge narrowly yellow ochreous; a very irregular distal border vinaceous rufous, becoming more vinaceous proximally and separated from the ground-colour by a deep purple line (really vinaceous overlaid with black), which becomes thick and diffuse at the radials and especially between M and hindmargin; this border narrows to a point at apex, becomes about 4 mm. wide behind R^1 , narrows rapidly behind R^2 , is only 1–2 mm. wide at and just behind M^1 , after which its proximal boundary runs in baseward, and even curves slightly forward, so as to touch M^1 at its origin, finally running almost vertically to hindmargin from origin of M^2 ; a minute black

dot on DC^3 ; some scattered blackish dots and strigulae on the rufous border; traces of a dark terminal line; fringe rufous.—*Hindwing* concolorous, the black cell-dot obsolete; faint indications of an elongate white dot on DC^2 ; the distal border about the medians shaped as on forewing, anteriorly widening so as to embrace apex and distal part of costa, at abdominal margin tapering to a point opposite the origin of M^2 or M^1 instead of running forward so as to touch the base of these veins.

Underside whitish green, the borders extremely vaguely indicated in whitish fleshy.

Fonte Boa, Upper Amazon, August 1907 (type) and July 1907 (S. M. Klages), in coll. Tring Mus.

Distinguished from the rest of the *albicoma* group by the coloration and especially by the continuous distal borders. *rubescens* Warr., *Proc. U.S. Nat. Mus.* xxx. 423 (unknown to me), may, according to the description, be similar in some respects, though I am more inclined to suspect it will prove to be a *Racheolopha* akin to (*sarptaria* Möschl.? =) *ecuadorata* Dogn.

49. *Chloropteryx viridicans* sp. nov.

♂, 23–24 mm. Extremely like the larger forms of *albidata* Warr., which occurs at the same time and place. Much more strongly mixed with olive-green, which becomes the prevailing colour, leaving only dots and strigulae of white; the lines in consequence standing out less sharply; costal edge of forewing in general less strongly dark-dotted (but somewhat variable in both species), on the underside crimson proximally, ochreous underlined with crimson distally (in *albidata* more or less ochreous throughout, though commonly somewhat mixed with red proximally); hindwing with termen slightly excised anteriorly to the tail at R^3 . The face in both species is ochreous more or less mixed with red, especially in upper part; but the red appears more dominant in *viridicans*.

Torné, Colombia, August 1907, type in coll. L. B. Prout. Five others entirely agreeing.

Notwithstanding the absence of intermediates, it is just possible that this may be an aberration of *albidata* (? Mendelian), but the difference of shape, slight though it is, warrants its being regarded as a species. M. Dognin writes me that in his series of forty-eight *albidata* not one is of the green of *viridicans*, and the same remark applies to the very considerable material which I have been able to examine, including some in exquisite condition.

50. *Eueana eucrines* sp. nov.

♂, 21 mm. Face green. Palpus moderate, third joint short; white, above green. Vertex and antennal shaft white. Occiput narrowly green. Thorax above green. Abdomen above green anteriorly, second, third, and fourth segments each with a white dot at end, succeeding segments more mixed with white, anal dot and underside wholly white. Legs white.

Forewing with SC^1 from cell, anastomosing strongly with C; emerald green, costal edge narrowly dull purplish; discal dot mixed purplish and black; a fine white, slightly sinuous postmedian line about 2 mm. from termen, becoming obsolescent at costa, from R^3 to hindmargin very strongly edged proximally with dull purplish; fringe mixed with purplish, especially towards tornus.—*Hindwing* with termen smooth; concolorous with forewing; two rather large, dull vinous-purple, somewhat black-mixed spots proximally to middle, the larger on and just outside

the cross-vein, the smaller between M and SM²; a fine curved white, proximally purple-edged postmedian line 2.5 mm. from termen; fringe mixed with purplish, especially at apex.

Underside whitish green, with dark cell-marks, hindwing also with indications of the purplish spot distally to the cell.

E. Bolivia: Buenavista, 750 m., August 1906 to April 1907 (Steinbach). Type in coll. Tring. Mus.

Very distinct from all known species; best referred for the present to *Eueana*.

Chloractis Warr.

To this genus may be provisionally added "*Melochlora*" *obnubilata* Warr., *Proc. U.S. Nat. Mus.* xxx. 419, which was unknown to me when I published my revision (see *Gen. Ins.* fasc. 129, p. 123, *Phrudocentra*, Sect. IV.). In spite of its superficial resemblance to *P. hydatodes*, on which Warren comments, I find it has lost the frenulum. It differs from *Chloractis pulcherrima* in having the second joint of the palpus rougher-scaled beneath and in wanting the terminal process of the ♂ hindtibia, besides a few points which are still more obviously not generic, such as the rather longer antennal pectinations and the slightly less extreme position of R²; SC¹ of the forewing, so far as I have yet observed, is free and M¹ of the hindwing is not stalked, but these slight modifications I find sometimes occur even in the type species (*pulcherrima*).

51. **Chloractis tanaoptera** sp. nov.

♂, 30 mm. Closely related to *obnubilata* Warr. and agreeing well in structure, though the antenna bears appreciably longer pectinations and has a somewhat longer non-pectinate apical part. Conspicuously different in shape.

Forewing with termen straighter and more oblique; pale translucent green, with minute but conspicuous black cell-dot, a narrow, cloudy, smoke-coloured band just proximal to this, strongest at hindmargin and fading out towards costa, a thick, straightish postmedian line 4 mm. from termen, distal area almost entirely smoky, with a reddish or purplish hue, only at the costa, apex, and very narrowly along a part of the distal margin remaining green.—*Hindwing* with abdominal margin considerably longer than in the other species, recalling the shape of a *Hemithea* or *Thalassodes*; coloured and marked nearly as forewing, but with the postmedian line forming a moderate sinus outward between R³ and M².

Forewing beneath with the base vaguely suffused; both wings with antemedian band present, distal shade darker smoke-colour than above but rather more restricted, particularly on the hindwing, where it leaves free a green distal margin commencing as a point close to apex and gradually though not quite regularly widening until it restricts the smoky shade almost to vanishing-point at abdominal margin.

French Guiana: St.-Jean-de-Maroni, January. Type in coll. L. B. Prout.

SUBFAMILY STERRHINAE

52. **Atyria dichroides** sp. nov.

Very similar to *Cyllopoda claudicula* Dalm. (*Anal. Ent.* 102), differing as follows: palpus short, antennal pectinations very short (in *claudicula* less so), areole single (in *claudicula* usually double), hindwing with the black longitudinal streak narrowed, concentrating on M¹ (in *claudicula* on M¹-M²), hindwing beneath

with costal margin to one-half or beyond yellow (in *claudicula* only its extreme base) abdomen more narrowly yellow laterally, paler ventrally.

S. Brazil, type (no doubt from Porto Alegre; received through Staudinger) in coll. L. B. Prout. "Peru," 3 ♂♂ in coll. Brit. Mus.

Perhaps a form of *attenuata* Warr. (*Nov. Zool.* vii. 125), but the antennal pectinations appear slightly shorter and stouter, the size is somewhat larger, the yellow patches of forewing rather more ample, the black streak along M and M¹ of hindwing of more uniform width throughout, and there is a narrow black streak (line) along the fold, which is wanting in Warrén's species.

This species (or form) has passed as *dichroa* Perty, but Perty's careful description and figure (*Del. Anim.* 161, t. 32, f. 8) are decisive against this; if his species is not (as I firmly believe it to be) a mere slight aberration of *claudicula*, it is a *Cylopora* unknown to me; the elongate third joint of ♂ palpus fixes the genus.

53. *Atyria albifrons* sp. nov.

♂. Closely like *postica* Walk. (*List Lep. Ins.* ii. 371), but with shorter antennal pectinations (scarcely over twice diameter of shaft, in *postica* four times), face white, tegula black. On the forewing the yellow posterior blotch is bounded by the median vein about to the middle of the wing, its edge then curves rather steeply and finally falls vertically on the hindmargin 3 or 4 mm. from tornus. Distal border of hindwing about 2–2.5 mm. wide, of almost uniform breadth throughout, varying very little in the four specimens; an exceedingly fine black inner-marginal edge to this wing.

Peru, 4 in coll. Brit. Mus., presented by W. Schaus (apparently as *postica*).

54. *Atyria mnemosyne* sp. nov.

♂, 38 mm. Face, vertex, palpus and antenna black; the palpus rather short; the antenna with somewhat projecting joints, each bearing two pairs of fascicles of long cilia; postorbital rim whitish grey. Thorax above black, with a yellow spot on tegula; beneath whitish grey. Abdomen above, on sides and at anus black; beneath whitish.

Forewing with areole single, or exceptionally double with the distal extremely minute; bright, full yellow with black borders, the costal about 1.5 mm. in width, with a triangular projection at the areole and DC, ending in a point between the bases of R³ and M¹, the distal broadest (nearly 5 mm.) at apex, rounded-edged proximally, 2 mm. at M¹, again widening slightly at tornus, the hindmarginal 1 mm. broad.—*Hindwing* with SC² shortly stalked to almost connate, DC sinuous; concolorous with forewing, the black border not projecting at discocellulars, not widened at apex, extremely narrow at abdominal margin, proximally almost confined to the fringe.

Underside the same.

Peru: Huancabamba, type in coll. L. B. Prout; Upper Rio Toro, La Merced, Chanchamayo, in coll. L. B. Prout; San Remon, 3000 ft., June–August 1903 (Watkins and Tomlinson), in coll. Brit. Mus.

Superficially very like *ops* Druce (*Proc. Zool. Soc. Lond.* 1885, p. 529), which has rather less short palpus, ♂ antenna pectinate (though very shortly), areole double, SC² of hindwing stalked, DC normal, a dorsal yellow stripe down the abdomen, a black dash on forewing projecting from the distal border along M².

In *Trans. Ent. Soc. Lond.* 1910, p. 229, I provisionally separated *Atyria* from *Cyllopoda* by the single areole of the former; the occasional presence of a very minute distal areole in *Atyria* (*ops* and *mnemosyne*), with SC^2 arising from the stalk of SC^{3-5} (in *Cyllopoda* from cell), does not really vitiate this. The non-pectinate antenna of *mnemosyne*, however, constitutes it a separate section of *Atyria*, if not a new genus.

SUBFAMILY LARENTIINAE

55. *Hammaptera caeruleosecta* sp. nov.

♂, 36 mm. Antennal ciliation almost as long as diameter of shaft.

Forewing with termen rather strongly oblique; costal margin whitish and ochreous (probably discoloured from olivaceous), with about nineteen irregular black spots or streaks, mostly indicating the beginnings of lines; basal and subbasal area predominantly red-brown with some grey and olive shading and with rather interrupted blackish lines; that which distally bounds the subbasal area falls perpendicularly from costa to behind M, is then angled, becomes sinuous and falls nearly perpendicularly on hindmargin, where there is a black spot; intermediate area narrow, vaguely lighter (especially at costa), mixed with greenish; median area formed of two very variegated (red-brown, olive and black) bars, which become broadly confluent about M^2 , thus enclosing two light-blue patches, the anterior large, containing an elongate fuscous cell-mark, the posterior somewhat 8-shaped; distal edge of the outer of these bars very black anteriorly, the usual indentation at SC^5 deep and acute, the pure white line which follows only distinct anteriorly; distal area bluish white, mixed with olive along the veins and distally, and with a very fine indistinct olive line parallel to and near the postmedian; the interrupted, lunulate whitish subterminal is accompanied proximally by a dull reddish patch from costa to R^3 , on which stand two almost confluent black marks between the radials, and by some much smaller and weaker reddish shading towards tornus; termen with pairs of large black dots; fringe olive, paler distally, a fine pale dividing-line; blackish marks opposite the veins.—*Hindwing* white, posterior half of termen with pairs of black spots; these become minute at R^2 , scarcely traceable at R^1 .

Underside similar to that of sharply-marked *trajectata* Walk., which has rather less long forewing than the present species.

Uruhuasi, S. Peru, 7000 ft., April—May 1910 (H. and C. Watkins). Type in coll. L. B. Prout.

Ab. *incarnata* ab. nov. Forewing between basal and median areas light rose-colour, unmarked; median band in its posterior half (or more) strongly suffused with the same, the blue therefore restricted to a small space about the cell-spot; subapical patch of the same light rose-colour, thus slightly lighter than in the name-type.

56. *Hammaptera polychroma* sp. nov.

♂, 33–34 mm. Structure, shape, etc., as in the preceding.

Forewing from base to postmedian line predominantly olive-green with slight mixture of grey, but a little varied at base and parts of costa and hindmargin with more ochreous scales; subbasal patch vaguely indicated by some darker lines, angulated in cell; between this and median area a narrow reddish band, also

angulated in cell; centre of median area containing a large snow-white patch from costa nearly to M^2 , narrow at its ends, wide in middle, a small round snow-white spot at hindmargin and another in front of SM^2 ; discal dot rather large but not very dark, olivaceous; the distal band of median area mixed with reddish between the radials and between M^2 and SM^2 ; apical area mostly reddish, the patch between SC^4 and R^1 much paler; the usual darkening between the radials confluent, mixed black and dark red; a large snow-white patch from R^3 to hindmargin, containing a black submarginal spot behind M^2 , joined to an ill-defined grey subterminal one; subterminal line white, but chiefly indicated by dots in anterior half and by a greenish shade which follows it distally in posterior half.—*Hindwing* dirty whitish, with darker cell-dot and interrupted dark terminal line.

Underside similar to that of the lighter *trajectata*, a whitish patch distally to the dark cell-spot of forewing; an additional curved line on hindwing midway between cell-dot and postmedian line.

Huancabamba, N.E. Peru. Type in coll. L. B. Prout; paratypes in coll. L. B. Prout et coll. Brit. Mus.

M. Dognin had this species as *grumata* Feld.; very easily recognisable by the two large snow-white patches, one containing the **olive** cell-spot, the other the **black** submarginal spot.

57. *Hammaptera leucoptera* sp. nov.

♂, 35 mm. Antennal ciliation minute (about one-fourth diameter of shaft). Head and body light olive brownish; palpus darker; tegula greener; metathoracic tuft glossy blackish; abdomen dorsally with a pair of blackish spots at base, afterwards indistinctly and irregularly dark-mottled and belted.

Wings shaped and marked as in the *jugurtharia* group.—*Forewing* light olive green, with the markings fuscous; basal area with three somewhat crenulate lines in its distal half, the outermost at 2 mm. from base; intermediate green area with not very strong double line (slightly obscured by fuscous shades), right-angled in the cell; median band 5.5 mm. wide at costa, 4.5 mm. at hindmargin, mostly fuscous-shaded, but with wavy darker fuscous lines traceable, three proximally, four distally, the central space green anteriorly and posteriorly (in the type from costa to M and from fold to hindmargin, in paratype more restricted); a small discal dot touching the third anterior line; distal edge of the band indented on the veins, slightly inbent opposite the cell and with two not very strong projections in middle, the anterior (behind R^3) the stronger; the narrow pale band which follows the median area is white in its proximal third, pale green in its distal two-thirds, divided by a feebly darker green line and edged distally by a lunulate-dentate fuscous one, which is thickest and darkest anteriorly; subterminal line very pale green, scarcely indicated except at costa, between radials and posteriorly, where it is accompanied by darker shading; this shading, however, is weaker than in most of the allies, excepting the radial, which is developed into two very conspicuous, almost confluent spots proximally to the subterminal, the posterior the larger, and two very small pointed spots distally to it; anteriorly to the radial spots is a slightly oblique whitish-blue smear; distal margin with paired fuscous spots, followed by an extremely fine pale line; proximal half of fringe otherwise mostly green, distal half paler, the whole crossed by indistinct fuscous spots opposite the veins.—*Hindwing* white, with a small cell-dot near the base, a small greyish cloud (about 4 mm. in length) from this to the inner margin; termen with pairs

of black dots at the medians only, otherwise unmarked; fringe white, almost or quite unmarked.

Underside quite as in *laodice* Th.-Mieg., *Ann. Soc. Ent. Fr.* 1894, p. 53 (?*jugurtharia* Gnen.), the projections of postmedian line behind R^3 rather strong.

Santo Domingo, Carabaya, Peru, 6000 ft., October (dry season). Type in coll. L. B. Prout.

M. Dognin possesses an example from the same locality. Smaller than *laodice*, with shorter antennal ciliation, clearer white hindwing, no red shade in distal area, etc. Larger than *heteroptila* Warr. (*Nov. Zool.* viii. 463), also differing from this in the clear white hindwing, absence of red on forewing, different fringes, etc.

58. *Hammaptera subtersignata* sp. nov.

♂, 36-37 mm. Akin to *laodice* Th.-Mieg., distinguished as follows:

Antennal ciliation more minute (about one-fourth diameter of shaft). Wings slightly shorter and broader, with about the coloration of *crocaria* Schaus (*Tr. Amer. Ent. Soc.* xxvii. 269), the hindwing therefore with much more smoky-brown suffusion than in *laodice*. Forewing with median band broader, its proximal edge rather less concave, its distal scarcely concave between the posterior lobe and hindmargin; the narrow pale band beyond white in its proximal half, olivaceous in its distal. Underside more sharply marked than in *laodice*, the postmedian line of both wings projecting more acutely in middle; the distal shades blacker, especially in anterior half, where that of the hindwing is broader than in *laodice*; the white tornal part of forewing, on the other hand, more extended.

El Rosario, Rio Pastaza, E. Ecuador, 4900 ft., January 1910, type and another in coll. L. B. Prout. Also from Pozuzo and Huancabamba, N.E. Peru.

59. *Hammaptera elaeoptera* sp. nov.

♂, 32-34 mm. Head olivaceous; palpus short; antennal ciliation minute. Thorax olive-green above, pale beneath; metathoracic tuft glossy, blackish. Abdomen above olivaceous, with irregular, partly confluent, paired black spots at the ends of the segments and narrow, elongate, glossy blackish ones at the beginnings, especially of the third and fourth. Fore and middle legs mostly dark, with pale spots at the ends of the joints.

Forewing rather broad; olive-green, without the usual white lines at the margins of the central area; lines dark fuscous, markedly lunulate-dentate; a sub-basal group of four, in places confluent; two ill-defined midway between these and the central area, with some dark, slightly reddish shading or blotches between them in cell and submedian area; central area almost 5 mm. wide at costa, 3.5 mm. at hindmargin, its boundary-lines distinct, several other lines fairly strong anteriorly and at hindmargin, otherwise weak, some of them irregularly confluent about the black cell-dot and here enclosing some reddish shading, the median area otherwise not darkened; postmedian line with the usual inward curve between the radials, the double lobe between R^3 and M^2 rather weak; a faint line close to and parallel with the postmedian distally, a strong one farther out; subterminal line rather weak (pale olivaceous, not white), with some blackish shading proximally and distally at costa and (forming a pair of spots proximally, a pair of wedges distally) between the radials, a single wedge distally between R^3 and M^1 and a strong, irregular shade proximally from M^1 to tornus, constricted at M^2 ; pairs of elongate

terminal dots at the veins; fringe dark-chequered.—*Hindwing* creamy white, with smoky clouding at base and extremely feeble subterminal shading; inner-marginal fold moderate, slightly marked with blackish.

Forewing beneath dirty whitish from fold to hindmargin, otherwise mostly with smoky-fuscous suffusion, leaving free a distinct, posteriorly broadening, postmedian band (divided by a very faint dark line) and a whitish subterminal, which is broken into dots anteriorly, thick and continuous posteriorly, connected with termen by a whitish spot behind R^3 ; cell-mark distinct, elongate; distal edge of median area not corresponding to that of upperside but rather acutely projecting at R^3 . Hindwing beneath dirty whitish with distinct blackish cell-dot, moderately distinct postmedian line (inbent between radials, moderately acute outwards before and behind) and weaker double subterminal shade, more or less interrupted (at least the outer) at costa and behind R^3 , confluent behind M^1 . Both wings with termen and fringe nearly as above.

Urnuasi, S. Peru, 7000 ft., April—May 1910 (H. and C. Watkins). Type and another in coll. L. B. Prout.

60. *Hammaptera tritypa* sp. nov.

♂, 36 mm. Face pale olivaceous, somewhat mixed with whitish. Palpus quite short, not reaching beyond frons; olivaceous. Antennal ciliation minute. Vertex and thorax above olivaceous, slightly mixed with rufous; metathoracic tuft blackish. Abdomen dorsally pale, with blackish irroration, each segment with a blackish belt posteriorly, formed of confluent pairs of spots. Legs as in the preceding.

Forewing white, densely but irregularly irrorated with olive scales, which form some vague, confluent lines proximally to the median area and a well-defined line distally to the same; subbasal line double, inbent behind cell, feeble anteriorly, strong and black posteriorly; median band 5 mm. wide at costa, less than 3 mm. at hindmargin, formed about as in *emberizata* Guen., olivaceous in places, belt predominantly mixed with chestnut; its boundary lines black, the antemedian thickened at hindmargin, some finer and less defined black lines traversing the band, the middle ones confluent into a spot behind M^2 ; middle of band otherwise paler, especially at costa; cell-dot strong, deep black; distal area clouded with chestnut in its anterior half (except at apex), with olivaceous in its posterior; subterminal line white, between radials tinged with chestnut, posteriorly thickened, deeply lunulate outward before and behind M^1 , acutely angled inward on SM^2 , then running to tornus; elongate black markings between the radials proximally and distally to the subterminal; termen with strong paired black dots; fringe weakly chequered.—*Hindwing* dark smoky except at costal margin; a slightly less dark postmedian band suggested.

Both wings beneath nearly as in *subtersignata* Prout (*supra*), not quite so sharply marked, angle of postmedian line less deep (especially on hindwing), marginal band of hindwing not interrupted; forewing with a longitudinally elongate dark spot in cell rather nearer to base than to cell-spot.

El Rosario, Rio Pastaza, E. Ecuador, 4900 ft., January 1910. Type in coll. L. B. Prout.

61. *Hammaptera fosteri* sp. nov.

♂, 33–38 mm. Face olivaceous. Palpus rather short, with appressed scales; olivaceous. Antennal ciliation minute. Metathoracic double crest not very high.

Thorax and abdomen concolorous with wings, abdomen dotted or strigulated with fuscous dorsally and with paired blackish spots (almost or quite connected into belts) at the ends of the segments.

Shape and aspect of *emberizata* Guen., but larger.—*Forewing* rather more uniformly dull olivaceous, generally without reddish admixture, median band broader, at least at hindmargin, its proximal edge more sinuous, the two lobes at its distal margin more equal, distal area generally confusedly marked.—*Hindwing* rather more greyish, often darkened at distal margin.

Underside dirty yellowish white, forewing with fuscous cell-spot, postmedian band from costa, joining a fuscous cloud which runs behind cell from R^3 to M^2 , in varying extent and strength distally, but generally continuing narrowly in front of M^2 as far as termen; an apical cloud from costa to R^3 , leaving the extreme apex clear, often a line connecting the proximal edge of this cloud with the posterior one. Hindwing beneath with cell-spot, very feeble greyish cloudings and usually rather narrow dark marginal band.

Sapucay, Paraguay (W. Foster), a long series in coll. L. B. Prout (including the type) and coll. Brit. Mus.; mostly from end of August to beginning of October, a few in November and December.

62. *Rhopalista hypochrysa* sp. nov.

♂, 34 mm. Shape and structure essentially as in *viridifusata* Walk. (= *gazapina* Dogn. = *albidivisa* Warr.), palpus perhaps slightly shorter, abdominal crests less developed. Head and body mostly ochreous, tegula blackish-spotted. Legs in part (especially on the tarsi) infuscated, with the ends of the joints remaining pale.

Forewing with proximal area mostly occupied by olivaceous basal and subbasal bands, the narrow interspace whitish; both with some blackish marking at costa and hindmargin; median band moderate, olivaceous, from fold to hindmargin black, the olivaceous part appearing rippled with indeterminate lines, which become distinct and black (four in number) at costa; proximal boundary of band concave, marked by a white line, which is slightly dentate on the veins; distal boundary angulated outward at R^3 , slightly concave before and more deeply behind the angle, terminating at hindmargin near tornus; cell-spot black, somewhat elongate; pale band beyond the median area somewhat lunulate-dentate, double, whiter proximally than distally, divided by an olivaceous line; area between this band and the subterminal line reddish-brown; subterminal line whitish, lunulate-dentate, ending at tornus, the deepest tooth on SC^5 ; distal margin olivaceous, paler behind R^3 , some dark marking at apex and between radials; terminal black dots strong, in pairs at the vein-ends, but slightly connected by a fine blackish line; fringe spotted with blackish opposite the veins.—*Hindwing* golden yellow, with grey suffusion basally and along abdominal margin, becoming blackish on the marginal fold; terminal dots and fringe spots obsolete anteriorly.

Both wings beneath golden yellow, forewing with a large, hindwing with a small black cell-spot; forewing with some faint greyish median suffusions, strongest at hindmargin, and with a black distal border from costa nearly to tornus, commencing nearly 4 mm. wide at costa and leaving free a small white apical spot, narrowing gradually to R^3 , where it is 2 mm. wide, scarcely widening again posteriorly; hindwing with a much narrower and more incomplete border, not reaching costa and only strong between the radials; folded area and the contained hair-pencil whitish.

Yahuarmayo, Peru, 1200 ft., April—May 1912. Type in coll. L. B. Prout, topotype in coll. Brit. Mus.

Evidently related to *semiflava* Dogn. (*Mém. Soc. Ent. Belg.* xxii. 15), from Medina, Colombia, which I only know from the description. The olivaceous and black areas of the forewing above are overlaid with scattered, very pale blue-grey scales.

63. *Calocalpe inhabilis* sp. nov.

♂, 43–46 mm. Face and palpus dark fuscous, the latter ochreous-whitish beneath, at least on the first joint. Head and body concolorous with wings; abdomen with blackish dorsal belts or pairs of spots at the ends of the segments, about as in *cervinalis* Scop., the first not quite so narrow.

Wings similarly shaped to those of *affirmata* Guen., or slightly narrower, the inner-marginal flap and hair-tuft of hindwing not quite so strongly developed, the latter very glossy grey.—*Forewing* glossy light grey, with very fine brown irroration—finer than in *cervinalis simplonica* Wackerzapp, to which, or to *montivagata* Dup., its general tone could be compared except in its stronger gloss; lines in basal and subbasal areas feeble, less dentate than in *affirmata*, those of the basal area slightly more fuscous-tinged than those of the subbasal; median band of moderate breadth, its edges in part strongly dark-shaded, proximal edge curved anteriorly, then waved, about parallel with termen; distal edge nearly vertical from costa to SC⁵, not deeply indented, then slightly sinuous or very feebly lunulate-dentate, without marked projections or incisions; discal mark fairly large; lines in distal area almost entirely obsolete, except the lunulate-dentate whitish subterminal, which is more deeply inangled at M² than in *cervinalis*, but scarcely thickens behind this; space between subterminal and termen browner; terminal black line slender.—*Hindwing* glossy grey, almost unmarked except for the small discal dot and some darkening at the inner-marginal flap.

Underside paler and less brown than in *affirmata*, with smaller discal dots.

Acopampa, S. Peru, 11,500 ft., several ♂♂. Type in coll. L. B. Prout.

Distinguished by the greyish tone, comparatively smooth boundary of median band, weakly marked hindwing, etc.

M. Dognin (to whom I sent this species) tells me this is like his *C. inepta* (*Ann. Soc. Ent. Belg.* xlv. 218, as *Scotosia*) from Ecuador, except in its much larger size and unmarked hindwing; it may be a subspecies, but as I have not seen *inepta* and the description is not very full, it is necessary to describe the new form independently.

64. *Psaliodes semisecta* sp. nov.

♂ 25 mm. Similar to *aurativena* Warr., *Nov. Zool.* xi. 62, the veins not quite such a bright golden brown, the following differences in the markings:

Forewing with basal patch regularly oblique basewards from M to hindmargin, closely followed in this half of its course by a fine dark brown line; central band projecting more basewards at costa, greatly constricted in anterior half of cell by a very deep indentation of its whitish proximal edging; a more definite rust-coloured band proximally to the white subterminal spots (in *aurativena* this band is vaguely indicated by fuscous irroration and strigulation).—*Hindwing* much paler, grey-whitish with vague curved grey postmedian line in inner-marginal half.

Uruhuasi, S. Peru, 7000 ft., April—May 1910. Type in coll. L. B. Prout.

65. *Psaliodes quinquelatera* sp. nov.

♂, 22 mm.; ♀, 24 mm. Head mostly russet, lateral edges of face pale, palpus with much pale irroration. Thorax and abdomen (especially above) variegated in different shades of brown, a large dark spot about middle of abdomen dorsally. Legs spotted and irrorated with blackish fuscous.

Forewing with apex acute, termen sinuous, being slightly concave between apex and R^3 , rather strongly oblique from M^1 to tornus; white, but mostly occupied with the russet markings; basal patch wider at costa than at hindmargin, its boundary almost straight, except for a minute angle outward on M ; intermediate white band about 1 mm. wide, marked with some russet irroration down the middle and tinged with light brown at costal end; median band broad anteriorly, its proximal edge straight, its distal almost straight from costa nearly to R^3 , here angled, then again almost straight to hindmargin scarcely beyond middle (thus near its proximal edge), its colour slightly darkened from fold to hindmargin; outer white band slender, broadening near hindmargin, intersected by a fine dark line; distal area russet as far as the subterminal line; subterminal line white, very fine, slightly interrupted, oblique from apex, in its anterior half forming a large curve which encloses the dark subapical patch characteristic of many of the genus, with acute teeth on R^3 and M^1 almost reaching the termen, posteriorly somewhat receding therefrom but very vague, the area distally to it white, strongly irrorated with dark reddish brown; a blackish fuscous terminal line; fringe heavily spotted with blackish fuscous at ends of veins and suffused with the same between M^2 and SM^2 .—*Hindwing* with termen somewhat irregularly waved; dirty pale grey, with a slight suffusion of russet; markings vague, shadowing those of the underside.

Forewing beneath coloured about as hindwing above, the costal area tinged with light ochreous brown; distal area (especially anteriorly) slightly paler than the rest; postmedian line traceable, most distinct in anterior half, thickening towards costa; an oblique dark, slightly interrupted subapical dash. Hindwing beneath dirty whitish, with some irregular, mostly feeble, dark irroration; base of costa tinged with light ochreous brown; a dark mark along the oblique base of SC ; a large dark cell-spot; a fine, strongly-curved postmedian line, running from a small spot at costa to a large blotch at abdominal margin; a slight submarginal shade, becoming strong at abdominal margin.

Argentine Republic: San Ignacio Missions, Upper Parana, February, type (♂) and June, paratype (♀) in coll. L. B. Prout.

Very distinct in the form of the median band.

66. *Psaliodes mediofracta* sp. nov.

♂ ♀, 26–27 mm. Similar to *adhaesiata* Feld. (*Reise Novara, Lep. Het.* t. 132, f. 12), of which M. Dognin (in litt.) suggested it might be a form. Larger; ♂ abdomen without hair-pencil beneath. Both wings with DC more strongly (sometimes very strongly) biangulate, R^2 arising considerably nearer to R^3 than to R^1 .

Forewing with the median band strongly darkened, except at costal margin, its edges much less straight than in *adhaesiata*; the form of this band is characteristic for the species; it is completely interrupted in the middle, anterior half with the blackened part roughly triangular, its anterior edge starting just inside cell and running obliquely out towards costa, its posterior edge running behind the oblique

part of DC³ and the base of R², posterior half of band 1.5–2 mm. broad, almost vertical from hindmargin to basal part of M², distally with a small pointed projection behind M², anteriorly connected with an elongate spot between M² and M¹.—*Hindwing* pale greyish, with a rather whiter postmedian band.

Hindwing beneath mostly whitish, with sharp cell-dot and with interrupted dentate lines (or rows of interneural spots) indicating the boundaries of the postmedian band; the proximal of these lines makes a strong outward projection at SC²—R¹.

Acopampa, S. Peru, 11,500 ft., January—March 1910. Type in coll. L. B. Prout.

67. *Horisme palmeri* sp. nov.

♂, 27 mm. Build of *H. marmorata* Dogn. (*Ann. Soc. Ent. Belg.* xlv. 348). Antennal ciliation fully as long as diameter of shaft. Head and body considerably darker than in *marmorata*, first abdominal tergite bluish-silvery, second and third cinnamon, a similarly coloured spot near anus.

Forewing with the dark parts considerably darker than in *marmorata* (nearly burnt umber), glossy, the lines and irroration bluish-silvery; pattern similar to that of *marmorata*, proximally still more ill-defined; median area of more uniform width throughout, the antemedian line being less strongly excurved in cell, the postmedian with a weaker projection (single, pointed, behind R³); cell-dot more rounded; pale shades of distal area bluish-silvery, the patch between the radials not darker than the other dark parts.—*Hindwing* correspondingly but more uniformly darkened, markings quite weak.

Both wings beneath much darker and more uniform than in *marmorata*.

San Antonio, W. Colombia, 5800 ft., December 1907 (M. G. Palmer). Type in coll. L. B. Prout.

68. *Eupithecia (Eucymatoge) pippa* sp. nov.

♂, 25 mm. Superficially similar to *E. (E.) hormiga* Dogn., *Ann. Soc. Ent. Belg.* xliii. 143, of about the same shape and with the same robust, rather elongate abdomen, but differing as follows:

Palpus purple-brown, mixed with white below. Antenna thick, with minute ciliation (in *hormiga* both sexes have long ciliation). Face and vertex less white, more spotted with black. Thorax and abdomen more strongly mixed with brown and blackish.

Forewing with stronger brownish (distally red-brownish) suffusions in posterior half and in the oblique pale patch which interrupts the subterminal line near apex; the black markings thickened, at least the anterior half of the dark shades which bound the median area and the posterior end of the distal one; median area itself rather broader, its distal edge bending outward more strongly subcostally; discal dot much smaller, less obliquely placed; subterminal line more interrupted, the black radial marking proximally to it enlarged into an elongate blotch.—*Hindwing* uniform smoke-colour.

Underside with rather more numerous lines indicated, at least on hindwing; both wings with the postmedian line more bent than in *hormiga*, discal dots smaller; tone rather less strongly glossy.

Huancabamba, N. Peru. Type in coll. L. B. Prout; paratype in coll. Brit. Mus.

69. *Eupithecia coetulata* sp. nov.

♂, 24 mm.; ♀, 28 mm. Face with slender, pointed tuft below. Palpus strong, rough-scaled, about twice as long as diameter of eye. Antenna of ♂ nearly simple. Head and body mostly white; abdomen with some ferruginous and fuscous admixture dorsally; foreleg above blackish, the tibia and tarsus broadly white-spotted.

Forewing elongate, termen long, strongly oblique, slightly curved, tornus weak, hindmargin slightly curved; rather glossy, white, with mostly weak fuscous irroration; markings fuscous mixed with black; basal patch scarcely darkened, except an ill-defined costal spot at or beyond one-fifth; a costal spot (ferruginous-mixed) at two-fifths or beyond, from which is traceable across the wing a slight, curved antemedian band or double line to hindmargin beyond one-third; postmedian line expressed by a strong dark costal mark at about three-fifths, running rather obliquely inwards to SC⁵, three large, partially confluent spots on the radials more distally placed (not so oblique as termen), a dot on M¹, slighter traces posteriorly, a mark at hindmargin near tornus; some vein-dots a short distance beyond (distally to) these markings; a conspicuous double spot (costal and subcostal, longitudinally extended, SC⁴ and SC⁵ here ferruginous) near apex, followed by a row of small vein-dots and a more distally placed, more irregular row of interneural dots, those between the radials enlarged; radials here and to termen ferruginous; an oblique white dash from apex, indicated by darker shading in front and behind, the latter continued to the radials at termen, but feeble; fringe ample, the proximal half strongly, the distal much more feebly dark-spotted opposite the veins.—*Hindwing* with costa long, apex rather rounded, termen straight from R¹ to M¹, more rounded behind; white, with about seven lines of more or less confluent spots from abdominal margin to M and M², the strongest being a somewhat confluent pair at two-thirds or three-fourths; fringe as on forewing.

Forewing beneath with costal margin strongly darkened from base to one-fourth, a sharp discal dot, the broken postmedian band strong in anterior half, the subapical costal spot still stronger than above. Hindwing beneath white, with small discal dot and with three curved lines of vein-dots, the most proximal about the middle of the wing, the second near it, weak or partly obsolete.

Acopampa, S. Peru, 11,500 ft., January—March 1910. Type in coll. L. B. Prout.

Perhaps a form of *candidata* Warr. (*Nov. Zool.* xiv. 250), which is rather narrower winged and with less markings.

70. *Eupithecia bicubitata* sp. nov.

♀, 28 mm. Structure of the preceding, wings slightly narrower, especially the hindwing, which has the tornus more rounded off. Head, body and legs predominantly dark fuscous, only a little mottled (the legs banded) with white or whitish. Abdominal crests narrow, white.

Forewing glossy, white, clouded over with greyish fuscous and irrorated with darker fuscous, so that the ground-colour is scarcely noticeable except as white dots or spots on the veins, slight mottlings in median area, a conspicuous oblique double mark from costa to SC⁵ distally to the median area, an oblong patch (intersected by the wavy dark lines) from postmedian line nearly to termen between R³ and

M² and a fine subterminal line which becomes thick and curved between M² and tornus; a small blackish cell-dot; numerous indistinct wavy dark fuscous lines; antemedian band apparently almost as in the preceding species; postmedian thickened and blackened between R³ and M²; a blackish mark behind M² between postmedian and subterminal; a somewhat interrupted blackish terminal line; fringe marked nearly as in *coetulata*, but altogether darker.—*Hindwing* dirty whitish, suffused with greyish fuscous, inner-marginal region darker fuscous, more strongly marked; some feeble wavy lines in proximal part; cell-dot weak, postmedian line and the double pale band beyond not strong, at the radials strongly curved; subterminal line ill-defined; terminal line and fringe nearly as on forewing, the fringe rather whiter.

Forewing beneath more suffused throughout; markings mostly weak, at costa stronger; cell-dot strong. *Hindwing* beneath more strongly marked than above.

Acopampa, S. Peru, 11,500 ft., February—March 1910 (H. and C. Watkins). Type in coll. L. B. Prout.

71. *Eupithecia canonica* sp. nov.

♂, 26 mm. Head and body whitish grey, strongly mixed with dark fuscous; underside, also base of abdomen above, whiter. Antenna almost simple. Abdominal crests scarcely noticeable.

Forewing decidedly narrower still than in the preceding, only 4.5 mm. wide from the (rounded) tornus to midcosta; violet-grey, with some dark fuscous irroration and with some ferruginous-ochreous suffusions, namely: at base on SM² and especially between M and costa; on antemedian line, especially before M and at SM²; on radials and M¹ from postmedian line to cell, though strongest at postmedian line; and in an oblique pale patch from apex to postmedian line, especially on the veins; cell-dot present, small; antemedian line or band vague, apparently as in *coetulata*; postmedian weak, angularly broken near costa as in *coetulata*; pale double band beyond narrow; subterminal line slender and very indistinct, lunulate-dentate; terminal line slightly interrupted; fringe proximally whitish, dark-spotted opposite the veins.—*Hindwing* narrow, dirty whitish, becoming greyer at distal margin; abdominal margin greyer, with beginnings of dark lines; terminal line slightly interrupted; fringe whitish, dark-spotted opposite the veins.

Forewing beneath rather uniformly suffused, very feebly marked. *Hindwing* beneath dirty whitish, distally more broadly smoky than above; a distinct cell-dot and indistinct line beyond.

Acopampa, S. Peru, 11,500 ft., January—March 1910 (H. and C. Watkins), type in coll. L. B. Prout. A ♀, rather larger and paler, with cell-dot on hindwing more distinct, in coll. Brit. Mus.

72. *Eupithecia parallaxis* sp. nov.

♂, 20–21 mm. Face slightly tufted below; blackish. Palpus rather stout, about one-and-a-half times the length of diameter of eye; blackish. Antennal ciliation longer than diameter of shaft, in slender pairs of fascicles. Vertex, thorax and abdomen fuscous; crests not very strong.

Forewing with costa very little arched, apex moderate, termen very gently curved, moderately strongly oblique; dark fuscous, with slight cinnamon suffusion, a narrow cinnamon band proximally to the median area and a broader one distally thereto, divided by a darker line, the entire aspect somewhat blurred; the dark median area is about, or almost, 3 mm. wide, almost as oblique as termen, apparently tolerably straight-edged and uniform in width throughout, except at costa, where the antemedian band curves basewards and the postmedian is slightly broken basewards; a black cell-dot nearer to the proximal than to the distal margin of the median area; slight indications of a cinnamon subterminal line traceable on the dark distal area in certain lights; terminal dark line extremely fine, scarcely noticeable; a very fine, inconspicuous pale line at base of fringe.—*Hindwing* paler, darkening very slightly towards termen and more strongly in abdominal region, where there are ill-defined dark spots or beginnings of lines, and the beginning of a divided cinnamon postmedian band.

Underside glossy fuscous, the forewing almost uniform, the hindwing paler, with traces of thick dark lines or narrow bands, one about the middle of the wing the most noticeable.

San Antonio, W. Colombia, 5800 ft., November 1907 (type) and December 1907 (M. G. Palmer), in coll. L. B. Prout.

73. *Eupithecia saphenes* sp. nov.

♀, 20 mm. Palpus almost twice as long as diameter of eye, second joint rather long and strong. Antenna minutely ciliated. Head and body mostly concolorous with wings; palpus more ochreous, abdomen dorsally with some dark admixture, fore and middle legs largely dark fuscous, with pale spots at the ends of the joints. Wings shaped nearly as in *ornea* Druce (*Biol. Centr.-Amer., Lep. Het.* ii. 146, t. liv. 29), the forewing with termen less oblique anteriorly, rather more convex, the discrepancy between the size of the wings therefore still more noticeable than in Druce's species.

Forewing rather more tinged with reddish than in *ornea*, especially distally and along costal and hindmargin; subbasal line irregular, oblique inward, chiefly noticeable as a V-shaped subcostal mark (pointing outward) and a slightly interrupted line from M to hindmargin near base, thickest posteriorly; cell-spot as in *ornea*; antemedian line conspicuous as a costal spot near cell-spot, angled in cell, then oblique inward but very weak; postmedian line placed and shaped nearly as in *tantillaria* Bdv. (= *pusillata* Hb.), but rather less inbent behind middle, its entire posterior part very weak; subterminal line fine, distinct, not or scarcely interrupted, feebly lunulate-dentate throughout, forming a long, thickened spot near tornus; slight dark shading proximally to the subterminal, and some slight interneural streaks distally, at least in anterior half of wing; terminal dark line interrupted by minute white dots at the veins; fringe whitish (purer in a basal line), with large dark spots at the vein-ends.—*Hindwing* with posterior half and termen concolorous with forewing, anterior half otherwise whitish; cell-dot small, grey; weak beginnings of one or two proximal lines at abdominal margin; a curved grey postmedian line just beyond middle, becoming blacker in abdominal region, here accompanied proximally by some dark irroration on the veins and distally by a fine whitish line; subterminal line obsolescent and interrupted anteriorly, distinct posteriorly, between R³ and M² more strongly dentate than on the forewing; termen and fringe as on forewing.

Underside more greyish, the forewing somewhat less, the hindwing somewhat more strongly marked than above.

Caracas, Venezuela, 2 ♀♀ in coll. L. B. Prout.

SUBFAMILY GEOMETRINAE

74. *Apicia mediosignata* sp. nov.

♂, 43 mm. Face brown above, whitish below. Palpus mostly dark fuscous, parts of the first and third joints pale. Head and body concolorous with wings. Antenna pectinate to rather near apex. Hindtibia moderately strongly dilated; mostly dark-coloured.

Forewing with costa shouldered at base, gently arched to beyond middle, termen very gently concave anteriorly, strongly angled at R^3 , the posterior part being straight and very oblique; cell considerably over one-half, DC strongly curved behind, M^1 therefore rather widely separate from R^3 , stalk of SC^{1-2} connected by very short bar with C, SC^2 also connected with SC^{3-4} ; flesh-colour, with sparse black irroration; proximal area olivaceous in cell, somewhat vinaceous posteriorly; antemedian line rather far from base, slight, only thickened for a short distance about SC and at hindmargin, rather strongly bent in front of M; median shade indicated by a thick mark running from costa almost to cell-dot; cell-dot moderate, black; postmedian line from a thick black costal mark at five-sevenths, then fine and exceedingly oblique outward along SC^5 almost straight to R^1 , oblique inward and very slightly incurved to hindmargin little beyond the middle, throughout this part of its course scarcely marked except by black vein-spots and by a slight pale line which accompanies it distally and is very shallowly lunulate inward between the veins; an olivaceous shade proximally to the postmedian, a vinaceous shade distally; some olivaceous shading in subterminal region and some extremely vague dark spots near apex; terminal line almost obsolete; fringe flesh-colour, irregularly mixed with olivaceous.—*Hindwing* with apex nearly squared, termen waved to R^3 , here bent and with a moderate tooth, then almost straight, tornus pronounced; cell about one-half, DC^3 and M^1 nearly as on forewing; concolorous with forewing; discal dot large, black, confluent distally with a conspicuous, somewhat sinuous black median (postmedian) line which runs from SC^2 to abdominal margin but is interrupted between M^1 and M^2 and between M^2 and the fold; olivaceous and vinaceous shades proximally and distally hereto as on forewing; the pale subterminal line and its olivaceous proximal shading rather more definite than on forewing, but not sharp.

Forewing beneath more suffused with dark smoke-colour than above, especially anteriorly and proximally, hindmargin and a spot at apex pale; discal dot black, postmedian line indicated, fairly conspicuous at costa. Hindwing beneath more blurred, but with the markings of the upperside indicated.

Uruhuasi, S. Peru, 7000 ft., April—May 1910 (H. C. Watkins). Type in coll. L. B. Prout. A second example dated March—April.

Perhaps near *jaspidaria* Guen., but the hindwing not dentate. By shape this species would probably be referred to *Loxapicia* Warr., which, however, cannot be regarded as a tenable genus, various intergrades and sexual differences bridging over the distinctions.

75. *Isochromodes quadriplagiata* sp. nov.

♀, 30 mm. Head and body concolorous with wings; the face, vertex and palpus strongly mixed with ferruginous.

Forewing with apex moderately sharp, termen very slightly sinuate anteriorly, sharply elbowed at R^3 ; white-grey with a slight tinge of bluish and with sparse ferruginous irroration; costal margin ferruginous; cell-dot black, minute; lines ferruginous; antemedian oblique outward from before one-fourth costa, angled in cell, dentate outward on submedian fold, very slightly incurved between, reaching hindmargin at about one-third; median thicker, from three-fifths costa, inbent opposite cell, oblique outward to R^3 , thence close to postmedian but rather zigzag; postmedian slightly crenulate, slightly sinuous, edged distally by a very fine crenulate line of the ground-colour; distal area mostly ferruginous, with a rather thick dentate subterminal line of the ground-colour, ending at tornus, and a large spot of the ground-colour between R^2 and M^1 , touching termen from behind R^3 and approaching the postmedian proximally, thus crossing the subterminal; terminal line browner, not conspicuous; fringe weakly spotted with brown opposite the veins. — *Hindwing* with termen somewhat waved, slightly toothed at SC^2 and strongly at R^3 ; basal and most of costal area as ground-colour of forewing, the rest suffused with ferruginous, a thick vague median shade from abdominal margin near the postmedian, oblique inward nearly to cell-dot, then still more oblique, vanishing in cell; postmedian line and distal area as on forewing.

Underside pale grey, with scattered blackish dots; cell-dot black; postmedian line chiefly indicated by dark vein-dots; distal area only weakly (on hindwing very weakly, narrowly, only subterminally) suffused with ferruginous brown, the pale spots wanting, the forewing on the other hand with a small pale terminal patch from apex to R^1 and more feebly to R^3 .

Preto, Brazil. Type in coll. L. B. Prout. A rather larger, still brighter ♀ from Rio Janeiro has for many years stood in coll. Brit. Mus. under the MS. name of *quadriplagiata* Warr., which I have adopted. A worn ♀ from Espiritu Santo is in coll. Thierry-Mieg.

Very similar to some of the brightest forms of the excessively variable *brumosa* Dogn. (*Ann. Soc. Ent. Belg.* xl. 138 = *canisquama* Warr., *Nov. Zool.* iv. 504 = *beon* Druce, *Biol. Centr.-Amer., Lep. Het.* ii. 537, t. xcix. 7), and sharing with it a peculiarity of venation which has not hitherto been pointed out—the strong anastomosis of C of the hindwing with SC, whereas in normal *Isochromodes* it is only appressed; distinguished by having the third joint of the palpus relatively short and by the conspicuous mid-terminal patches.

76. *Anisoperas asphales* sp. nov.

♂, 34 mm. Like *atropunctaria* Walk. (*List Lep. Ins.* xxvi. 1517) but with the antenna filiform (in *atropunctaria* strongly dentate), the colouring paler, rather greyer, lines rather strong, antemedian not curved (straight from hindmargin to cell-fold, here right-angled), postmedian (especially on underside) farther from termen, the indistinct subterminal line apparently less deeply dentate.

Chanchamayo, E. Peru, 1000 m., October—November 1906. Type in coll. L. B. Prout.

The antennal structure is about as in *dolens* Druce, which has a much more sinuous postmedian line and lacks the white costal spot distally to the postmedian

of the forewing. In all the species of the group the ♂ antenna is minutely ciliated, with a single longer bristle on each side of each joint. I am not sure that *Anisoperas* is anything more than a section of *Tetragonodes* Guen. with non-pectinate antenna. My *Anisoperas pectinata* (*Ann. Mag. Nat. Hist.* (8) vi. 521) should at any rate be referred to *Tetragonodes* and is quite near the type of that genus—*anopsaria* Guen.

77. *Digonis pristopera* nom. nov.

Microclysia philippii Bartl.-Calv., *An. Univ. Chile*, lxxxiv. 828 (1893); *Tr. Ent. Soc. Lond.* 1893, p. 220.

This species is certainly congeneric with the one which Bartlett-Calvert himself described two or three years earlier (*Nuev. Lep. Chile*, p. 10, f. 1, ? 1890; *Ent. Mo. Mag.* xxvii. 314, 1891) as *Digonis philippii* (*phillippii* in *An. Univ. Chile*, lxxxiv. 818, t. 1, f. 1). They are only distinguished structurally by slight differences of shape. A new name is therefore necessary for the later one, and a fresh protest should be registered against the mischievous practice of duplicating specific names in closely allied genera.

78. *Microgonia dulcisona* sp. nov.

♂, 42 mm. Head and body concolorous with wings. Face and vertex with a tinge of purplish. Palpus reddish-ochreous.

Wings glossy, delicate flesh-colour, in certain lights with the faintest possible suggestion of more brownish transverse striation; a few scattered ochreous and still fewer blackish-fuscous scales.—*Forewing* with costal edge narrowly ochreous; discal dot minute, of mixed ochreous and blackish scales; lines obsolete, a vague purplish-grey spot at two-thirds hindmargin indicating the position of the end of the postmedian; distal area almost inappreciably darkened, towards termen and especially at tornus mixed with slight purple-grey shading; fringe reddish-ochreous except at tips.—*Hindwing* with proximal half slightly paler and more yellowish; costal edge pale; no discal dot; a very vague purple-grey shade or band from R^1 just beyond cell to abdominal margin at three-fifths, corresponding to the hind-marginal spot of forewing; distal area without the purplish-grey shades of forewing; fringe as on forewing.

Forewing beneath coloured nearly as above, but with a more definite grey distal border; hindwing paler, with a conspicuous discal dot (larger than that of forewing).

Chili: Principal, February 1888 (V. Izquierdo). Type in coll. L. B. Prout.

Very different, in colour and absence of lines, from *quietaria* Feld. (*Reise Novara, Lep. Het.* t. cxviii. 19) = *flavaria* Butl. (*Tr. Ent. Soc. Lond.* 1882, p. 342), nec Blanch., to which it is probably related. In both, SC^1 and SC^2 arise from the cell, the former anastomosing with C and with the latter; in *quietaria* SC^2 also anastomoses slightly with SC^{3-4} , but not in *dulcisona*. In some examples of *quietaria*—as is liable to occur in the group and becomes normal in the most typical section of *Microgonia*—the base of SC^2 is obsolete, leaving this vein apparently long-stalked with SC^1 . Butler's misidentification of *flavaria* Blanch. (type of the genus *Ennada* Blanch.), with its pectinate antenna, is unaccountable, unless he judged by the inexact figure and ignored the text; *Ennada* certainly supplants *Anisogonia* Warr., and *carnea* Butl. (*Tr. Ent. Soc. Lond.* 1882, p. 353) probably sinks to *flavaria*.

79. *Macrolyrcea monochorda* sp. nov.

♂, 45–49 mm. Face dark chocolate above, pale ochreous below. Palpus with third joint relatively rather short (about 0.6 mm.); first joint ochreous, the rest mostly chocolate. Clavola and scaled surface of basal part of antenna white. Vertex and anterior part of thorax above bright ochreous, posterior part darker-mixed; abdomen concolorous with hindwing. Legs mixed whitish and chocolate, the hair on femora more ochreous.

Forewing rather broad, apex only very minutely and bluntly produced; termen strongly convex; cell fully two-fifths, SC^1 free, SC^2 connected by slender bar with SC^{3-4} ; ochreous, with very slight pinkish reflections in places; antemedian line obsolete, very faintly suggested at costa and hindmargin; cell-mark blackish, accompanied by slight pink suffusion, in the type ill-defined but not minute, in one example almost obsolete; postmedian line blackish, from costa near apex to hindmargin at three-fifths, not at all dentate, almost straight, only with a very faint proximal curve between R^1 and SM^2 , or almost to hindmargin; the ochreous ground-colour somewhat brightened or deepened for a space of 2 or 3 mm. distally to this line.—*Hindwing* paler, especially at base, the pink suffusion rather more noticeable; no markings.

Forewing beneath rather paler than above, the line feebly showing through.

Chili (Izquierdo). Type in coll. L. B. Prout. Talcahuano, 2 ♂♂ in coll. Brit. Mus., one a slight ab. with line obsolete, discal mark stronger.

Differs from typical *Macrolyrcea* in having the third joint of the palpus only about half the length, wings broader, apex less produced, hindtibia not dilated. Most of the similar genera (*Tetracis*, *Erosina*, etc.) have SC^1 anastomosing strongly with C and with SC^2 .

80. *Meticulodes albiditata* sp. nov.

♂. Closely related to *xylinaria* Guen. (= *xylochromaria* Walk.), but the wings broader, fringe perhaps rather more deeply crenulate, colouring brighter, forewing with large white cell-spot (beneath still larger), no longitudinal fuscous streak anteriorly to R^3 , postmedian line slightly more crenulate, apical pale patch more extended, underside with stronger blackish suffusions, postmedian line of hindwing more bent basewards between radials, approaching the form seen in *cyclodaria* Feld.

Jimenez, W. Colombia, 1600 ft., March 1907, wet season. Type in coll. L. B. Prout. Also not rare at Huancabamba and Oconeque, Peru.

81. *Sangala cyaneres* sp. nov.

♂, 38 mm. Palpus rather short, second joint with shortly projecting scales above, third joint quite small, triangularly scaled, partly concealed. Antenna with the pectinations of the inner series entirely wanting, those of the outer reduced to strong teeth. Head, body, and legs concolorous with wings, thorax with a red shoulder-spot.

Wings shaped as in *caelisigna* Walk.—*Forewing* with a quite similar, anteriorly tapering patch from middle of hindmargin nearly to costa, its blue colour, however, rather less pure, showing, at most angles of light, strong bronzy reflections as in "*Nelo*" *philodamea* Druce (*Proc. Zool. Soc. Lond.* 1885, p. 534); no red spot;

fringe paler.—*Hindwing* black, in the middle with metallic blue reflections; fringe as on forewing.

Underside brown-black, shot with rather strong metallic blue reflections which are only wanting at the termen and on the (somewhat darkened) veins; hindwing with a small red spot at base.

Jimenez, W. Colombia, 1600 ft., March 1907, wet season. Type in coll. L. B. Prout.

Distinguished from those aberrations of *caelisigna* in which the red discal spot is wanting by its rather larger size, bluer hindwing and underside, and especially by the antennal structure, which agrees with that of *Siosta bifasciata* Latr. and shows that that genus must not be maintained on the antenna (cf. Warren, *Nov. Zool.* ii. 124, 125) but on the less slender build, longer palpus, etc. The palpus of *cyaneres* possibly has the second joint somewhat rougher-scaled than in *caelisigna*, the third joint more concealed, but there is certainly essential agreement.

82. *Sangalopsis thisbe* sp. nov.

♂, 30 mm. Similar to *ilione* Th.-Mieg. (*Le Nat.* xv. 161), differing as follows:

Smaller (Thierry-Mieg's measurements are taken from tip to tip in set specimens and do not show the real expanse); abdomen without pale lateral line.—*Forewing* without bluish reflections, the white patch much narrower (1.5 mm.), but continued in a small spot behind M².—*Hindwing* not precisely the same shape, being a little less full in the region of the tornus.—Underside uniformly blackish, excepting the white patch of the forewing.

Uruhuasi, S. Peru, 7000 ft., April—May 1910 (H. and C. Watkins). Type in coll. L. B. Prout. A second example dated March—April.

NEW INDO-AUSTRALIAN *GEOMETRIDAE*.

BY LOUIS B. PROUT, F.E.S.

SUBFAMILY OENOCHROMINAE

1. *Ozola sinuicosta* *grisescens* subsp. nov.

Differs from the name-type (Prout, *Gen. Ins.*, fasc. 104, p. 94) in having the ground-colour grey, not fleshy-ochreous, the markings also less brightly ferruginous.

Sikkim, 8 ♂♂, 4 ♀♀, in coll. Tring Mus. Also in other collections.

2. *Ozola auranticeps* spec. nov.

♂, 41-44 mm. Head bright orange, the face and palpus mixed with red and blackish. Collar and front of thorax bright orange. Body otherwise dirty ochreous-whitish, mottled with dark grey; abdomen strongly elongate, anteriorly with slight ochreous dorsal belts.

Forewing elongate, shaped nearly as in *macariata* Walk. ♂, the apex appearing at first glance more falcate on account of a patch of white fringe from close to apex to the gibbosity at R²; colour and markings recalling those of *atrofasciata* Pagenst., but the ground-colour whiter, irroration coarser and less regularly distributed, markings rather more blackish; costal margin more heavily spotted and strigulated than in that species, the incomplete antemedian line thicker, more strongly bent in cell, discal dot larger, connected with costa by some dark shading, a pair of spots (sometimes confluent) behind the proximal part of M², dark border less smoothly bounded proximally, the ground-colour encroaching for some distance along costa and slightly near hindmargin.—*Hindwing* more heavily dotted and spotted than in *atrofasciata*, the ground-colour slightly projecting into the black border in the middle.

Underside the same.

Kalewara, Central Celebes, February 5, 1913 (Dr. Martin). 2 ♂♂ in coll. Tring Mus.

A very fine species.

3. *Celerena lerne amplimargo* subsp. nov.

Both wings with the black border considerably broadened, that of the forewing (except in undersized specimens) measuring 17-19 mm. at costa; the contained white bands broadened, usually very much broadened, sometimes showing some yellow shading in their proximal part.

S. and S.E. Dutch New Guinea: Oetakwa River district (Snow Mountains) and Ellanden River. Type ♂, near Oetakwa River, up to 3500 ft., October-December 1910 (A. S. Meek), in coll. Tring Mus.

The species was described from Dorei, and occurs in the typical form from Misol to Humboldt Bay.

4. *Celerena cana* Warr.

This species occurs in three well-defined races. The only example before me from Goodenough Island is a ♀ in rather poor condition, apparently intermediate between the Fergusson Island and the Biagi form; further material is needed before anything definite can be said of it.

C. cana cana Warr. In amplification of Warren's description (*Nov. Zool.* iii. 281), it is necessary to notice that the black spot proximally to midcosta is very small and narrow and ends in a point midway between SC and cell-fold, that the yellow fascia beyond the curved grey one is 2 to 3 mm. in width, sometimes broader anteriorly, that the ground-colour is more whitish in the posterior part of both wings from base to beyond middle, and that the marginal fascia of hindwing is narrow. The wing-expanse given by Warren must have been estimated, not measured; it is 56–58 mm., not 60 mm.

Fergusson Island.

C. cana nigrilinea subsp. nov., 58–62 mm. Costal spot of forewing larger, almost or quite reaching cell-fold, a black line on the curved grey fascia from costa to R³ or M¹; the yellow fascia beyond reduced to about 1 mm. width, or wanting; posterior part of both wings coloured as in *cana cana*; marginal fascia of hindwing less narrow.

Biagi, Mambare River, 5000 ft., January 1906 (A. S. Meek); Upper Aroa River, March and April 1903 (A. S. Meek); Aroa River, 4000–5000 ft., May 1905 (A. S. Meek). Type, Biagi, in coll. Tring Mus.

C. cana fulvastra subsp. nov. Smaller than the other races (48–53 mm.), rather deeper yellow, uniform, not becoming whitish at hindmargins; basal costal streak narrowed; black costal spot about as in *cana nigrilinea*, occasionally rather swollen; curved grey fascia slightly darkened but without defined black costal spot or line; yellow fascia beyond about as in *c. nigrilinea*; marginal fascia of hindwing as in *c. cana*.

Humboldt Bay, September–October 1892 (W. Doherty). 3 ♂♂, 4 ♀♀, in coll. Tring Mus.

SUBFAMILY HEMITHEINAE

5. *Archaeobalbis urapteraria eudicheres* subsp. nov.

♂, 50 mm. Smaller than *urapteraria urapteraria* Walk., from Borneo, and with the ♂ hindwing in general not quite so long and narrow. Upperside showing little difference, though with rather more black scales in the red shades distally to the postmedian. Both wings beneath with the proximal part clear bright orange as in *u. urapteraria*, a black band of 3 or 4 mm. width (narrowing anteriorly on forewing and posteriorly on hindwing) separating this from the reddish-distal area and throwing out some irregular black vein-streaks into the latter.

Mount Gede, W. Java, 4000 m., 1896 (H. Fruhstorfer). Type in coll. Tring Mus.

The ♀ has the black shades suffusing almost the entire distal area beneath.

The new form, or something extremely similar (perhaps further subdivisible when more and better material is available), occurs also on Nias, Penang and Bunguran, Natuna Islands, so that it would appear to be the phylogenetic "type," from which a specialised race (*u. urapteraria*) has arisen in the mountains of

N. Borneo. Perhaps *viridaria* Moore, from N. India, is another race of the same collective species, as it differs in little except the broader wings and duller, more black-mottled undersurface.

6. *Epipristis nelearia viridans* subsp. nov.

Both wings above more strongly and uniformly suffused with greenish than in the name-type, the black lines fine, not very intense, very regular, not intensified towards costal margin of forewing. Dark border beneath not very broad, smoothly margined, recalling *rufilunata* Warr. (*Nov. Zool.* x. 352), which is also an *Epipristis*.

Lower Aroa River, British New Guinea, November 1904—March 1905 (A. S. Meek). 2 ♀♀ in coll. Tring Mus.

7. *Pingasa lariaria manilensis* subsp. nov.

♀, 48 mm. Smaller than *lariaria lariaria* Walk., relatively rather broader winged, with stronger admixture of red scales; antemedian line of forewing less deeply dentate, postmedian of both wings with the teeth not quite so ample; underside with the yellow proximal shading somewhat restricted, the black distal border slightly less broad than in the name-type.

Philippines. Type (near Manila, J. Whitehead) in coll. Tring Mus.

Possibly a separate species. Just before going to press, I have seen a ♂ from Mindanao, in coll. Joicey, slightly smaller, but quite corresponding.

8. *Pingasa pseudoterpnaria gracilis* Prout

In describing this race I omitted to mention that the ♂ genitalia have been examined and agree with those of *pseudoterpnaria tephrosiaria*, which is undoubtedly conspecific with the Japanese name-type.

9. *Pingasa elutriata* spec. nov.

Much larger than *dispensata* Walk., from S. India (size of *chlora crenaria* Guen.), face with the black band of upper part narrowed, both wings with postmedian line less sharply black-marked on the teeth, underside with the submarginal band much paler, more brownish, on the forewing threadlike or almost obsolete from R^3 posteriorly, on the hindwing very narrow, generally of almost equal width throughout, occasionally almost interrupted between R^3 and M^1 .

Darjiling, type ♂ and others; Assam, 1 ♂; in coll. Tring Mus.

I at first regarded this as a subspecies of *dispensata*, but the genitalia appear very distinct—valvae larger and more deeply emarginate, etc.

10. *Pingasa blanda* (Pagenst.)

Pseudoterpna blanda Pagenst., *Zoologica* xii. (29), 151 (1900) (Bismarck Archipelago).

Pingasa acutangula Warr., *Nov. Zool.* x. 352 (1903) (New Guinea).

The above synonymy has been overlooked, specimens from the Bismarck Archipelago having apparently not reached this country. But Pagenstecher's description leaves no doubt of the identity, and I have before me a fine series of Warren's *acutangula* from Little Kei, most parts of New Guinea, Goodenough Island, and Rook Island, so that its range in the Papuan subregion is evidently

fairly extensive. From Rook Island, three of the examples belong to a very noteworthy aberration, *ab depleta* nov., with all the dark colour obsolete, replaced by very pale blue-grey. As the breast and forecoxa are more ochreous, the olivaceous dusting of both wings somewhat stronger, the cell-mark of the forewing perhaps slightly narrower than usual, and the postmedian line of the hindwing slightly more angled outward on M^2 than usual (forming a more regular and deeper inward curve between this vein and the abdominal margin), it is not inconceivable that the impression of a distinct species, which is produced at first glance, may not prove fallacious; yet the distinctions, apart from the coloration, are exceedingly slight and not quite constant.

11. *Pingasa ruginaria andamanica* subsp. nov.

Ground-colour as in the most deeply coloured aberrations of *ruginaria ruginaria*: distal area more deeply and uniformly rufous, the pale subterminal line more or less obliterated, only with traces remaining here and there, chiefly at the costal and hindmargins.

Andaman Islands. Type from Port Blair, in coll. L. B. Prout.

12. *Hypodoxa emiliaria aignanensis* subsp. nov.

♂ ♀. Nearest to *emiliaria purpurifera* Warr., from the Solomons, the ♂ above more suffused with blackish (in *e. purpurifera* more olivaceous), the ♀ with reddish, both sexes beneath with the cell-spot of the forewing somewhat reduced, that of the hindwing wanting, the black borders—at least that of the hindwing—slightly narrowed, not or scarcely angulated in the middle.

St. Aignan, Louisiades, September—November 1897 (A. S. Meek). Type in coll. Tring Mus.

13. *Dysphania pilosa gloriosa* subsp. nov.

♂, 110 mm. *Forewing* with the very large cell-spot preceded in cell by a moderately broad (7 mm.) white band, which continues more irregularly (usually narrowing) almost to hindmargin, its proximal edge more or less strongly and irregularly dentate; in addition, a very narrow, interrupted white edging distally to the cell-spot, its posterior extremity confluent with the white band, and remnants of a very narrow, strongly sinuous outer band, showing chiefly as a pair of lunulate spots between SC^5 and R^2 , a smaller, more distal spot or dot in front of R^3 and a slender streak from behind M^1 almost to hindmargin.—*Hindwing* with a corresponding white discal band, the orange submarginal band about as in average **females** of name-typical *pilosa*.

♀, 100–114 mm. *Forewing* with all the white markings considerably broader than in the ♂, the outer band only interrupted about M^1 , fleshy-tinted at posterior end; usually in addition some white spots near base.—*Hindwing* with the white and orange bands considerably widened.

Vella Lavella, Solomons, February—March 1906 (A. S. Meek). 4 ♂♂, 5 ♀♀, in coll. Tring Mus.

As the ground-colour is rather more blue (less purple) than in the other races, this may possibly be a separate species, but it is in large measure connected with the name-type by the ♀ of subsp. *flavicorpus* Warr. from Choiseul, the ♂ of which

differs little from the name-type. *D. regnatrix* Warr., from Kulambangra, and *imperatrix* Warr., from Isabel, each unfortunately founded on a unique ♀, are also evidently races, if not aberrations, of this variable species.

14. *Dysphania minervaria latigrisea* subsp. nov.

♀, 72 mm. Smaller than name-typical *minervaria* Guen. from Burma.—*Forewing* without yellow patch on hindmargin, merely with a few yellow scales proximally and distally to the postmedian band.—*Hindwing* anteriorly grey (concolorous with forewing), this shade reaching abdominal margin at base, then posteriorly limited by M as far as the discal spot, by R² to the postmedian band, and by SC² to the marginal spots, containing between postmedian and marginal a small yellow spot.

Penang, December 1901 (Curtis). Type in coll. Tring Mus.

15. *Dysphania militaris alloides* subsp. nov.

♂ ♀, 66–70 mm. Considerably smaller than *militaris militaris* L., the yellow colour less bright, the black markings mostly considerably broadened. In detail, the principal distinctions are as follows :

Thorax and abdomen with the transverse bands on an average stronger.—*Forewing* with all the markings in proximal half broad, confluent at their ends, more recalling those of *subrepleta* Walk., but still thicker, the outer ones slightly less oblique, that from the costa still showing indications of the knobbed formation behind the base of M² which is characteristic of *militaris* ; discal spot on an average still more produced posteriorly, sometimes meeting the marginal band at R² and thus dividing the white spots of the radial cells, which in this case are much reduced ; outer band of white spots near tornus (from M² almost to hindmargin) narrowed into a very elongate S.—*Hindwing* with the discal spot and inner-marginal spot confluent as in *subrepleta* ; abdominal margin more shaded with black than in either of the allies.

Andaman Islands : Port Blair, in coll. Tring Mus. (including type) and coll. L. B. Prout.

Although Rev. C. R. N. Burrows has examined the genitalia and considers it a form of *militaris*, I am more inclined to look upon this as a good species.

16. *Dysphania subrepleta nias* subsp. nov.

Ground-colour paler than in *subrepleta subrepleta*, from Sumatra and Borneo—in that race bright orange, in *s. nias* cadmium yellow or paler.

Nias, a very long series in coll. Tring Mus.

17. *Dysphania subrepleta semifracta* subsp. nov.

♂. Ground-colour at least as pale yellow as in *subrepleta excubitor* Moore.—*Forewing* with the black proximal markings narrower than in average *s. subrepleta*, but less reduced than in the more extreme forms of *s. excubitor*.—*Hindwing* with the abdominal-marginal black mark reduced, not confluent with the discal spot ; postmedian band narrow, about as in *s. excubitor*.

Hainan : Mt. Wuchi, May 1903 (type in coll. Tring Mus.) ; Youboi, June 1904 (in coll. Tring Mus.) ; Hoihow, 1915 (C. T. Bowring ; in coll. L. B. Prout).

Nearest some forms of *D. subrepleta excubitor* ab. *sodalis* Moore, in which, however, the abdominal-marginal band is confluent with the cell-spot.

18. *Agathia lycaenaria* (Koll.)

This species shows considerable geographical variation, to which attention has not hitherto been called. The name-type, inhabiting North India (and from which I do not at present separate the forms from the Malay Peninsula and Hong Kong, Hainan, etc., though I believe that better material will reveal the existence of two further races), is excellently figured by Herrich-Schaeffer, *Samml. Aussereur-Schmett.* i., fig. 339, under the synonym of *albiangularia*, and has a ♀ with the markings much broader, not or scarcely interrupted. Guenée's figure (*Spec. Gén. Léop.* ix. t. 3, f. 12), on a Masuri ♀, but probably defective, shows ♂ coloration, the postmedian band complete but narrow. The following subspecies are to be differentiated:

A. lycaenaria impar subsp. nov. ♂: Forewing with postmedian band much narrower, the mark at R^3-M^1 reduced to a small lunule, that of hindmargin close to tornus or wanting. ♀: Markings broader than in the name-type.

S. India: Belgaum, Travancore, etc. Type (Belgaum, August 1895) in coll. Tring Mus.

A. lycaenaria luzonensis subsp. nov. ♂♀: Markings in both sexes broken into spots.

Near Manila (J. Whitehead). Type in coll. Tring Mus.

I only know two examples, but according to Semper (*Schmett. Philipp.* ii. 638) this form is constant on the Philippines.

A. lycaenaria par subsp. nov. ♂, 33-34 mm.; ♀, 37-38 mm. Sexes alike, the ♂ having more broadly discolorous costal margin of forewing and more reddish markings than the ♀ of the other forms. Forewing with postmedian band broken into spots, about as in *l. luzonensis* but rather more oblique outward in anterior half, the spot at R^3-M^1 (which is intermediate in size between those of *l. lycaenaria* and *l. impar*), closely approaching termen posteriorly, succeeded by an additional red dot in front of M^2 ; hindmarginal spot near tornus. Hindwing with the tail at R^3 scarcely so strong as in the other forms, midterminal blotch more pyramidal than in the other forms, expanding gradually to termen; abdominal-marginal spot nearer tornus than in the other forms.

Palos Bay, Celebes, August-September 1896 (W. Doherty); Towaya, N. of the Bay, a pair, including type; Dongala, S. of the Bay, a pair; all in coll. Tring Mus.

Possibly a distinct species.

A. lycaenaria hedia subsp. nov. ♂: Forewing nearly as in *l. impar*, the postmedian spot at R^3-M^1 rarely quite so small, that at hindmargin (except in one or two Sunda Island specimens) less abnormally placed; triangular terminal marks at R^2 and R^3 reduced, the anterior one almost or quite obsolete. Hindwing about as in *l. impar*. ♀: Near that of *l. luzonensis*, or intermediate towards *l. lycaenaria*, the postmedian of both wings somewhat more nearly approaching the termen in middle, the midterminal spot of hindwing consequently reduced.

Queensland: Townsville (F. P. Dodd), a series in coll. Tring Mus. I also refer here, at least provisionally, the few specimens I have seen from the Sunda Islands (Java, Sumba, Alor, Timor), though the females, at least on the more westerly islands, deviate less from *l. lycaenaria*.

19. *Agathia albicurvatura* spec. nov.

♂ ♀, 29–31 mm. Face rose-pink, mixed with grey, lower part whitish. Palpus in ♂ with third joint very short, in ♀ moderately elongate; mostly rosy, beneath whitish. Vertex narrowly rosy; occiput green. Thorax above green in front and with a large green oval patch posteriorly, beneath whitish; abdomen above rosy, with a slight green admixture and some dark grey irroration, beneath whitish. Hindtibia in ♂ very strongly dilated, with dense light-brown hair-pencil and short terminal process; hindtarsus in ♂ short.

Forewing without developed flap of scales from M over cell beneath; bright green; costal edge broadly (at base narrowly) rose-pink, with a lilac tinge and with sparse dark irroration; markings similarly coloured, in the ♂ rather more lilac than in the ♀; basal patch scarcely narrowed in meeting the costal streak; antemedian band very narrow, in ♂ twice interrupted (or indicated only by a few white scales), in ♀ twice constricted, scarcely bent outward in middle; postmedian band accompanied proximally by an almost regularly curved white line from two-thirds costa to hindmargin 1 mm. or less from tornus; the band itself very narrow, constricted (in ♂ interrupted) about R², meeting the narrow terminal band just behind R³; fringe pale brown, palest proximally, with vague dark dividing-line accentuated by darker spots opposite the veins, those at apex and R³ strongest, but not as sharp as in many species.—*Hindwing* shaped nearly as in the typical group, but with the tail at R³ relatively somewhat shorter, that at M¹ well appreciable, the discrepancy between the two therefore less sharp; postmedian band narrow, dentate inward before and behind R³, accompanied proximally by a conspicuous white line; the green anterior patch between this and terminal line relatively long and narrow; blackish terminal mark in the tail triangular, the accompanying white mark rather narrow; extreme abdominal margin white, becoming mixed with rosy before middle, the rosy colour widening very gradually and showing (especially in the ♀) a hook-shaped projection 3 mm. before tornus.

Underside pale, with the antemedian weakened, the other markings darkened.

Dougala, S. of Palos Bay, Celebes, August–September 1896 (W. Doherty). Type in coll. Tring Mus.

20. *Agathia asterias* Meyr.

This species appears to be geographically as well as individually variable. It was described from the ♀ and always shows rather strong sexual dimorphism, the ♂♂ having the markings much darker, in most forms narrower. It differs from *distributa* T. P. Luc. in the more extended markings, the subapical band of the forewing not or scarcely interrupted, running to termen, whereas in *distributa* it is much interrupted and runs to hindmargin well proximally to tornus; in the reddened abdominal margin of hindwing and the well-developed white spot before the tail; and finally in the abdomen, which in the ♂ is strongly darkened dorsally, especially in a sort of irregular double line bordering the slight crests, in the ♀ more mottled, whereas in both sexes of *distributa* it is green, with a quadrate blackish spot on first tergite and a few pairs of small dots posteriorly.

A. asterias asterias, 32–38 mm., very rarely attaining the latter measurement. Bands on an average narrow, especially in the ♂, rarely very strongly swollen into spots.

Queensland.

A. asterias diversilinea Warr. Generally much larger (42–48 mm.), but very variable in size. ♂ otherwise little different from *a. asterias*, ♀ with the red markings much broader, alternately swollen and constricted.

British New Guinea and its eastern satellite islands. The form from the Snow Mountains, Dutch New Guinea, is intermediate between this and the following.

A. asterias ampla Prout. As large as the preceding or still larger; markings still further broadened, especially in the ♂, the subapical and marginal bands of the forewing connected or almost connected along R^3 , enclosing a large round green spot between this and M^1 .

Arfak Mountains, Dutch New Guinea.

A. asterias irregularis subsp. nov. 39–42 mm. Both sexes with abdomen partly green, the medio-dorsal stripe remaining reddish, with the double black (in ♀ redder) line sometimes a little interrupted; median band moderately broad, its swellings strong; subapical band of forewing narrowed to a thread between R^2 and R^3 , then suddenly widened into a blotch which is broadly confluent with the marginal band; marginal band quite narrow, irregular; hindwing with the red or purple shade on abdominal margin narrowed except near tornus, where it is swollen into a conspicuous spot, marginal band somewhat correspondingly formed to that of forewing.

Key Islands (H. Kühn). Both sexes in coll. Tring Mus.

21. *Agathia eromena* spec. nov.

♂, 42–44 mm. Closely similar to certain forms of *asterias*, of which it may even prove a local race, in spite of the geographical separation. Distinguished as follows:

Abdomen above predominantly reddish-brown, with the crests better developed, blackish.—*Forewing* with costal margin purplish to nearer base than in most *asterias*, median band very narrow, sometimes excessively narrow and broken, rather markedly bent outward in middle; subapical and marginal bands, on the other hand, almost as well developed as in *asterias ampla*, less mixed with blackish proximally, not separated from the ground-colour by any yellow band; the enclosed green subapical patch not or barely reaching R^3 .—*Hindwing* with submarginal (marginal) band rather broad, its proximal edge almost even, rather regularly and markedly dentate, not edged with yellow; the white spot before tail narrow to very narrow.—Underside strongly suffused with buff.

S. Celebes, August–September 1891 (W. Doherty). Type in coll. Tring Mus.

A. eromena cara subsp. nov., 36 mm., is still nearer to *asterias*, in that the borders are yellow-edged proximally, the green subapical patch of forewing crosses R^3 , and the white spot at tail of hindwing is less narrowed.

Philippines. Type, Palawan, August–September 1894, in coll. Tring Mus.

This is probably the *carissima* of Semper (*Schmett. Philipp.* ii. 638), nec Butl.; the occurrence of true *carissima* on the Philippines seems unlikely.

22. *Agathia furtiva* spec. nov.

♂, 32 mm. Exceedingly like some forms of *asterias* Meyr. Palpus with third joint still more minute, almost entirely concealed; very little marked with red or fuscous. Structure otherwise similar. Abdomen not blackened on mid-dorsum, not showing the **paired** black markings which are usual in *asterias*.

Forewing with the general coloration and pattern of dark-marked, narrow-banded ♂ *asterias*; basal patch broadening rather than narrowing anteriorly; median band forming three small triangular markings, slightly connected by a pale line; the oblique subapical band strongly interrupted at R², its proximal edging entirely or predominantly white (in *asterias* bright yellow); marginal band exceedingly narrow but almost even throughout, only narrowing a little towards the apical spot, which is very small—the swelling into spots at R² and R³ which is indicated even in the narrowest-bordered *asterias* altogether wanting.—*Hindwing* also nearly as in *asterias*, but with the red or purple markings on distal part of abdominal margin much reduced, except for a conspicuous triangular or somewhat hook-shaped projection 3–4 mm. from tornus, from the apex of which a pale, dark-spotted line is traceable to the distal border just in front of fold; proximal edging of submarginal band white or whitish.

♀, 32–35 mm. Quite similar to the ♂ except that the markings are redder. Palpus not quite so long as in *asterias* ♀.

Dammer Island, December 1898, including the type; Larat, February 1901 (H. Kühn); a short series in coll. Tring Mus. Virtually the same race occurs on Java, though the females are there larger and with the markings not quite so narrow. Material must be awaited from the intervening islands.

23. *Agathia laetata isogyna* subsp. nov.

♂ ♀. Distal borders deeper purple than in even the ♂ of *l. laetata* (from S. India* and Ceylon) and alike in both sexes, its proximal edge on forewing less curved or bent in middle.

Assam to Malay Peninsula. The type ♂, from Cherrapunji, in coll. Tring Mus.

The ground-colour may be of an intenser green, but I have seen few *l. laetata* in such beautiful condition. This race bears a remarkable resemblance to the ♂ of *prasinaspis* Meyr., except in its smaller size and the different shape of the green subapical spot of forewing, which in *prasinaspis* is ovoid, while in *l. isogyna* its distal edge is quite flat, except for the minute, scarcely noticeable indentations between the veins. *prasinaspis* shows strong sexual dimorphism.

24. *Agathia hilarata hainanensis* subsp. nov.

♂, 32–34 mm. On an average smaller than *h. hilarata* Guen., the terminal and subapical bands narrowed, the latter threadlike or almost interrupted between R² and R³ of forewing; antemedian line of forewing also narrowed, straighter, only very faintly angled at M and scarcely becoming more oblique outward at hindmargin. In addition the markings appear somewhat more variegated, their ground-colour rather lighter reddish, with partial dark proximal edging and dark spots in places. Thorax and base of abdomen above predominantly green.

♀ not essentially different from that of *h. hilarata*; markings perhaps lighter, brighter reddish; thorax and abdomen about as in ♂.

Hainan: Mt. Wuchi, May 1903, type ♂ and a ♀; Wuteryong, May 1903, 1 ♀; Cheng-Mai, July 1902, August 1904, 2 ♂♂; Taipinshi, June 1906, 1 ♂; all in coll. Tring Mus.

* Fabricius only gives "East Indies" as locality, but the probabilities support the determinations of Moore and Aurivillius, the latter (*Ent. Tid.* xviii. 165) made on an examination of the type.

25. *Agathia hilarata latilimes* subsp. nov.

Rather smaller than *h. hilarata*, the antemedian band of forewing not quite so oblique posteriorly, the border of both wings broader—at least 1 mm. wide at the narrowest point on each side of the subapical green patch of the forewing and at hindmargin, at least 2 mm. wide proximally to the green patch of hindwing—on forewing not containing a white dot between R^3 and M^1 .

W. Java. Type in coll. Tring. Mus.

26. *Agathia codina australis* subsp. nov.

On an average slightly smaller than *c. codina*, from the Khasis, but showing especially the following differences :

Both wings with the dark parts more purplish, in the distal area beneath broadened.—*Forewing* with the green apical patch reduced.—*Hindwing* with the white costal triangle larger, tinged with violaceous, the postmedian line much more acutely angled at R^3 .

Penang, November 1896 (Curtis), type and others in coll. Tring Mus. Also from Kina Balu, N. Borneo.

27. *Alloeopage cinerea* (Warr.)

This species, except for the very strong sexual dimorphism, shows little variation on the mainland of New Guinea, but it is very interesting on some outlying islands. The forms at present known may be separated as follows.

A. cinerea cinerea. This was described (*Nov. Zool.* iii. 284) from a ♀ from Fergusson Island, and the ♂ has not yet been made known. It differs from the ♂ of subsp. *velata* in its larger size (almost or quite equalling that of the ♀ name-type), much larger discal mark of forewing, more distinct cell-dot of hindwing, thicker and more distinct lines and frequently confluent dark blotches at the costal end of the postmedian and subterminal of forewing. Often also the postmedian is marked with black between SC^5 and R^3 , almost as in *Helicopage hirundinalis* Warr.

Dutch New Guinea: Ninay Valley, Central Arfak Mountains; Upper Setekwa River and near Oetakwa River, Snow Mountains. German New Guinea: Stephansort. British New Guinea: Biagi, Mambare River; Holnicote Bay to Owen Stanley Range; Kumusi River; Upper Aroa River. Fergusson Island. North Queensland: Kuranda and Geraldton, near Cairns.

A. cinerea virescens subsp. nov. ♂: size of name-typical form.—*Forewing* with first line only represented by three conspicuous dots, one at each margin and a large round one in cell; costal blotches obsolete; subterminal line broken into spots.—*Hindwing* with the lines of distal half thickened posteriorly, but not united into a blotch. ♀: almost concolorous with ♂, the cloudings olivaceous, not brownish or reddish.*

Rook Island, August 1913 (A. S. Meek). Type in coll. Tring Mus.

A. cinerea velata (= *Helicopage velata* Warr., *Nov. Zool.* iv. 390). Besides Warren's type, three others (2 ♂♂, 1 ♀) from Woodlark and a single ♀ from Rossel Island are in the Tring Museum; already discussed by Warren, *Nov. Zool.* vi. 330. Smaller than the two preceding.

A. cinerea euri subsp. nov. Similar to the preceding, agreeing in size, but differing in that the ♂ lacks the large grey blotch of the hindwing and has less

* Warren describes the markings of the name-type partly as "olive-grey," but this is misleading.

distinct thickenings at the costal end of the postmedian and subterminal lines of the forewing. The ♀ is rather variable, sometimes nearly like that of *c. velata*, but on the whole more sharply marked with black postmedian dots, the straight blackish line from apex towards tornus sometimes thickened, occasionally ending in a tornal blotch.

Sud-Est Island, April 1898 (A. S. Meek), 4 ♂♂, 5 ♀♀ in coll. Tring Museum.

Warren, *Nov. Zool.* vi. 330, in discussing (without naming) this form, refers to it one from Suer, Mefor. This reference, I find, is based on a single small ♂, somewhat discoloured; I believe it represents another distinct race, similar to *c. euri*, but not yet available for classification.

28. *Dooabia lunifera plana* subsp. nov.

♂. Differs from the name-typical *lunifera* Moore, from Assam, in having the antemedian line almost obsolete, indicated by weak dots on the veins, the postmedian of both wings also weakened, chiefly expressed on the veins, the posterior terminal blotch of forewing and the terminal markings of hindwing wanting.

Kina Balu, N. Borneo (J. Waterstradt). Type in coll. Tring Mus.

The forewing is less elbowed at R³, the termen of hindwing less strongly waved than in most examples of *l. lunifera*, but there is a slight variability observable in the shape in the latter race.

29. *Ornithospila avicularia insularis* subsp. nov.

♂ ♀, 37–41 mm. Besides the markedly smaller size, this differs from the Indian form as follows: Ground-colour slightly deeper green; terminal line rather stronger; fringe deeper brown-red, approaching that of *cineta* Walk.; costal edge of forewing more strongly dark-dotted.

Sumatra: Upper Palembang district (Voleker), a series in coll. Tring Mus., including the type. Also one from Kuching, Borneo.

This is clearly the insect which Snellen, in Veth's *Midden-Sumatra* (iv. (8) p. 53), takes to be the ♂ of his *circumflexaria*, founded and figured on a single ♀ from Silago, Central Sumatra; the last-mentioned, a synonym of *submonstrans* Walk., is certainly his type.

30. *Ornithospila bipunctata* spec. nov.

♂ ♀, 42–46 mm. Distinguished from *submonstrans* Walk., with which it has hitherto been confounded, as follows:

Palpus more infuscated, without appreciable green stripe along second joint. Antenna of ♂ with the pectinations not continuing quite so far distally. Both wings with termen smoother, apex of forewing less pointed, fringe not or only very feebly dark-spotted, lines less crenulate.—*Forewing* with costal edge scarcely dotted with reddish; lines generally nearer together; discal dot smaller.—*Hindwing* with a red discal dot in place of the circumflex mark; beneath generally with a more definite green distal border.

Bunguran, Natuna Islands, October 7, 1894 (Hose), type in coll. Tring Mus. Also from Penang, Selangor, Borneo, and Celebes. Here belongs Walker's (Oxford Museum) original ♂ "*submonstrans*" from Borneo, but his type (the ♀ in coll. Brit. Mus., the only specimen registered in his *List Lep. Ins.*; cfr. Swinh., *Cat. Lep. Het. Oxf. Mus.* ii. 403) is of the other species.

31. *Ornithospila submonstrans moluccensis* subsp. nov.

Costal margin of forewing as in *O. bipunctata* Prout, the lines also approximated, as in that species, and rather more weakly crenulate than in *s. submonstrans*; spots on fringe somewhat intermediate between those of the two forms named.

Laiwui, Obi, September 1897 (W. Doherty), type in coll. Tring Mus. Also others from this locality and Obi Major (including 1 ♀) and from Batjan.

The superficial approach of this race to *O. bipunctata* does not at all extend to the discal marks, which are on an average even stronger than in *s. submonstrans*.

32. *Ornithospila odontogramma* spec. nov.

♂ ♀, 40–48 mm. Face green. First and second joints of palpus whitish, with a red-brown stripe on upper part of outer side, also at tip of second joint; third joint blackish fuscous. A narrow white fillet between antennae. Antennal pectinations of ♂ relatively long, continuing farther distally than in *avicularia*. Thorax and abdomen green, beneath whitish.

Forewing bright apple-green, at least as vivid as in *avicularia*; costal edge whitish, strongly dotted and spotted with pinkish grey; lines rather distinct, dark green, the pale edging on the reverse sides very weak; postmedian farther removed from antemedian than in the other species, especially in anterior part, where it bulges outward, more deeply dentate than in any other of the genus; cell-dot rather large, red, mixed with blackish; the smaller mark on DC² also present (otherwise only occurring in *avicularia*); terminal line developed; fringe pinkish white or very pale pink, darkened at the vein-ends, proximally somewhat whiter between them. — *Hindwing* without first line, the angulated cell-mark strong, the rest as on forewing.

Forewing beneath paler, at hindmargin whitish; cell-mark strong; lines feebly indicated, not dentate; terminal line and fringe nearly as above. Hindwing beneath dirty yellowish green, at termen greener; cell-mark and green postmedian line indicated; terminal line and fringe nearly as above.

Moluccas: Obi Major (Waterstradt), type and others; Batjan, March 1892 (W. Doherty; also from Waterstradt); Amboina, February and August 1892 (W. Doherty). A series in coll. Tring Mus. Also a single worn ♂ from Kayeli, Buru, March 1897 (W. Doherty).

Differs from *submonstrans moluccensis* in the absence of green band on palpus, presence of red mark on DC² of forewing, much more dentate lines, etc.

33. *Ornithospila viridimargo* spec. nov.

♀, 41 mm. Face green. First joint of palpus white; second joint green, mixed with white beneath; third joint long, dark reddish fuscous. Vertex green, narrowly white between the antennae. Thorax and abdomen green, partly white beneath.

Forewing with apex not acute, termen almost smooth, very gently curved; bright green, not quite so yellowish as in the other species; costal edge, except at extreme base, very narrowly whitish with green and red-brown dots; lines vague, dull reddish; antemedian almost obsolete; postmedian deeply lunulate-dentate, about 4 mm. from termen at radials, receding (but almost obsolete) anteriorly, very gently incurved between R³ and SM²; discal dot rather small, dull reddish, mixed

with black; red terminal line almost obsolete, invisible to the naked eye, discernible with the lens as a series of exceedingly fine, well separated interneural marks; fringe green, at tips whitish grey.—*Hindwing* with termen scarcely prominent at R^3 ; postmedian and terminal lines and fringe as on forewing; the characteristic cell-mark of the genus present, thickened on DC^2 , very slender on anterior half of DC^3 , enlarged into a black-mixed dot at cell-fold, here terminating.

Underside paler green.—*Forewing* with costal edge nearly as above; cell-dot present; very shadowy indications of a postmedian line.—*Hindwing* almost unmarked; very slender traces of the cell-mark.

Type in coll. Tring Mus., unfortunately without any indication of its source.

Very distinct in the reddish postmedian line, obsolescence of red terminal line, and in the green fringe.

34. *Anisozyga albifimbria viridimargo* subsp. nov.

Differs from *a. albifimbria* Warr. (*Nov. Zool.* x. 262), the form from Bougainville, Treasury, Choiseul, Gizo, Isabel, Florida and S. Christoval Islands, as follows:

♂. Scarcely distinguishable above except that the costal margin of forewing is less mixed with white; subterminal white spots small. Submarginal band of forewing beneath broadened in anterior part and extending faintly to the hindmargin, continued (narrow but distinct) on anterior half of hindwing.

♀. Termen not white, except for some quite small lunules proximally to some of the green ones (especially before and behind SC^5 of the forewing); the green marginal lunules larger; fringe less pure white. Both wings beneath with complete, rather broad brown submarginal band.

Vella Lavella, February—March 1908 (A. S. Meek). Type in coll. Tring Mus.

The antemedian line is on an average less angulated on submedian fold than in *a. albifimbria*, but this is not constant.

35. *Anisozyga subliturata subobsoleta* subsp. nov.

♂♀. Both wings beneath with less suffusion in proximal half; forewing with first line entirely wanting; hindwing beneath with first line (or band) entirely wanting in ♂, slender and faint in ♀.

Ninay Valley, Central Arfak Mountains, Dutch New Guinea. Type in coll. Tring Mus.

36. *Anisozyga iridescens longiuscula* subsp. nov.

Larger than *i. iridescens* Warr. (29–35 mm., as against 26–30), relatively slightly longer-winged; ♂ otherwise scarcely distinguishable, the terminal line, however, more mixed with fuscous. ♀ as described by me in *Nov. Zool.* xx. 407.

Mount Goliath, Central Dutch New Guinea. Type (♂) in coll. Tring Mus.

I find that *innuba* Warr. (*Nov. Zool.* xiv. 128), with the terminal markings redder and extending in a breadth of almost 1 mm. to tornus on both wings, is the ♀ to *i. iridescens* (Biagi); *reducta* Warr. (*Nov. Zool.* xix. 70), from Ninay Valley, Central Arfak Mountains, is another race of the same species, the ♀ with the border shaped almost as in *i. iridescens* = *innuba*, but coloured as in *i. longiuscula*.

37. *Chloromachia semialba viridior* subsp. nov.

Forewing above and beneath with the brown clouding more restricted, in its broadest part scarcely reaching behind the median vein; postmedian line merely waved, almost parallel with termen throughout, entirely lacking the strong central projection of *s. semialba*. Both wings beneath with the distal brown spots less developed.

Ceylon. Type ♂ in coll. Tring Mus. Paratypes, both sexes, in coll. Brit. Mus.

38. *Uliocnemis elegans unidentata* subsp. nov.

♂ ♀. *Forewing* with the postmedian line slightly more dentate in anterior half; anal blotch on an average rather larger; the minute terminal dots obsolescent above and beneath.—*Hindwing* with apical blotch on an average broader, especially in the ♂; postmedian line less straight, somewhat incurved between R² and M², **markedly dentate outward on M²**.

Rook Island, July 1913 (A. S. Meek). Type in coll. Tring Mus.

To judge from a single example in my collection, as well as the geographical probabilities, this is also the form from the Bismarck Archipelago (*cassidara* Pagenst., nec Guen.).

39. *Spaniocentra intermediata* spec. nov.

♂, 34 mm. Face pale red. Palpus red above, white beneath. Vertex white; occiput narrowly red. Antennal shaft white proximally, reddish distally; pectinations twice as long as diameter of shaft. Thorax above green. Abdomen above red, heavily dotted with black, second and third tergites each with a pair of oval white spots, as in the allies. Hindtibia strongly dilated.

Forewing with termen bent at R³, but not nearly so strongly as in *undiferata* Walk., the anterior part being rather more oblique, the posterior decidedly less so; green; the costal margin yellowish, irrorated with red and black, the extreme costal edge snow-white; lines almost obsolete, with the faintest indication in paler green; cell-dot red, mixed with black; tornal blotch very dark (red, almost entirely overlaid with black and olivaceous, as in *pannosa lyra* Swinh.), reaching, but not or barely crossing M¹, at hindmargin narrowed almost to a point; terminal line red, mixed with violaceous and slightly irrorated with black, expanding a little at the veins and apex, but much less than in *undiferata*; fringe yellowish, tinged in places with red and with vague dark spots or cloudings opposite the veins.—*Hindwing* shaped nearly as in *pannosa* Moore, termen very slightly more convex; a distinct dot on DC³, corresponding to that of forewing; the dentate postmedian line faintly indicated in whitish green; terminal line nearly as on forewing, swelling slightly more from apex to R¹, at R³ and at M¹; fringe as on forewing.

Both wings beneath whitish green; forewing with the tornal blotch rather less sharp than above, almost broken into two, leaving traces of the ground-colour just behind M² and thence along termen nearly to tornus, costal margin somewhat yellowish; hindwing unmarked, or with very small fuscous terminal spot behind SC²; fringes yellowish.

S. Celebes, August—September 1891 (W. Doherty). Type in coll. Tring Mus.

In spite of the very different shape, this appears to have been mixed with *undiferata* Walk., from the same locality; except for the difference in the hindtibia, it might almost be taken for a subspecies of *pannosa* Moore.

40. *Comibaena mariae syndyas* subsp. nov.

♂ ♀. Sexes alike, the ternal blotch of forewing and apical blotch of hindwing chocolate, even more uniform than in the **female** of *mariae mariae* T. P. Luc., from Queensland, recalling the darkest aberrations of *integranta* Hmps. The ternal blotch of forewing is generally rather smaller, only just crossing M¹, whereas in *m. mariae* it usually reaches R³. Hindwing with discal dot less sharp, almost or entirely obsolete beneath.

New Guinea: Ninay Valley, Central Arfak Mountains; near Oetakwa River, Snow Mountains (including the type, coll. Tring Mus.); Mount Goliath; Kumusi River, N.E. British New Guinea; Goodenough Island.

As **ab.** (?) **aporia** nov. I describe a ♂ form in which the centre of the blotches is paler, their border dark, nearly as in *m. mariae*, from which, however, the new form differs in having the blotch of forewing larger, reaching R³, the dark part of both blotches broader. Ninay Valley, 3500 ft., November 1908—January 1909, 4 ♂♂ in coll. Tring Mus. taken together with 4 typical ♂♂ of *m. syndyas*. Possibly a separate species, but I can find no structural difference, and the **colour** variation is only such as is well known in *integranta* Hmps.

41. *Chrysochloroma meeki malthaca* subsp. nov.

♂, 36–38 mm. Considerably smaller than *meeki meeki*, from the Trobriand Islands, and of a lighter, more yellowish shade, approaching apple-green.

St. Aignan, Louisiades, December 1897 (A. S. Meek). Type in coll. Tring Mus.

The ♀ of *m. malthaca* has a whitish underside, as in *megaloptera* Lower, and indeed altogether resembles that species except in the more crenulate margin and in the much more bent line of the hindwing. The ♀ of *m. meeki* has not been received.

42. *Gelasma subannulata* spec. nov.

♂, 38 mm. Face dull dark reddish. Palpus one-and-a-quarter times diameter of eye, with third joint very short; above dull dark reddish, mixed with black; beneath whitish. Antennal pectinations rather long, continuing to about the thirty-seventh joint. Thorax and abdomen concolorous with wings. Hindtibia strongly dilated, the spurs very short.

Forewing with termen slightly straighter and more oblique than in *glaucaria* Walk.; SC¹ free; very pale, glossy yellowish green (perhaps a little discoloured in relaxing), the costal edge narrowly yellow, with a few red-brown specks; lines marked by slightly deeper green shading and by having their reverse edges whitish, as in *glaucaria*; antemedian 4 mm. from base, dentate inward on M and SM², lunulate outward between and in cell; cell-mark large, slightly pale-centred, suggesting a long, narrow ocellus; postmedian line lunulate-dentate, 4–5 mm. from termen, nearly parallel therewith, slightly receding at costa and with a deeper lunule between M and SM²; terminal line very slender, interrupted, blackish fuscous; fringe with small but sharp blackish dots opposite the veins.—*Hindwing* rather elongate at abdominal margin, rather squared at apex, tail at R³ strong (shape of section *Thalerura*, though not very extreme); antemedian line wanting, postmedian as on forewing, terminal slightly stronger; cell-spot elongate, but not ocellated; fringe as on forewing.

Underside white, with costal edge of forewing yellow; fringes yellow, with blackish dots.

Tondano, N. Celebes, September—October 1899. Type in coll. Tring Mus.

43. *Gelasma hemitheoides* spec. nov.

♂, 28–31 mm. Face and palpus dirty brown, the latter narrowly whitish beneath. Vertex narrowly white. Occiput, thorax and abdomen concolorous with wings. Antennal pectinations long and lax. Hindtibia not very strongly dilated, the hair-pencil present, but not very thick.

Forewing olive; costal edge ochreous, with dark dots or strigulae; lines white; antemedian from before one-fourth costa, oblique outward, strongly curved in cell, rather deeply angled inward on M, excurved at fold, somewhat incurved on SM²; postmedian fine and rather weak towards costa, otherwise strong, deeply lunulate-dentate, the deepest and thickest lunule at the fold; discal mark elongate, nearly obsolete; termen with small whitish dots at vein-ends; a fine whitish line at base of fringe, which is otherwise dark grey, darker proximally than distally.—*Hindwing* quadrate, with abdominal margin long, tail at R³ strong; discal mark sometimes rather stronger than on forewing; postmedian line reproduced, projecting outward at R³—M¹; termen and fringe as on forewing.

Underside white, forewing anteriorly slightly greyish and with costal edge nearly as above; fringes nearly as above.

Khasis: Shillong, etc. Type in coll. Tring Mus.

Has been confused with *griseoviridis* Warr. Wings longer, with longer tail to hindwing (shape of the *Hemithea insularia* group), colour less dark grey, lines much more deeply lunulate-dentate.

44. *Gelasma mutatilea* spec. nov.

♂, 32 mm. Similar to *thetydaria* Guen. Palpus rather longer, one-and-a-half times diameter of eye, as against one-and-a-quarter. Pectinations of antenna not quite so long, ceasing earlier (little beyond middle of shaft). Face darker. Wings narrower, hindwing with apex squarer, tail longer (about shape of preceding species).—*Forewing* with costal edge more strongly dark-dotted, the green lines (bands) not quite so thick, antemedian more curved inward anteriorly, postmedian receding from termen anteriorly (in *thetydaria* strongly **approaching** it), fringe darker (olive-green in proximal half).—*Hindwing* with DC less oblique outward.

Khasis. Type in coll. Tring Mus.

45. *Thalassodes tanymelea* spec. nov.

♂ ♀, 43–45 mm. Excessively like *dorsipunctata* Warr., differing as follows:

Palpus in both sexes longer, third joint in ♂ almost, in ♀ fully as long as second. Antennal pectinations in ♂ longer. Hindtibial process in ♂ longer, extending somewhat beyond middle of first tarsal joint.—*Forewing* with postmedian line still weaker, appearing less dentate, through the entire suppression of the white dashes on the veins.—*Hindwing* rather more weakly angled at R³, postmedian line as on forewing.

Rook Island, July 1913, 2 ♂♂, one being the type; August 1913, 2 ♀♀ (A. S. Meek). Type in coll. Tring Mus.

A pair of *dorsipunctata* Warr. occurred in the same locality in July.

46. *Thalassodes aptifimbria* spec. nov.

♂ ♀, 44–46 mm. Like *hypocrites* Prout, but without the white terminal dots and with the fringe green, unspotted, paler distally and with a fine whitish line at its base. Slightly bluer green, the characteristic white spots at hindmargin generally narrower.

Darjiling, a few examples. Type ♂ in coll. Tring Mus.

It is not likely that this is merely a local race of *hypocrites*. I know of no analogy for such a wide divergence in fringe coloration, and moreover I have before me a single example of *aptifimbria* from the Khasis, where otherwise *hypocrites* shows no variation.

47. *Thalassodes effata* spec. nov.

♂, 54 mm. Face bright green. Palpus less than one-and-a-half times as long as diameter of eye, third joint about half as long as second; green on outer side, whitish beneath. Vertex white; occiput green. Antenna white at base, otherwise yellow ochreous, somewhat more reddish beneath. Thorax green, partly whitish beneath; pectus strongly hairy. Abdomen above green, beneath whitish. Fore and middle legs partly reddish-brown above; hindfemur rather strongly hairy; hindtibia dilated, with strong ochreous hair-tuft and short terminal process.

Forewing with termen slightly curved anteriorly and close to tornus, straight or very slightly incurved between; deep pea-green, with costal edge narrowly pale ochreous and with slight blue-whitish strigulation; near base somewhat more mottled with blue-whitish, an indistinct postmedian band of the same from base of M^1 to hindmargin and still more faintly anteriorly to M^1 ; coarse and copious strigulae and dots at distal margin for a width of 3 or 4 mm. (narrowing to apex); fringe green, rather paler distally.—*Hindwing* with the angle at R^3 moderate; the whitish strigulation and mottling in basal and central areas stronger, except along abdominal margin and on the raised discocellulars, a rather broad green postmedian band consequently distinct, angulated about M^1 near the termen, becoming broader and more diffuse to abdominal margin and tornus.

Underside similar but much paler, costal margin of forewing more broadly whitish ochreous.

Batjan (Waterstradt). Type in coll. Tring Mus.

48. *Thalassodes acutipennis* spec. nov.

♂, 34 mm. Face rather narrow, green. Palpus with third joint rather elongate; green, paler beneath. Vertex white. (Thorax and abdomen discoloured.) Hindtibia with hair-pencil and a rather short terminal process (length of terminal spurs).

Forewing with apex acute and slightly produced, termen rather strongly oblique, except close to apex almost straight; SC^1 free, R^1 long-stalked; yellowish green, more approaching the colour of *subviridis* Warr. than the normal *Thalassodes* colour; some whitish strigulation; traces of a diffuse whitish postmedian line or band, rather nearer to termen than in most of the species.—*Hindwing* with apex squared, angle at R^3 moderately strong, termen otherwise straight; traces of an angulated postmedian band, corresponding to that of forewing.

Underside apparently little paler, unmarked.

Ruk (Caroline Islands), June 1896. Type in coll. Tring Mus.

The unique type is unfortunately a good deal rubbed, but shape, colour, and structure will render it easy of recognition.

49. *Strepsichlora remissa* nom. nov.

Strepsichlora acutilunata ♀ Warr., *Nov. Zool.* xiv. 136 (1907) (nec ♂).

Although I am still unacquainted with the true ♀ of *acutilunata* and the ♂ of the present species, I have no hesitation in separating the two. The species of this genus show no sexual and little individual variation, and the costal and median markings, the dotted termen and fringe, etc., of *remissa* are absolutely distinctive; the abdomen has the white spot on second tergite enlarged, the others obsolescent, whereas *acutilunata* has a uniform row of small dots. The coincidence of the occurrence of the two species in the same locality, which misled Warren, is less remarkable when it is observed that the single ♀ (*remissa*) was taken in January—probably a straggler from an earlier brood—the series of ♂♂ (*acutilunata*) February to April.

It may be here remarked that *dissimilis* Warr. (*Nov. Zool.* xix. 73) is a rather more strongly marked race, if not indeed a synonym, of *acutilunata*.

50. *Oxychora dentilinea* (Warr.)

Oxychora dentilinea ♀ Warr., *Nov. Zool.* xix. 80 (1912) (nec ♂).

Warren described this species from the ♀ and added a brief reference to the ♂ which he believed to belong to it. This ♂, however, is a quite distinct species, exactly matched by a ♀ from the same locality **with strongly pectinate antenna**, as in *tenuis* Warr. (cfr. *Nov. Zool.* xx. 432). This pair may, at least provisionally, be merged with *assimilis* Rothsch. (*Lep. Brit. Orn. Un. Exped.* p. 9), described from a unique and rather faded ♂, which looks yellower green, with less fuscous costal edge and some other trifling differences.

51. *Oenospila lucifimbria glaucilinea* subsp. nov.

Brighter green than *lucifimbria lucifimbria* Warr., the lines twice as thick, of a more decided glaucous, the costal and distal edges brighter yellow.

Rook Island, July—August 1913 (A. S. Meek). Type ♂ and 6 ♀♀ in coll. Tring Mus.

52. *Berta antepлага* spec. nov.

♂, 24–26 mm. General coloration of *chrysolineata* Walk. Antennal pectinations rather less long.

Forewing with termen smoother and more regular; SC¹ arising from cell, though close to its end, anastomosing rather strongly with C; the white spots rather less intense, much less regularly and quite differently distributed, those of the proximal and distal areas being very small, those of the median mostly wanting, replaced by a large, irregularly quadrate patch shortly beyond the cell, bounded by R¹ and R³, and a much smaller subcostal patch anterior to its distal extremity.—*Hindwing* with termen rather less deeply dentate; distal spots much smaller than in *chrysolineata*.

Khasis, March 1894 (type) and February 1894 (3), all in coll. Tring Mus.

Labelled by Warren "*albiplaga* Warr."—evidently without consulting his type, which is smaller and duller, without the white median patches of the forewing, and with SC¹ stalked with the other subcostals.

SUBFAMILY GEOMETRINAE

53. *Hyposidra apioleuca* spec. nov.

♂, 50 mm. Head and body black.

Forewing with costa moderately strongly arched towards apex, termen oblique, shallowly concave between SC⁵ and M¹; dull brown-black, with rather thick, slightly deeper black antemedian and postmedian lines very faintly indicated; a white apical band, at the apex itself clouded with the ground-colour, especially at costa and between SC⁵ and R¹; proximal edge of this band extending from costa 7 or 8 mm. from apex to termen just in front of M¹, very slightly lunulate inward between the veins.—*Hindwing* with termen waved, a slightly more definite excision between the radials, the tooth at R³ noticeable but not large; without white marking.

Underside nearly as upper, forewing with slightly more noticeable whitish irroration and clouding on the black parts, hindwing in addition with a slightly paler tone along costa and distal area.

Medan, Doloc Baros Estate, Sumatra, May. Type in coll. L. B. Prout.

A NEW *ORTHOSTIXIS* (FAMILY *GEOMETRIDAE*).

By LOUIS B. PROUT, F.E.S.

Orthostixis impura spec. nov.

♀, 40 mm. Head and body concolorous with wings; tip of palpus blackish.

Forewing above much less white than in the other species, almost drab-grey; markings essentially as in *cribraria* Hb., but with the antemedian row of dots forming a much stronger curve, the indefinite ones on C and SC being placed 6.5 mm. from the base, that on M 7 mm. from base (almost at the origin of M²), that on SM² scarcely 5 mm. from base; postmedian row of dots only weakly curved; all these dots small; those of the termen rather strong.—*Hindwing* concolorous, marked almost as in *cribraria*; cell-dot and terminal dots strong.

Underside concolorous, but with the costal and distal areas of the forewing somewhat darkened; cell-dots strong; both wings with a weak postmedian and rather stronger terminal series.

Troödes, Cyprus, July 7, 1911 (J. A. Bucknill). Type in coll. Tring Mus.

With only a single specimen, and that a ♀, it is impossible to decide whether this may be merely a local form of *cribraria*; it was received as "*? calcularia* Led." The connective bar between C and SC of the hindwing is present, but exceedingly slender.

NEW ORIENTAL *NOCTUIDAE* IN THE TRING MUSEUM.*

BY THE LATE W. WARREN, M.A.

1. *Ramadasa fumipennis* spec. nov.

Forewing marked like *pavo*, but the basal half is blue-grey with fine black speckling and the outer half brownish yellow; the spot on inner margin beyond outer line large.—*Hindwing* yellow, the basal half suffused with fuscous except just beyond cell; a broad black subterminal band with a slight sinus on its outer edge in subterminal interval, the termen beyond it and fringe pure yellow.

Malay Peninsula.

2. *Ramadasa plumbeola* spec. nov.

Forewing with basal half bluish grey speckled with black; the orange costal edge broken by three wide black dashes; the median line thick and black, outcurved to three-quarters of inner margin, single, the usual outer arm being represented only by a black triangle on costa; a fine blue line on the curved discocellular, edged internally by a fine black line which curves downwards obliquely parallel to outer line; this is velvety black and curved from costa to termen, with a slight diffuse cloud inside its lower end, but with no horizontal black streak or line of metallic scales; the three black spots beyond cell large; the subterminal spots larger; the spot on inner margin beyond outer line absent.—*Hindwing* blackish fuscous with the fringe only yellow.

1 ♂ from the Khasia Hills, Assam.

The smallest species of the genus. The veins and folds are all straight and normal.

3. *Ramadasa biarcuata* spec. nov.

Forewing coloured as in *pavo*, but in the ♂ the basal area is more or less invaded by pale olive-brown; the median line is sinuous, not straight, and less oblique, reaching inner margin at two-thirds, black edged by pale lilac, often interrupted in midwing, single instead of double, the black outer arm only reaching subcostal vein, where it runs outwards and forms the oblique lower arm of the outer line, which runs obliquely from costa to fringe; the purplish metallic scales are restricted to a fine straight lustrous silvery line, reaching the red cloud, which is here elongate and edged on its inner side by a black line with the black dots below stronger; the lower edge of the outer line curves inwards along the discocellular, which is followed by a long narrow crescentic stigma filled in with olive and finely edged with silvery white; the inner-marginal area is generally darkened diffusely by a brownish cloud; subterminal dark dots as in *pavo*.—*Hindwing* yellow, rather paler in the ♂.

Dutch and British New Guinea. Type from the Upper Setekwa R., Dutch S.E. New Guinea (A. S. Meek).

* These descriptions were among the papers left by the late Mr. W. Warren. They have been compared with the specimens in the Tring Museum in order to make sure whether Mr. Warren had selected a specimen of each species or variety as type and labelled it as such. All the types have been found.—
EDITORS.

4. *Ramadasa dissoluta* spec. nov.

♂. *Forewing* wholly dull pale brown, the basal half speckled with dark; costa in basal half orange with a single black dot at base and two subcostal dots beyond; median line hardly marked except at costa; outer line starting from an oblique black costal triangle, curved obliquely to termen and filled up with blue-grey, its lower arm curving round into the discocellular; the crescentic stigma filled in with bluish scales edged by yellow; the narrow streak above vein 5 yellowish edged with black, running into an elongate reddish mark which has no black edge, the two dots below quite small; subterminal dots as in *pavo*; fringe brown.—*Hindwing* pale yellow.

2 ♂♂ from Vella Lavella, Solomon Islands (A. S. Meek).

5. *Negeta abbreviata* spec. nov.

Resembles *sublineata* Walk., but the wings much shorter; the costal edge yellowish; the subcostal nervules not marked; the oblique line from apex slightly bent at vein 3, not curved, and ending farther from base of inner margin, edged with white instead of yellow; subterminal line formed of grey spots in the intervals, preceded by the same grey blotches as in *sublineata*; no black terminal dots. *Hindwing* fuscous.

Hainan.

6. *Nertobriga olivaria* spec. nov.

Forewing pale olive-brown; the lines deep olive fuscous, rising from costal spots, all three (inner, outer, and subterminal) at first oblique outwards, then bluntly bent and oblique inwards, generally becoming indistinct towards inner margin; the space between outer and subterminal lines sprinkled with white scales, and the terminal area with fine white lines to termen between the veins; a dark brown dot at top and a white one at bottom of discocellular; orbicular represented by a black dot, not always present, in cell before inner line.—*Hindwing* pale olive brown.

Sikkim.

7. *Stictoptera signifera unipuncta* subsp. nov.

The median line runs obliquely outwards, thickened and black, the space beyond it before the outer line is fulvous, and the outer line is filled in with green except at costa; near the base of submedian fold is an elongate black spot.

1 ♀ from Bougainville.

8. *Odontodes pallidifimbria* spec. nov.

Forewing ochreous or greyish brown; a thick oblique black fascia from costa to submedian fold before inner line, which is ochreous and double; terminal area beyond outer line blackish, with a white spot on subterminal line between veins 5 and 6; inner margin bluish grey.—*Hindwing* velvety black, with the fringe yellow ochreous.

Penang, several specimens.

9. *Cacyparis brevipennis* spec. nov.

Like *hilaria*, but the forewing broader and shorter; the curved yellow band broader in both sexes; its lower edge straighter and bent down to inner margin before tornus.

New Guinea: Kapaur, Milne Bay (type), Humboldt Bay, Oetakwa River.

10. *Cacyparis rectilineata* spec. nov.

Nearest to *brevipennis*; the line limiting the basal patch, which is olive-brown, concisely straight from one-third of costa to beyond middle of inner margin; the yellow area much broader and at termen running up nearly to apex; the brown subapical area mixed with some grey scales; the boss of inner margin small; the fringe pale, slightly lustrous, but without any lustrous scales at termen before it; hindwing deep yellow, with a slight grey subterminal cloud beyond cell.

Two specimens from Cedar Bay, Cooktown, Queensland (A. S. Meek); 1 ♀ from Mulgrave River, Cairns, February 1889 (Barnard).

11. *Hyposcota aurata* spec. nov.

Forewing olive grey-brown, with two faint dark spots in cell; costa golden yellow to middle, the costal edge throughout; the apex, tornal area, and termen narrowly between veins 2 and 4, with the fringe, golden yellow.—*Hindwing* and fringe golden yellow.

Underside of forewing blacker, the costa towards base marked with yellow; the yellow areas as on upper side in both wings, but in ♂ hindwing with black spot below cell.

Face brown; vertex orange; tegulae orange laterally edged with olive fuscous, with metallic boss in middle; thorax grey; metathoracic tufts yellow with dark tips; abdomen yellow.

A series from Hainan.

12. *Gabala australiata* spec. nov.

Smaller than *argentata*, and superficially most like *polyspilalis*, from which it is separated at once by the absence of the fringes of hair on hindwing; but it is also distinguished, along with the following species, by having a yellow triangular spot on middle of costa instead of the oblong white patch of *polyspilalis*; the outer half of the wing beyond the basal patch is darker brown, especially along the basal, costal, and terminal pale markings; the black triangular marks less conspicuous, and the area below them dappled with reddish white, which in the clearer examples takes the form of curved lines; hindwing yellowish, with the termen reddish from apex to vein 2.

2 ♂♂, 2 ♀♀ from Cedar Bay, Cooktown, Queensland (Meek).

13. *Gabala quadrinigrata* spec. nov.

Resembles the preceding, but the whole of the outer two-thirds of forewing is uniform dark snuff-coloured brown, with a faint reddish dot here and there; the basal area is followed on inner margin by an irregularly quadrate large black patch touching the cell; the silvery white spots representing the subbasal and inner lines

are large, but the middle one of the three of the inner line is smaller and yellowish, as in *australiata*, with which in all other respects it agrees.

1 ♂ from Little Kei Island (H. Kühn).

14. *Gabala sanguinata* spec. nov.

Forewing with basal area bright scarlet, containing numerous minute yellow dots and striae; the subbasal line a brown patch on costa with a curved line from it to median vein; the inner line represented by three small silvery white spots in a straight line; the rest of wing dark snuff-brown along the basal and costal markings, and narrowly along termen, the included quadrate space being dull crimson dappled with dull yellow; costa with a large yellow triangle at middle and four shallow lunules before apex; the whitish spots in the subapical blotch reduced and narrow; the group before middle of termen represented by a single white dot; fringe yellow, very slightly marked with brown at apex, tornus, and vein 5.—*Hindwing* whitish at base, yellow in outer half, with some crimson scales along termen forming an undefined spot at the tail.

1 ♂ from Java.

15. *Gabala flavimargo* spec. nov.

Resembles the preceding species *sanguinata* in having the subbasal line represented by a curved brown mark from costa; the basal area is larger, formed of yellow spots with fine red reticulations, the outer three being large, the middle one yellowish and the two outer silvery white; the rest of the wing snuff-brown with rows of reddish yellow spots separated by wavy brown lines and veins; a single white dot before termen at vein 5; fringe yellow, marked with brown at apex, tornus, and vein 5, the termen itself both above and below vein 5 being narrowly and irregularly yellow also; hindwing pale yellow, whiter at base; a reddish cloud on termen at end of vein 2 below the tail.

1 ♂, 1 ♀ from Dili, Timor, taken May 1892 by W. Doherty.

16. *Gabala hilaris* spec. nov.

Agrees with the last species in having the termen of forewing narrowly yellow, as well as the fringe; but the ground-colour is much paler, being a mixture of pale brown, yellow, and pink; the basal area yellow, tinged and divided into spots by orange-red, the outer spots also yellow, more or less confluent and bounded by an orange-red line, followed on costa by the usual triangle and on inner margin by an isolated small round yellow spot; the brown area bounding the basal and costal markings is quite pale, followed by a broad area from inner margin to vein 6 of dull pink containing at top a small black dot; the termen itself is narrowly purplish red-brown before the yellow, and is preceded by an orange-yellow space traversed by orange-red lines; before the termen at vein 5 are two silvery white spots; the white spots of the subapical group are oblong, separated by orange-red scaling, and more or less confluent with the yellow costa: hindwing yellowish, with the termen flushed with pale orange-red above vein 2.

2 ♂♂ from Tabora, Sambawa; one, the type, from the low country, taken in April or May 1896, the other, between 2500 and 4000 ft., in June 1896, by W. Doherty.

17. *Gabala flavicosta* spec. nov.

Forewing deep chocolate-brown, across which the course of the lines can be discerned, obscurely marked by dull blackish spots, costal edge broadly deep yellow, interrupted before and beyond middle by the brown ground; terminal area narrowly and the fringe deep yellow, uninterrupted at middle by a tooth of brown colour; basal area below the yellow costa filled in with deep crimson mixed with irregular whitish dots, containing on its outer edge between vein 1 and the cell-fold a large somewhat diamond shaped silvery white blotch; below the subapical yellow area and partially confluent with it are two round silvery white spots with a triangular one between them, the outer one with a white dot below it, preceded by a fine crimson line which runs past another silvery spot before the termen at vein 5.—*Hindwing* and fringe pale yellow.

Head, palpi, thorax, and patagia chocolate-brown; tegulae red mixed with yellow, containing a small yellowish spot on their inner edge and a large silvery white one towards the outer; dorsum ochreous, with the middle line and basal tufts brown; venter and legs white; the tibiae yellow. Underside of wings yellowish, whitish basewards, the fringe deeper yellow; the dark area of forewing showing through.

1 ♀ from the Kumusi River, N.E. British New Guinea, low level, taken in August 1907 by A. S. Meek.

18. *Chaudica meeki* spec. nov.

♀. Differs from *quadripennis* in being redder brown with the yellow markings deeper; the lines more conspicuously red; the lobe at the end of veins 3, 4, 5 of hindwing rounded, instead of forming an angle; in the ♂ the costa of hindwing reaches hardly to the middle of the inner margin of forewing, and curves into the termen gradually without forming an angle. The underside of hindwing wholly white, with long curling hair along costa and rough curved hair in terminal half down to submedian fold.

A series from near the Oetakwa River, Snow Mountains, Dutch New Guinea, up to 3500 ft., taken from October to December 1910 (A. S. Meek).

19. *Chaudica schistipennis* spec. nov.

♂. *Forewing* brick-red, becoming purplish fuscous along the yellow costal markings, and red-brown along the terminal; the lines yellow.—*Hindwing* deeply cleft along the discal fold to end of cell; yellowish tinged with dull fulvous; on the underside the hairs of the upper lobe and at end of the cleft reddish, the rest pale yellow.

A ♂, minus the head, taken by W. Doherty, in Celebes, type. Smaller than the other species, with veins 3, 4, 5 of hindwing stalked, probably in both sexes; a ♀ from Nias Island, at all events, exactly agreeing both in size and colour, has all three stalked.

20. *Chionomera peresa* spec. nov.

Resembles *pulchella* in size and coloration, also in the markings, except that the large white conical central area is divided into two small conical blotches; one truncated from costa to median vein, the lower triangular on outer third of inner margin, its apex near the lower outer angle of the blotch above.

1 ♂ from East Pegu, March and April 1890 (W. Doherty). This may be an abnormal specimen of *pulchella*.

21. *Titulcia javensis* spec. nov.

Forewing almost exactly like that of the ♂ of *argyroplaga* both in ♂ and ♀ ; but the costa to inner line is fulvous brown ; the yellow is tinged with olive ; the large apical silvery subterminal patch is joined below middle by a silvery streak to tornus, beyond which from vein 3 to tornus the termen and fringe is olive-yellow, unchequered, and without black basal line.—*Hindwing* olive-brown in both sexes.

1 ♂, 1 ♀ from West Java.

22. *Tyana magniplaga* spec. nov.

♂. *Forewing* dark green covered with minute paler striae ; costal edge pale brown ; basal patch flesh-colour edged with dark brown ; at one-third of costa a large semi-elliptical flesh-coloured patch, thickly edged with red-brown ; from lower end of cell an inwardly oblique flesh-coloured bar, formed of two blotches, the upper one large, stretching from discal to submedian fold, traversed by the base of veins 2 and 3, broadly edged with red-brown, the lower below the submedian fold an elongate oval ; an interrupted irregular series of terminal flesh-coloured spots edged with red-brown, those above and below vein 5 coalescing ; fringe pale pink.—*Hindwing* nearly pure white with the inner-marginal tuft slightly grey-brown. Head, tegulae, patagia, and legs flesh-coloured ; the diamond-shaped centre of thorax pale green ; dorsum white suffused with fuscous grey ; ♀ with the striae and reticulations deep yellow ; the costal edge broadly dark snuff-brown, which is likewise the colour of the costal and subcellular blotches and of the terminal border which resembles in contour that of *callichlora* ♀, with the subterminal dots flesh-colour instead of white, and the anal area as dark as the rest ; all the brown markings edged with yellowish ; hindwing pure white. In another form of the ♂ all the flesh-coloured blotches are larger, much paler, and edged with rust-colour instead of red-brown ; the lower blotch of the series below cell not separate, but coalescent and forming part of one broad oblique blotch.

3 ♂♂ and 2 ♀♀, all from Sikkim, 2 of the ♂♂ belonging to the aberration.

23. *Tyana elongata* spec. nov.

Forewing longer and narrower than in *falcata*, the costa arched from base to apex, the costal streak white, without dark dusting ; apex more produced, so that the termen is more oblique and the anal angle decidedly obtuser ; fringe with basal half pale, the outer half pinkish fawn-colour, the apex pink.—*Hindwing* white ; occiput and base of tegulae tinged with yellow.

Antennae uniform pale, not annulated with dark.

Sikkim ; a pair.

24. *Tyana marina* spec. nov.

Forewing deep sea-green, becoming pale yellow-green along the extreme termen ; the fringe yellow-green ; costal edge brown from base to apex ; a dull brown spot from lower angle of cell to submedian fold ; a white spot at base, and a few brown scales on inner margin near base.—*Hindwing* white ; the tuft of hair in the fold of hindwing pink.

1 ♂ from Kina Balu, Borneo.

25. *Earias brevipennis* spec. nov.

Forewing yellow-green; the fringe concolorous.—*Hindwing* white, faintly greenish along termen below apex.

Underside of forewing paler green, with a patch of purplish brown scales along costa from base to middle; hindwing greener than above.

Head, thorax, and abdomen green; palpi and forelegs purplish-brown.

1 ♂ from Batchian taken by W. Doherty in March 1892. Wings short and broad; the forewing strongly shouldered near base.

26. *Earias rufipes* spec. nov.

♂. *Forewing* yellow-green, pinkish yellow at base of costa; fringe olive green mixed with grey, the tips pale and shining; a minute brown dot at end of cell.—*Hindwing* and fringe white, with a very faint greenish tinge at termen from apex to middle. Underside of forewing quite pale green, of hindwing white tinged with green towards apex.

Face and thorax pale green, dorsum greyish white; antennae, sides of frons, palpi, and forelegs bright scarlet; the same size as *pubicana* Staud.

In the ♀ the palpi are much longer; the fringe of forewing concolorous.

4 ♂♂, 1 ♀ from Kei Island, taken by H. Kühn in 1897 and 1898.

27. *Earias venusta* spec. nov.

Differs from *roseifera* in the rosy suffusion being ampler, extending from near base to the subterminal area along costa, which it touches, and reaching submedian fold in both sexes; fringe greenish, tinged with pinkish brown. Hindwing white, with a faint greenish tinge. The underside of both wings pale yellowish green.

Palpi dark brown; face either pale green, or green tinged with rosy, or wholly rosy; thorax greenish; abdomen grey.

1 ♂ from Simla (type), and 2 ♀♀ and 1 ♂ from the Khasia Hills.

28. *Earias apicebrunnea* spec. nov.

♂. *Forewing* pale yellow green; the costal edge from base to middle reddish; terminal area and inner margin deeper green; inner and outer lines marked by ferruginous brown spots on veins; the inner strongly incurved in cell; a diffuse reddish brown spot on discocellular, with a slight rusty suffusion to each line; subterminal line slightly darker green, obscure; fringe green, with a red-brown blotch at apex of wing.—*Hindwing* white, faintly green-tinged; in the ♀ the lines are often faint; the space between them suffused with rosy, this colour sometimes extending to base along cell and reaching inner margin on one hand and beyond outer line extending to apex; the discal spot faint; base of costa green; fringe and hindwing as in ♂. Underside of both wings yellow-green; base of costa of forewing reddish in the ♂; apex of forewing, as well as fringe, red-brown.

Palpi chocolate-brown; face and thorax pale green, both tinged with rosy in ♀, only the face in ♂; dorsum whitish tinged with grey.

2 ♂♂, 3 ♀♀ from the Khasia Hills, Assam (type), and 1 ♂ from Sikkim.

29. *Earias venusta* spec. nov.

Forewing pale green; the costa from base broadly rust-colour; a diffuse rust-coloured spot on discocellular; a small round green spot in cell; the lines darker

green ; a median bent in cell ; outer bent at veins 6 and 4 ; an obscure subterminal ; termen deeper green ; fringe violet-grey.—*Hindwing* white, tinged with very pale grey in ♂, darker in ♀ ; the termen towards apex faintly greenish ; the veins darker grey. Underside grey, darker in forewing than hindwing : both wings with a yellow-green apical patch, stronger in the ♀.

Palpi and antennae purplish brown ; head and thorax pale green ; abdomen white, the dorsum dark grey.

A pair from Momeit, Burma, June 1890 (W. Doherty). In shape and appearance much resembling *apicebrunnea* Warr. from the Khasia Hills, but the fringe is different, and the lines green in both sexes, the ♀ without the rosy tinge. The last two species may be distinguished from *roseifera* Btlr. by the longer wings with pale green fringes.

Parerastria gen. nov.

Tongue well developed ; frons smooth ; palpi upturned, the second segment moderately scaled, the third short and smooth ; antennae of ♂ serrate, pubescent ; the basal segment enlarged, with a slight tuft ; head and thorax roughly scaled ; metathorax slightly crested ; dorsum smooth.—*Forewing* elongate triangular ; the costa protuberant beyond middle ; apex blunt ; termen shallowly excised between 7 and 4, which is somewhat prominent, then oblique ; the tornus with a strong tooth of scales ; inner margin sinuate, incurved before the scale tooth ; forewing with veins 7, 8, 9 stalked, 10 and 11 free, from the cell ; 5 from just above 4 in both wings ; in hindwing 3, 4 and 6, 7 from angles of cell.

Type : *P. castaneata* spec. nov.

30. **Parerastria castaneata** spec. nov.

Forewing chestnut brown ; the costa at base and the terminal area narrowly, white : inner line dark, oblique and straight from costa to submedian fold, then inwardly oblique to near base of inner margin ; the costa spotted with brown before the protuberance ; orbicular stigma a small annulus with brown outline ; reniform large, somewhat oblique, with dark outline and brown centre ; outer line oblique outwards to vein 7, then slightly lunulate-dentate, vertical to 4, incurved to submedian fold and again outcurved, followed by another dark line, and a brown band, of which the outer edge is lunulate-dentate ; termen white, except at apex ; a terminal line of dark grey lunules ; fringe pale grey ; the tooth of scales whitish with two black marks.—*Hindwing* whitish at base, becoming grey towards termen beyond a dark curved outer line.

Mackay, Queensland.

31. **Chloroplaga pallida** spec. nov.

Forewing greyish ochreous, thickly sprinkled with dark green scales ; a dark green oblique costal patch at one-third connected with a curved green lunulate patch in cell ; a small green costal patch at two-thirds ; from these patches an inner vertically waved line and an outer sinuously curved line can be traced to inner margin, where they approximate ; submarginal line starting from a green spot close before apex, formed of green spots or lunules between veins, indented on each fold and outcurved between, preceded by a pale ochreous band ; fringe grey mottled with dark.—*Hindwing* in both sexes whitish towards base, straw yellow in outer

half, with a purple abbreviated outer and much-waved subterminal line; the terminal border deep purple-brown: fringe yellow mottled with brown.

Gunong Ijan, Perak, 2000–3000 ft., March 1898 (Butler). Type: Penang, Selangor. Both sexes are alike.

Homophlebia gen. nov.

Tongue present; frons smooth; palpi upcurved in front of face; the second segment thickly scaled, the third porrect, pointed; antennae of ♂ filiform, with very fine short bristles; thorax and abdomen smoothly scaled, without crests; abdomen of ♂ elongate.—*Forewing* narrow, elongate, costa shouldered near base, the apex prominent; termen vertical or slightly incurved to vein 3, then hooked and obliquely incurved.—*Hindwing* with apex somewhat prominent; neuration as in *Camptozada*, a vein in each wing missing (? coincident).

Type: *H. bilinea* Swinh. (as *Clethara*).

32. **Homophlebia xanthosoma** spec. nov.

Differs from *bilinea* Swinh. in the dorsum and whole hindwing being yellow; the submarginal line and fringe above vein 2 grey; in the forewing the two lines are yellow, not white.

A single ♀ from Sumbaŵa.

33. **Gelastocera viridimacula** spec. nov.

Forewing greyish ochreous speckled with black, and suffused with pale brown or fuscous; the basal area pale fulvous, containing a large green blotch at base reaching from costa to submedian fold, edged with white, and along costa underlined with red; inner line vertical, black inwardly edged with whitish, wavy and dentate; outer line black, irregularly crenulate, preceded by a brown median shade; subterminal line formed of black spots in the intervals; stigmata represented by a small spot and a large black one; terminal line black with small dots on it; fringe dark brown, but pale at anal angle.—*Hindwing* dull whitish, faintly tinged with rufous; black terminal dots in upper half of wing.

Penang and Gunong Ijan, Perak.

34. **Mauritia pallidipennis** spec. nov.

Forewing pale ochreous, sometimes with a faint reddish tinge; the lines grey, placed as in *cervina*.—*Hindwing* semihyaline pale luteous; like *cervina*, the discocellular is sometimes marked with a blackish lunule.

This pale form occurs in Sikkim (type) and in the N.-Chin Hills, Burma.

35. **Mauritia orthoscia** spec. nov.

Forewing grey finely speckled with black; the costa narrowly rusty; the inner and outer lines thick and straight, slightly oblique outwards and parallel to each other; the inner preceded and the outer followed by a similar but fainter line; subterminal line of minute black speckles; cell-spot black on the outer line.—*Hindwing* shining white, with a blackish border from apex to submedian fold before the white fringe.

Angabunga R., British New Guinea, 6500 ft., November 1904—February 1905 (A. S. Meek).

Lasionotella gen. nov.

Tongue well developed; frons smooth; palpi upturned, the second segment thickly scaled, roughened in front, the third short and smooth, porrect; antennae of ♂ pubescent; abdomen of ♂ long, hirsute, especially the dorsum, with tufts of hair; the anal tufts large; forewing with costa slightly arched at base, then straight; apex well-marked; termen curved; the inner margin convex; hindwing with termen excised from vein 6 to 3, and from vein 1 to anal angle, the inner margin very short; the cell area very broad, the space below median contracted; a large foveal space on underside before termen between veins 5 and 3; the termen projecting at the end of veins 6, 7 and 2, 3; in forewing vein 6 from upper angle of cell; veins 7, 8 stalked, 9, 10 stalked, 9 anastomosing with 8; in hindwing vein 5 curved shortly upwards, veins 4 and 3 long-stalked.

Type: *L. exesa* spec. nov.

36. **Lasionotella exesa** spec. nov.

Forewing chalk-grey, slightly speckled with black; base of costa and a straight streak from one-third of costa to termen above anal angle green; lines dark, plain only at costa, more or less vertical and irregularly waved; the outer bent outwards below subcostal vein, then curved between veins, and followed by a dark diffuse cloud, paler in centre of wing; a slight flesh-coloured tinge in median area below cell, especially at base of veins 3 and 4; cell-spot black; subterminal line broad and pale, clearest at costa, where it is preceded and followed by three greenish black wedge-shaped spots with the veins across them pale; terminal area greyer; terminal spots brown; fringe whitish, slightly darker chequered.—*Hindwing* dull pink, paler and greyer basewards and along inner margin; fringe pinkish white.

Described from a single ♂ from N. Borneo.

Hypaenistis gen. nov.

Tongue present; frons smooth, with a projecting tuft of hairs; palpi upturned, strong, the third segment short, porrect; antennae of ♂ with tuberculate fascicles of cilia, the basal segment swollen; thorax and abdomen smooth; the abdomen very long and slender, with the anal tufts largely developed; forewing with areole, veins 8 and 9 anastomosing; hindwing with vein 5 absent, ? coincident with 4.

Type: *H. purpurea* spec. nov.

37. **Hypaenistis purpurea** spec. nov.

Forewing dull olive with very obscure markings; the basal area and the terminal area darker; a bent broad median shade; two dull green, paler-edged spots on discocellular, conversely pear-shaped, the lower the larger; subterminal line lunulate-dentate, indistinct; fringe dark olive with minute white dots at base.—*Hindwing* deep vinous red, the costa pinker; termen and inner margin dark olive.

Vertex of head and tegulae white.

Choiseul Island, Solomons, January 1904 (A. S. Meek).

38. *Pterogonia cassidata* spec. nov.

♂. Forewing lilac-grey along inner margin and towards apex above vein 2, the rest of the wing suffused with red-brown and shagreened by pale and dark transverse striae; the lines pale outwardly edged with reddish; the inner oblique to median vein, then vertical to vein 1, then again oblique; the outer shortly angled outwards at veins 8 and 4, and inwards on both folds; two or three subterminal black spots; the spot on discocellular as in *episcopalis* Swinh., but more rounded inwardly, edged with dark brown, with no black spot below lower end.

One ♂ from Coorg, Mercara.

In this species the median vein and vein 1 are only slightly distorted; veins 6 and 7 slanting downwards to termen. In *episcopalis* veins 2 to 7 are all greatly distorted, the submedian fold being strongly marked beneath.

39. *Westermannia equina* spec. nov.

Smaller than *columbina* Warr. (1914). The forewing paler grey; the dark spot in cell minute or absent; the median prolongation of the dark terminal shade reaching below vein 1 and bluntly rounded, its inner edge more vertically curved; the reniform stigma narrower, with a black spot above it and a white (or yellow) one below it; the figuration, roughly speaking, resembling the head of a horse.

Little Kei.

40. *Westermannia interrupta* spec. nov.

Forewing greyish brown, growing paler towards costa and termen; costal edge pale; inner margin from base of cell to three-quarters cream-colour, indented and often quite interrupted at a little before middle by the brown ground-colour; lines very obscure; the outer rather darker, outcurved and more or less parallel to termen; subterminal more indistinct; reniform stigma marked by a black dot at upper end and a white one at lower end of discocellular; fringe brown.—*Hindwing* whitish washed with fuscous grey, diffusely darker along termen; the veins dark.

The ♀ is decidedly darker in both wings.

Solomons, from various islands, type from Florida, all collected by A. S. Meek.

41. *Tympanistis rufimacula* spec. nov.

Forewing grey, dusted with greenish grey, without the transverse strigulae; lines greenish grey, more concise; the inner bent outwards towards inner margin, the outer incurved below middle, approaching inner line on inner margin, followed by a feebler grey line; subterminal line formed of slightly connected spots, indented on each fold; cell-spot red; the inner margin at base, the basal half of submedian fold and a patch along vein 3 to subterminal line red.—*Hindwing* red, with costa pale ochreous.

Khasia Hills, Assam. Much smaller than *testacea* Moore; the scaling normal.

42. *Dabareta tumidistigma* spec. nov.

Distinguished from *chlorostigma* by the stigmata being dark green edged with whitish and much larger, especially the claviform, which sometimes extends below vein 1 and above coalesces with the orbicular.

Khasia Hills, Assam (type); Sikkim, Manipur, Burma. In the Sikkim specimen, a ♀, in the British Museum collection (teste Hampson), the veins 3, 4 of hindwing are well stalked; in the four specimens in Tring Museum this is also the case in the 3 ♂♂ from the Khasias; in the ♀ from Manipur the stalking is not perceptible.

43. *Didigua chalybea* spec. nov.

Forewing dull lilac-grey; the lines and shadings rusty green; inner line indented below middle, excurved above and below, followed on inner margin by an oblong rusty brown patch; cell-spot linear, rusty brown; outer line waved, oblique, indented on each fold, followed by an indistinct shade of brown; subterminal line formed of dark spots below costa, that below 7 near termen, then by a fine lunulate-dentate brown line; some fine dark terminal lunules; fringe grey with white line at base.—*Hindwing* purple black, with a steely lustre; fringe grey with white line at base; underside of forewing black-green with a steely gloss, the margins lilac-grey.

1 ♂ from Penunghah, Borneo.

44. *Didigua immemor* spec. nov.

Smaller and greyer than *viridipicta*, with the markings much the same, but the green coloration almost obsolete; the slight amount left being overpowered by the grey suffusion; an oblong black blotch from the discal spot to outer line, absent in one specimen; the apex dark grey; hindwing grey.

From the Khasias.

45. *Didigua mixticolor* spec. nov.

Forewing pale whitish ochreous, dusted with rufous and olive scales; the base with slight green suffusion; inner line marked by a green spot on costa, oblique outwards, strongly indented on submedian fold, rufous below middle; outer line pale, preceded by a dark greenish fuscous round blotch at end of cell and by a green line from costa, and below the cell by bright scarlet scales; edged outwardly by a somewhat deeper suffusion of green and rust-coloured scales; discal spot bright scarlet on the inner edge of the dark blotch; submarginal line pale, waved, indented on each fold, preceded and followed by green and reddish speckling, the green forming small spots; some grey-green linear streaks in the intervals from subterminal line to termen; fringe white rayed with rust-colour beyond veins.—*Hindwing* luteous, becoming brick-red towards apex and termen; the inner margin grey; fringe rufous spotted with brown and tipped with white.

1 ♀ from Penang (type), and 1 ♂ with the markings plainer, without locality.

46. *Aiteta deminutiva* spec. nov.

♀. *Forewing* fawn-grey, speckled with black; the costal edge finely ochreous; lines ferruginous, ill-marked; inner oblique from one-fourth of costa to middle of inner margin, indented on submedian fold; outer from middle of costa obliquely curved to before tornus; traces of a subterminal line formed of spots near costa; fringe in basal half mottled brown and black; in apical half pale.—*Hindwing* uniform grey; the fringe whitish, with a blackish line near base.

Underside of forewing dark grey; the costa ochreous, the apex pale grey beneath a black costal spot; fringe ochreous between veins 2 and 4; hindwing white.

Palpi, pectus, legs, and lower half of face whitish ; head, thorax, and abdomen fawn-grey.

Quite the smallest species of the genus, expanding only 18 mm.

Vella Lavella, Solomon Islands, February—March 1908 (A. S. Meek), 2 ♀♀.

47. *Aiteta albignesia* spec. nov.

Smaller than *albicosta* (Beth.-Bak.), the ground-colour brown instead of grey, dusted with darker, and with the inner margin suffused with dark fuscous brown ; hindwing white, the apical area fuscous grey, and the veins darker.

British New Guinea : Angabunga River (A. S. Meek).

48. *Hylophilodes parallela* spec. nov.

Forewing with the same silky ground-colour as in *orientalis*, but the median area always paler than the basal and terminal ; the costal edge yellow-brown throughout ; inner line as in *orientalis*, but generally slightly curved, concave outwards ; a slight green cell-mark ; outer line parallel to inner, from just beyond middle of inner margin to two-thirds of costa ; subterminal line as in *orientalis*, but fainter, without white edging ; fringe olive-yellow, with some red scales at apex of wing.—*Hindwing* and fringe pure white.

Underside pearly white ; costa of forewing dusted with purplish ; fringe at apex reddish, with three black dots.

Face and tegulae deep green ; lower part of face and base of tegulae purplish ; patagia whitish green ; abdomen white, with yellow-green hairs at base in the ♀ ; pectus and venter white ; legs and palpi pinkish grey, tinged with brown.

1 ♂, 1 ♀ from the Khasia Hills, Assam.

49. *Paracrama latimargo* spec. nov.

Differs from *dulcissima* Wlk. in the terminal border of forewing beyond subterminal line being broader ; the hindwing white for two-thirds, then with a rosy border with diffuse inner edge ; the lines of forewing are yellow, instead of pale green.

Ninay Valley, Central Arfak Mts. (type), also from British New Guinea.

50. *Paracrama angustimargo* spec. nov.

Differs from *dulcissima* in the terminal border of forewing beyond subterminal line being narrower ; the sinus touching the termen ; the hindwing less suffused with rosy.

Ceylon ; Belgaum, S. India.

51. *Carea confinis* spec. nov.

Forewing bright rufous with dark irroration, denser, and forming shades in the ♀ ; the costal edge red ; inner line oblique, bent outwards shortly along median vein ; outer twice excurved, indented on the folds ; subterminal waved and angled ; a diffuse dark shade oblique from towards bottom of inner line to top of outer in the ♀ only ; cell-spot black ; in the ♀ a dark shade before inner line and beyond the outer ; fringe brownish red.—*Hindwing* white in basal half, orange-red in terminal, pale olive-grey along inner margin.

Khasia Hills, Assam.

52. *Carea cervina* spec. nov.

Forewing fawn-colour, with darker irroration; the costal edge ochreous; lines very indistinct, darker grey; the inner, apparently, outcurved above and below the median vein; the outer scarcely visible; cell-spot black above a slight dark cloud; subterminal line angled and dentate; fringe dark grey; apex slightly produced; the termen slightly sinuous.—*Hindwing* dull reddish, the costa pale towards base, the inner margin grey below median.

Burma. Described from a single ♂.

53. *Carea minima* spec. nov.

Forewing rufous, densely sprinkled with purplish-red scales, more or less obscuring the markings; the two lines dark, oblique and parallel; cell-spot small and black; subterminal diffuse and obscure; costal edge reddish.—*Hindwing* whitish towards base, orange in terminal area; the inner margin tinged with grey in ♂.

Quite a small species.

Penang.

54. *Carea sabulosa* spec. nov.

Forewing rufous brown, thickly sprinkled with darker scales; the costal edge finely white; lines very obscure, purplish brown; the inner slightly oblique outwards, faintly waved; the outer inbent on both folds; subterminal line lunulate dentate; the veins towards termen a little lighter than the ground-colour; a dark cell-spot; fringe concolorous, the tips beyond veins 2, 3, and 4 white-dotted.—*Hindwing* orange red above median vein and vein 2, below them olive-grey.

Sikkim and Assam.

55. *Carea curtisi* spec. nov.

Resembles *sabulosa*, but smaller and darker, more suffused with purplish; the inner line straight and oblique, not wavy; the orange of hindwing redder.

Penang (C. Curtis).

56. *Carea simplicilinea* spec. nov.

Smaller than *flava* Beth.-Bak., with which it agrees in the main; but the black costal marks are almost obsolete near base, and the outer line runs straight from costa at four-fifths, or with a slight curve, to anal angle; the terminal area is narrower, the termen being less bulged; hindwing white at base and along inner margin, tinged with orange fulvous in outer half from apex to vein 1; the fringe dark.

Oetakwa River, Snow Mts., Dutch N. Guinea, up to 3000 ft. (A. S. Meek).

57. *Carea verticata* spec. nov.

Forewing fawn-colour, dusted with olive fuscous, and with a slight rufous tinge; lines olive, thick, vertical; inner slightly incurved, preceded by a whitish line and followed by olive suffusion; outer straight, slightly divergent, also preceded by a white line and with olive suffusion beyond it; subterminal line waved; a black cell-spot.—*Hindwing* dark olive fuscous.

A single ♂ from Gunong Ijau, Perak.

58. *Carea trilineata* spec. nov.

Forewing dull brownish fulvous, speckled with black; lines blackish; inner and outer nearly vertical on each side of the black cell-spot, the outer slightly bent below costa; submarginal line thicker, dentate, somewhat interrupted between 4 and 6; a diffuse dark cloud oblique from bottom of inner line to end of cell; fringe dark brown, marked with two white lunules at anal angle; in the ♀ with short white dashes at end of veins.—*Hindwing* orange reddish, paler towards base and costa, olive-grey along inner margin.

Khasia Hills, Assam.

59. *Carea diluta* spec. nov.

Closely resembles *trilineata*, but is larger, more fulvous, and clouded with dark shades; hindwing paler, suffused all over with pale orange, the inner margin hardly grey. Underside of both wings pale ochreous, tinged with rufous along costa and termen, without dark speckling or white scales at apex of forewing; the disc of forewing not orange-red.

Thorax and patagia brighter fulvous.

Malay Peninsula: Rukit Putus (type), Gunong Ijau.

60. *Carea undicostata* spec. nov.

Forewing leaden grey, suffused from base to outer line with purple brown; lines darker, placed much as in *varipes*; before the outer line in the costal half of wing is a deep fulvous-brown cloud, narrowing downwards; an indistinct wavy dark subterminal shade; a dark spot at end of cell; fringe dark brown.—*Hindwing* dull orange-red; the inner margin and base olive-grey.

Underside of forewing brick-red, the costa and apex purplish grey; of hindwing ochreous, with quite the outer apical half purplish grey speckled with black.

Head and thorax purple-brown; abdomen dorsally olive-fuscous, like inner margin of hindwings; venter, especially towards anus, bright red.

Superficially much resembles the ♂ of *tumida*, but the apex of the forewing is bluntly but prominently produced.

1 ♀ from Kina Balu, North Borneo.

61. *Carea triguttata* spec. nov.

Forewing lilac-grey, sometimes with a slight brownish tinge, especially beyond inner line towards inner margin; markings deep green; a triangular spot on costa near base; a drop-shaped blotch before one-third, from the apex of which the inner line runs oblique and straight to inner margin, very often obsolete; a large truncate blotch before apex from the middle of which the dark outer line runs vertical to inner margin, marked by darker dots on veins; this blotch is followed by a short white costal streak, the extreme costal edge being also white; a black spot at end of cell; fringe more or less brownish green, except at anal angle, where it is white.—*Hindwing* wholly deep brick-red.

Dutch New Guinea: Ninay Valley, Central Arfak Mts. Larger than *costiplaga*.

62. *Carea nicobarensis* spec. nov.

♂. *Forewing* violaceous pink, the shading olive-fulvous; inner line distinct, purplish edged outwardly with fulvous red; a short subbasal purplish line; outer line

double, purplish, the exterior arm very thin, starting from costa nearer apex than in *tumida*, preceded by a bright fulvous shading; subterminal line not marked; termen fulvous, with the fringe darker; the cell-dots minute.—*Hindwing* uniform brick-red, the inner margin slightly paler.

Agreeing in shape of forewing with *tumida*, but smaller and differently coloured.

Nicobar Islands.

63. *Carea commixta* spec. nov.

Forewing lilac-grey, speckled throughout with olive-green scales, except just before the inner and outer lines and the fringe; lines thick, deep olive-green, the inner somewhat outwards curved towards inner margin, the outer straight and oblique; two faint green spots in the cell rather close together; beyond the outer line there is a large diffuse olive-green costal blotch, the area below it slightly washed with pale violet; fringe deep olive-green, becoming white below vein 2.—*Hindwing* brick-red with an orange tinge, the inner margin broadly olive-fuscous; fringe red, white at anal angle.

Underside of forewing brick-red, the costa pinkish grey with darker speckling, the termen dusted with black towards apex; hindwing pinkish ochreous, dusted with dark scales along costa and apical third, where the fringe is red.

Head and tegulae dark olive-green; patagia and thorax grey; abdomen grey ringed with green; the anal segment, venter, and hindtarsi ferruginous red.

1 ♀ from near the Oetakwa River, Snow Mts., Dutch New Guinea, up to 3500 ft., October—December 1910 (A. S. Meek).

64. *Carea calva* spec. nov.

Forewing pale brick-red or reddish ochreous; the inner and outer lines very faintly darker, the former at one-third straight and oblique, the latter at two-thirds slightly excurved from costa, then vertical; fringe purplish with a fine black line through it, white at anal angle; a slight dark cell-spot sometimes visible.—*Hindwing* clear pale brick-red, paler towards base.

Underside brick-red, both wings speckled with purplish towards apex; fringe of forewing purple.

Palpi purple-brown; head, thorax, and abdomen like wings; nearest to *unipunctata* Beth.-Baker from New Guinea.

Malacca: Gunong Ijau (type) and Selangor.

65. *Carea infundibulata* spec. nov.

Forewing pale chestnut-brown with a slight violet sheen; the costal edge, the inner and outer lines, and a funnel-shaped shade along this last from costa yellowish olive-brown; cell-spot distinct, black; extreme termen red-brown; fringe dark brown, with a line of black scales at the tips below middle.—*Hindwing* pale ochreous yellow, deeper yellow along termen.

A single ♀ from Penang, Malay Peninsula. Smaller and darker than *calva*.

66. *Carea consimilis* spec. nov.

Forewing glossy violet-grey tinged with rufous; the inner and outer lines olive-brown, oblique and parallel, the outer slightly bent on vein 6; the inner

preceded by an olive cloud on inner margin, the outer followed by a similar tinge as far as subterminal line, beyond which the termen is paler; fringe metallic grey-brown; cell-spot small, black.—*Hindwing* whitish in basal area, tinged with orange-red terminally, the inner margin in ♂ slightly grey-tinged.

Ramboekers, Tondano, Celebes.

67. *Careades saturata* spec. nov.

♂. *Forewing* violet-grey washed with rufous, with very fine black speckling, especially towards apex; inner line olive, oblique with a slight indentation in cell to median vein, then curved and vertical, preceded by a faintly lustrous line; outer line blackish, shortly excurved below costa, otherwise straight and oblique from middle of costa to tornus, preceded by a fulvous band which thins out to a point, and followed by a faintly lustrous line edged by a darker one; an irregular dark subterminal line; two dark spots in cell, often very faint.—*Hindwing* deep coppery red, the inner margin broadly fuscous.

♀ with a bright plum-coloured suffusion; a diffused red patch at base of inner margin (present also but less conspicuous in the ♂); the lines redder; the inner oblique, the outer incurved below costa.

Another form of the ♂ has the ground-colour lustrous lilac-grey, with olive-green suffusion, and no rufous tints whatever.

All three examples from the Oetakwa River, Dutch New Guinea (A. S. Meek).

68. *Careades collineata* spec. nov.

Forewing pinkish fawn-colour, flushed with olive, and with a pale lustrous sheen in places, dusted finely throughout with dark; costa pale at base; lines deep olive, parallel; the inner, from one-fourth of costa to near middle of inner margin, oblique and slightly curved; the outer, from middle of costa to tornus, dark olive, followed by a lustrous line; subterminal line lustrous pinkish, preceded by a dark olive crenulate line from 6 to tornus; a large olive-green costal patch from before outer line to subterminal; a faint dark cell-spot.—*Hindwing* orange-red; fringe red to 2, then whitish; of inner margin reddish with the tips white.

A single ♂ from Bougainville, Solomon Islands (A. S. Meek).

69. *Careades dissocia* spec. nov.

♂. *Forewing* like *fulva*, but more uniformly olive-green; the costa marked with silvery only at the rise of the two lines; two slight dark spots in cell.—*Hindwing* wholly bright deep red; the red fringes of the legs enormous. ♀ quite different, fawn-grey with costal edge reddish; inner line dark oblique and slightly curved to middle of inner margin; outer line at two-thirds, slightly bent on subcostal, then vertical, separated by a pale line from a dark greyish-olive band, the irregular outer edge of which is followed by a broadly paler space before the darker olive shade along the termen; two dark spots in cell; hindwing bright orange-red; the fringes paler.

Eilanden River, S.E. Dutch New Guinea (type), also from Mt. Goliath, and Ninay Valley, Arfak Mts.

70. *Careades plana* spec. nov.

♀. Fawn-colour washed with rufous as far as outer line, and finely dusted with black atoms; inner line represented only by a double patch of black scales at one-third of inner margin; outer line double, reddish, indistinct, vertical but slightly concave outwards, from one-fourth of costa to one-fourth of inner margin, like the inner line marked with black scales on inner margin; two slight dark spots in cell; a faint reddish tinge along termen; fringe concolorous, tipped with white at tornus; hindwing orange-red in terminal half, much paler basewards; fringe red from apex to vein 2, then white; inner margin slightly olive-grey, the fringe white.

A single ♀ from Cedar Bay, Cooktown, N. Queensland.

71. *Careades neglecta* spec. nov.

♂. *Forewing* pinkish or greyish fawn-colour, with olive-brown suffusion in basal area, along inner margin, and beyond outer line; a reddish blotch on inner margin near base, not always visible; markings much as in *subrubra*, but less heavy.—*Hindwing* coppery red, with the inner margin blackish fuscous; ♀ suffused with bright fulvous; the inner line obliquely curved to near middle of inner margin, the outer double, bent below costa, then incurved and vertical; subterminal line blacker and more complete than usual, interrupted only in the middle; a rufous patch on inner margin near base; some blackish scaling on inner margin at end of the lines.

Oetakwa River, S.E. Dutch New Guinea, up to 3000 ft., October—December 1910 (A. S. Meek), type; Ninay Valley, Central Arfak Mts., 3500 ft., November 1908—January 1909.

72. *Careades approximata* spec. nov.

Forewing purplish plum-colour; the lines fulvous; a fulvous patch on inner margin near base; inner line widely outcurved from quite one-third of costa to middle of inner margin; indistinctly double; outer line double; the inner arm oblique and diffuse from middle of costa to vein 8, then right-angled and slightly oblique outwards; the outer arm straight; in the right wing the line is indented on the cell-fold; subterminal line well expressed.—*Hindwing* more orange-red than coppery.

A single ♀ from the Upper Setekwa River, S.E. Dutch New Guinea, September 1910 (A. S. Meek). It may be distinguished by the much narrower breadth of the median area between inner and outer lines.

SOME NEW PALAEARCTIC *NOCTUIDAE* IN THE TRING MUSEUM.*

BY THE LATE W. WARREN, M.A.

1. *Oederemia marmorata* spec. nov.

Forewing of ♂ bluish white in basal area, along costa to outer line, and in the three stigmata; costa marked with black spots at origin of lines; a black spot at base of costa; a subbasal black costal striga, and two near base of submedian interval; inner line black, double; the inner arm broken up into a small blotch on costa, a spot above median vein, and a fine line angled outwards on submedian fold and inwards on vein 1; the outer arm irregularly dentate; claviform stigma a white lunule, touching the lower tooth of inner line; orbicular round, confluent with a long oval lying below median vein; reniform a large lunule; all three stigmata outlined in black; the median area round them suffused with pale olive brown; outer line double, lunulate-dentate, filled up with bluish white, the outer arm obscure, but followed by irregular dark blotches; terminal area bluish grey, with an indistinct pale subterminal line and a brownish blotch on termen beyond cell; a row of fine black terminal lunules; fringe white mottled with dark.—*Hindwing* pale grey with dark terminal line; fringe pale slightly mottled with dark.—♀ with all the brown and black shadings intenser; the long oval white blotch beneath the orbicular stigma quadrate along median vein, produced below to an angle touching outer line at vein 2, the claviform also angled and confluent with it; the terminal area bluer.

Dorsum whitish in ♂, dark grey in ♀.

Kuku Nor, Tibet, June.

2. *Euplexia albiclausa* spec. nov.

Closely resembling *E. chrysochlora* Hmps., from India, but sufficiently distinct; the green of the ground-colour is greyer, less yellow; the reniform stigma is filled in with dark olive instead of pale green and whitish scales; it is constricted at middle, and edged on both sides with white, whereas in the Indian species the outer edge is not white, and the white inner edge forms an isolated lunule, separated by a narrow deep olive space from the reniform proper; the terminal area is much powdered with white scales, which at the apex form a blotch; in other respects it agrees with *chrysochlora*.

1 ♂ from Wa-ssu-kow, 5000 ft., taken by a native collector in July 1890, and 1 ♀ from Ta-Chien-lu, 8300 ft., taken by Pratt, July—August 1890.

3. *Cortyta sabulifera* spec. nov.

Forewing sandy grey, slightly tinged with brownish in basal half; the basal area and costal portion of median area darker grey; lines very indistinct, double, filled in with pale; inner line bluntly angled on submedian fold; the outer marked with black only beyond cell, and much less indented than in *fasciolata*, not bent inwards to below the reniform stigma and forming a small outward tooth on vein 2, but gradually incurved and insinuate across submedian fold, reaching inner margin nearer anal angle, the median space being consequently broader; reniform

* See footnote, p. 210.

stigma obsolete; subterminal line paler, more sharply indented below the angle at vein 7, making that angle and the one below 4 appear more prominent.—*Hindwing* paler, with the lines less marked; underside pale, without markings or dusting, except a dark apical shade.

Head, thorax, and abdomen pale greyish ochreous, the patagia darker, like basal area of forewing.

Described from a single ♀ from Nakheila, R. Atbara, Lower Egypt, taken by Mr. N. C. Rothschild in February 1904, along with a long series of *C. fasciolata*, among which it was overlooked. In breadth of median area and shape of lines it agrees with *C. dispar* Püng. from Syria, but in coloration it is quite different.

ON THE FORMS OF *RHODINOCICHLA ROSEA*.

BY ERNST HARTERT

SEVERAL subspecies of *Rhodinocichla rosea* have recently been separated, but the Venezuelan form has always been united with the one from Colombia. This is not correct, as the former is considerably paler, more greyish on the upper-side, and smaller, the rufous of the throat and breast of the female lighter. In fact the Venezuelan form is in the coloration of the upperside like *Rh. rosea schistacea*, from Western Mexico, but it is smaller and the throat and breast are considerably paler. The wings of our Venezuelan specimens measure, in the male, 81–84, ♀ 77–84, those of Colombian (Bogotá), males 89–93, ♀ 83, while males of *Rh. rosea schistacea* have wings of 87–91, females 85–89 mm.

Rhodinocichla rosea was first described as *Furnarius roseus* by Lesson, *Illustr. Zool.* pl. 5 and text (1832–43—"San José, Brazil"). Lafresnaye, in his critical notes on types in the Paris Museum (*Rev. Zool.* viii. 1845, p. 10) showed that the type did not come from Brazil, but from Colombia. In 1849 Hartlaub described a female from Caracas, Venezuela, collected by M. A. Rojas, in the Hamburg Museum, as "*Turdus vulpinus*" (*Rev. Zool.* 1849, p. 276). Not only does the name clearly refer to a Venezuelan bird, but the description of the upper surface as "olivaceo-cinerascentibus" absolutely fits the Venezuelan race, while the back of the Colombian race would be described as "nigro-schistaceus." Therefore the name *vulpinus* must be accepted for the Venezuelan Rose-breasted Mocking Thrush. The species would, so far, be separable into the following subspecies:

Rhodinocichla rosea rosea (Less.): Colombia.

Rh. rosea eximia Ridgw.: Panama to Costa Rica.

Rh. rosea vulpina (Hartl.): Venezuela (Caracas; from Caripé, San Esteban, Tucuyo, and Ejido, collected by Mocquerys, in the Tring Museum).

Rh. rosea schistacea Ridgw.: Western Mexico.

There is, of course, no reason why *schistacea* should be treated as a species and named binomially, as Mr. Ridgway (*B. North and Middle America*, ii. p. 772) has done. *Rh. rosea vulpina* is quite as different from *Rh. rosea rosea* as is *schistacea*, and all the known forms agreeing in their main features, differing only slightly in tint of coloration and size, and representing each other in their distribution, the only reasonable treatment is to name them trinomially, as above.

DESCRIPTIONS OF NEW SPECIES OF THE FAMILY
ARCTIADAE IN THE BRITISH MUSEUM.

BY SIR GEORGE F. HAMPSON, BART., F.Z.S., ETC.

AS the Supplementary Volume II. of the *Catalogue of Moths* in the British Museum will not be published for some time, owing to the war, it is advisable to give the following description of the new species which would have been included in it. The numbers refer to the position of the species in the classification adopted, and the references to the plates are to the unpublished plates of the volume.

1199 *a.* **Robinsonia catasticta** n. sp. (*Lep. Phal., Pl. 42. f. 17*)

♂. Head and thorax white, the back of head yellow, the tegulae and patagia at edges and the dorsum of thorax with fulvous-brown streaks; antennae black; palpi with some yellow at base, the second and third joints with brown bands; pectus with some yellow in front; legs streaked with brown; abdomen orange with dorsal series of white points, the ventral surface white.—*Forewing* fulvous brown; a yellowish streak below the costa from near base to beyond middle; an oblique quadrate white patch in and below middle of cell; a white patch at base of inner margin and white streaks above and below middle of vein 1; an oblique quadrate white patch beyond the cell; a subapical white patch with bidentate outer edge; a subterminal white point on vein 5, spot on vein 4, elongate spot on vein 2 with small spot below its extremity, elongate spot in submedian interspace and streak on terminal part of inner margin.—*Hindwing* pure white. Underside of forewing white, with the costal edge brown and some brown on costa and termen towards apex.

Hab. Peru, Yahuar Mayo, 1 ♂ type. *Exp.* 34 mill.

1227 *g.* **Azatrephes argyrotis** n. sp. (*Lep. Phal., Pl. 45. f. 1*)

Head, thorax and abdomen silvery white; the palpi, upper part of frons, antennae, except basal joint, back of head, tips of tegulae, outer edge of patagia, and a patch on metathorax pale brownish red; forelegs tinged with red, the tibiae and tarsi banded with red-brown.—*Forewing* silvery white, the basal and inner areas striated with silver and pale brownish red; the costa red-brown, expanding into two small triangular marks on basal area; an oblique red-brown fascia from costa before middle, where it expands into a triangular patch, to termen at submedian fold, a large semihyaline patch beyond it extending from below the costa to vein 2 and to the subterminal line with a double postmedial series of red-brown points on the veins; subterminal line red-brown, curved and waved, ending at the oblique fascia; the veins of terminal area slightly streaked with red-brown; a red-brown bar before the termen between veins 5 and 4; cilia red-brown, whitish at tips.—*Hindwing* silvery white. Underside silvery white, except the semihyaline patch of forewing.

Hab. Peru, Yahuar Mayo, 1 ♂, 1 ♀ type. *Exp.*, ♂ 32, ♀ 38 mill.

2018 *h*. **Paranerita orbifer** n. sp. (*Lep. Phal.*, *Pl.* 45. *f.* 3)

♀. Head yellow; antennae red-brown except at base; frons red-brown with white bar below; palpi yellow, crimson at tips; thorax red-brown; pectus and legs yellow, the fore tibiae and femora tinged with crimson in front; abdomen crimson, the extremity and ventral surface yellowish white.—*Forewing* with the basal and inner areas purplish red-brown, extending on costa to before middle, where there is some scarlet beyond it, then obliquely curved and sinuous to termen above tornus; the rest of wing pale yellow, with a large round purplish red-brown subapical patch from below costa to below vein 5, some scarlet above it on costa.—*Hindwing* yellow, the terminal area purplish red-brown from vein 3 to tornus. Underside of forewing with the subapical patch extending to costa; hindwing wholly yellow.

Hab. **Colombia**, Choko Prov., Condoto (Spurrell), 1 ♀ type. *Exp.* 28 mill.

1544 *f*. **Neritos discophora** n. sp. (*Lep. Phal.*, *Pl.* 45. *f.* 9)

Hindwing of male with the costa lobed to about three-fourths of wing; forewing with veins 10–11 stalked, an elongate fovea below the cell; antennae pectinate.

Head, tegulae and shoulders orange, the antennae, except at base, and thorax grey-brown; palpi black at tips; abdomen orange, the ventral surface ochreous-yellow.—*Forewing* pale grey-brown, the veins streaked with fuscous brown; a rather oblique elliptical white patch beyond the cell between veins 6 and 3.—*Hindwing* grey-brown with a rather ill-defined white patch in, below and beyond end of cell, the inner area whitish in male. Underside of forewing darker grey-brown, except the white patch; hindwing with the basal and inner areas white.

Hab. **Peru**, Carabaya, R. Huacamayo, La Union (Ockenden), 2 ♂♂, 1 ♀ type. *Exp.* 40 mill.

1255 *e*. **Automolis monostidza** n. sp. (*Lep. Phal.*, *Pl.* 46. *f.* 2)

♀. Head and thorax white with some yellow and crimson scales especially on thorax, the tips of tegulae, upper edge of patagia at middle and outer edge towards extremity crimson; the mesothorax with pair of small black spots; antennae fuscous brown except at base; frons with brown bar above; palpi grey-brown except basal joint, the second joint black above; pectus white, crimson in front and below the wings; legs grey-brown in front, the tibiae black at extremities, the fore coxae with crimson patches; abdomen crimson with white segmental lines, the extremity and ventral surface white.—*Forewing* yellow-buff, the basal and costal areas and inner margin white; some crimson at base of inner margin; the interspaces of basal area with grey-black streaks, reduced to subbasal spots above and below vein 1 and the two streaks in the cell longer; an incurved medial band formed by grey-black streaks below costa, bars on each side of the discocellulars and patches below the cell divided by white streaks on the veins, the band produced at costa and defined on each side by white below the cell; a small rather elongate grey-black subterminal spot defined on inner side by white above vein 5; the termen and cilia white.—*Hindwing* white with a streak of crimson suffusion in submedian interspace. Underside white; forewing with the band showing faintly

and with slight blackish marks on each side of the discocellulars, the subterminal spot black.

Hab. **Peru**, Yahuar mayo, 1 ♀ type. *Exp.* 42 mill.

1344 a. **Hyperthaema perflammans** n. sp. (*Lep. Phal.*, Pl. 48, f. 8)

♂. Head, thorax and abdomen brilliant crimson-scarlet; antennae black-brown; forelegs and mid and hind tibiae and tarsi black, the fore femora and the tibiae with slight white streaks; abdomen with small lateral and sublateral black spots except towards base.—*Forewing* brilliant crimson-scarlet, the veins streaked with blackish; a subbasal white point on median nervure; a rather crescentic antemedial white spot defined by black in submedian interspace and a similar but rather ovate postmedial spot between veins 6 and 5; cilia brown.—*Hindwing* white; some pale crimson hair at base; the costal and terminal areas fuscous brown, the former expanding into a triangular patch at end of cell, the latter expanding on apical area and at inner margin to before middle; the veins beyond lower angle of cell streaked with brown. Underside of forewing fuscous brown, with white spots as above.

ab. 1. Forewing with the antemedial spot larger, the postmedial spot more triangular.

Hab. **Ecuador**, Paramba (Rosenberg), 1 ♂; **Peru**, El Porvenir, 2 ♂♂ type, Chanchamayo, 1 ♂. *Exp.* 46–50 mill.

1374 c. **Pelochyta dorsicincta** n. sp. (*Lep. Phal.*, Pl. 49, f. 13)

♂. Head and thorax greyish brown, the frons with pair of black points and black point above, the vertex of head, basal joint of antennae and tegulae with black points, the patagia with three black points above shoulders; palpi with black patches at side of second joint and the third joint blackish; pectus and femora fulvous brown; abdomen ochreous yellow, the basal segments dorsally clothed with grey-brown hair, the terminal segments with black dorsal bands, lateral black spots on four terminal segments and a sublateral series, the ventral surface with black spots on second and third segments and bands on three following segments.—*Forewing* pale reddish brown, the veins and a streak in the cell fuscous; the termen and cilia rather darker brown.—*Hindwing* rather paler reddish brown, the veins with darker streaks. Underside pale reddish brown.

ab. 1. Head between antennae and neck fulvous yellow.

Hab. **W. Colombia**, San Antonio (Palmer), 2 ♂♂ type. *Exp.* 46–56 mill.

1375 b. **Pelochyta albipare** n. sp. (*Lep. Phal.*, Pl. 49, f. 14)

♀. Head, tegulae and base of patagia yellowish, the frons blackish brown, the vertex of head and tegulae with black spots, the patagia with two black spots above shoulders; thorax and abdomen grey-brown; basal joint of palpi yellow at side; pectus yellow; fore coxae yellow with brown patches; abdomen with the sides and ventral surface yellow, lateral series of blackish spots.—*Forewing* pale red-brown; black points at base of costa and median nervure; a small subbasal black spot below median nervure with a minute streak below it.—*Hindwing* with the basal half yellowish white, the terminal half pale red-brown; the underside with the inner area yellowish white to near tornus.

Hab. **Peru**, 1 ♀ type. *Exp.* 52 mill.

1423 *b.* **Opharus discisema** n. sp. (*Lep. Phal.*, Pl. 51. ff. 12 ♂, 13 ♀)

♂. Head and thorax greyish ochreous mixed with red-brown, the vertex of head with slight dark-brown streak, the patagia with more red-brown at base and slight dark-brown streaks towards extremities; antennae red-brown, dark brown at base; palpi black-brown, the first and second joints ochreous in front and at extremity; pectus and legs ochreous mixed with red-brown; abdomen orange-yellow, the basal half dorsally clothed with red-brown hair, the terminal segments with small dorsal black spots, the ventral surface with red-brown mixed.—*Forewing* ochreous tinged with red-brown and striated and in parts suffused with red-brown; the base greyish with dark brown points at base of costa and vein 1, its outer edge angled at median nervure and defined by dark brown to submedian fold; a narrow maculate grey antemedial band defined by some dark brown, oblique to median nervure, then inwardly oblique and ending at vein 1, crossed by a dark brown streak in submedian fold and with a dark brown streak beyond it in the cell; a medial series of grey-white spots, rather oblique to median nervure, then inwardly oblique and ending above vein 1; a grey-white band across end of cell, defined by some dark brown, extending to costa, produced on inner side to a point in discal fold and to a short streak on outer side ending in a curved mark on the discocellulars; a black-brown patch beyond the cell before the postmedial band, which is grey-white defined by dark brown, sinuous to vein 5 and slightly produced at vein 6, then oblique, reduced to slight spots to vein 2 and angled inwards in submedian fold; subterminal band narrow, whitish defined by dark brown, excurved below vein 7, angled inwards at vein 5 and excurved below it, then oblique, reduced to small spots and angled inwards in submedian fold; a terminal series of small rather tridentate dark brown spots.—*Hindwing* dark reddish brown, the base whitish. Underside of forewing reddish brown, the costa and terminal area tinged with ochreous and striated with red-brown, the medial, postmedial, and subterminal bands with the whitish markings on subcostal area only, then indistinct and red-brown; hindwing with the costal area tinged with ochreous and with three ill-defined red-brown bands on costal area, and a maculate subterminal band from costa to vein 3.

♀. Head and thorax ochreous yellow slightly mixed with red-brown; abdomen with small patch of red-brown hair at base of dorsum.—*Forewing* ochreous yellow striated with rufous, no dark points at base, the maculate whitish bands broader and continuous, the curved white discoidal band produced to a point on vein 5, the dark patch beyond the cell angled inwards below its extremity, the subterminal band defined on outer side by dark red-brown spots.—*Hindwing* ochreous yellow tinged with red-brown, a diffused brown discoidal lunule, a subterminal band with waved edges from below costa to submedian fold, excurved between veins 5 and 4; the underside similar but with the markings indistinct.

Hab. W. Colombia, San Antonio (Palmer), 2 ♂♂, 2 ♀♀ type. *Exp.* ♂ 44, ♀ 56 mill.

1534 *b.* **Agoraea phaeophlebia** n. sp. (*Lep. Phal.*, Pl. 56. f. 5)

♀. Head, tegulae, and patagia orange-yellow, the dorsum of thorax yellowish white; antennae yellowish white, the branches blackish; fore coxae and femora orange-yellow, the tibiae and tarsi brownish white; pectus, mid- and hindlegs yellowish white; abdomen orange-yellow, the base and ventral surface yellowish white.—*Forewing* yellowish white, the veins, discal fold in the cell and submedian

fold finely streaked with fuscous brown.—*Hindwing* yellowish white, the veins of terminal area slightly streaked with brownish.

Hab. Venezuela, Merida, 1 ♀ type. *Exp.* 36 mill.

1595 a. **Virbia flavifurca** n. sp. (*Lep. Phal.*, Pl. 56. f. 21)

Virbia medarda Hmps., *Cat. Lep. Phal. B. M.* iii. p. 200 (part) nec Stoll.

♀. Head and thorax rufous; pectus orange-yellow; abdomen with dorsal black stripe with wavy edges, the sides orange-yellow, the ventral surface red-brown.—*Forewing* uniform rufous with a fulvous tinge.—*Hindwing* black; a broad orange-yellow fascia in and below the cell from base to near termen, towards which it widens somewhat, its extremity rounded; an orange-yellow fascia on inner margin, expanding on termen to vein 1; a small subterminal orange-yellow spot in submedian fold. Underside of forewing black-brown, the costa rufous, an orange-yellow wedge-shaped patch in and just below the cell to well beyond it, where it expands to just below vein 2, its extremity obliquely curved and slightly sinuous, a minute black discoidal spot; hindwing with the orange-yellow extending to costa at base.

Hab. Venezuela (Dyson), 1 ♀ type. *Exp.* 40 mill.

1679 c. **Maenas intacta** n. sp. (*Lep. Phal.*, Pl. 57. f. 27)

♀. Head and thorax pure white; antennae blackish except at base; palpi with the second joint brown behind; femora yellow above, the fore femora with brown streak on inner side, the mid and hind tibiae and the tarsi banded with black-brown; abdomen orange-yellow, the base, extremity, and ventral surface white, a dorsal series of small black spots on the yellow segments and lateral series of small black spots. Wings pure white and somewhat semihyaline, the hindwing with slight blackish discoidal point.

ab. 1. Frons with some yellow above; tegulae edged with yellow; forewing with antemedial black points below costa and cell and above inner margin, a discoidal point and postmedial points above and below vein 1; hindwing with distinct black discoidal point.

Hab. N. Nigeria, Kano (F. G. Brown), 1 ♀ type; Bauchi Prov. Kabwir (G. T. Fox), 1 ♀. *Exp.* 44 mill.

1730 a. **Diacrisia diversata** n. sp. (*Lep. Phal.*, Pl. 58. f. 15)

♀. Head and thorax white, with a slight creamy tinge; the tegulae with black spots in one specimen, the shoulders with black spots, the patagia with short curved black streak, the prothorax with short black streak; antennae black; palpi banded black and yellowish; pectus and legs white, the fore coxae with brown patches, the femora yellow above, the fore and mid tibiae streaked with brown, the hind tibiae with brown band towards extremities, the tarsi banded with brown; abdomen orange-yellow, the base, extremity and ventral surface white, dorsal and lateral series of black spots.—*Forewing* white with a slight creamy tinge and series of irregular grey spots defined by black-brown; a minute black spot at base of cell, a subbasal spot below costa and two below the cell, with sometimes some points in the cell, an elongate grey and black spot beyond them below the cell; an oblique antemedial series of three irregular spots from costa to below the cell and spots above and below vein 1; two elongate medial spots below costa and spots

above and below vein 1 ; a very irregular patch in and below end of cell, emitting a streak between veins 4 and 3 to the subterminal series where it forks ; a small spot in upper end of cell, spots above and below base of vein 6 and a spot above them on costa ; a postmedial spot on costa with slight mark below it, spot above vein 4 and spots above and below vein 1 ; an oblique subterminal series of spots from costa to vein 4, a spot on vein 2, and spots above and below vein 1 ; short streaks before termen above and below vein 5, above vein 4 and below 3 ; a series of small spots on termen and cilia.—*Hindwing* semihyaline white, with a small blackish discoidal spot and subterminal spots above vein 5 and below 2 ; the underside with spot or wedge-shaped mark from middle of costa and sometimes a slight postmedial bar from costa.

Hab. Somaliland (Drake-Brockman), 2 ♀ ♀ type. *Exp.* 46–52 mill.

1730 *e. Diacrisia yemenensis* n. sp. (*Lep. Phal., Pl.* 58. *f.* 17)

♂. Head white tinged with yellow, a slight brown streak on vertex, the antennae brown, the sides of frons and palpi black ; thorax fulvous yellow with black spots on the tegulae, curved stripes on shoulders and patagia, and three streaks on prothorax ; legs brown and whitish, the femora orange-yellow above ; abdomen orange with dorsal and lateral series of blackish spots, the ventral surface whitish.—*Forewing* creamy white ; an irregular subbasal maculate black-brown band ; an antemedial maculate black-brown band from costa to below the cell, a spot above vein 1, and elongate spot below it ; a large conical patch with waved edges from costa above end of cell to below the cell, and obliquely placed spots below origin of vein 2 and above vein 1 ; a large conical patch irrorated with white and with waved edges from apical part of costa to vein 4 and an oblique band with waved edges from vein 3 to inner margin ; an incurved subterminal series of spots from vein 5 to tornus ; a series of spots on the termen and cilia.—*Hindwing* semihyaline, yellowish white, the inner area golden yellow ; a small blackish discoidal spot, subterminal spot in discal fold, and terminal spot at vein 1 ; the underside with small medial blackish spot below vein 8.

Hab. Arabia, Yemen (Bury), 1 ♂ type. *Exp.* 42 mill.

1739 *a. Diacrisia geminipuncta* n. sp. (*Lep. Phal., Pl.* 58. *f.* 20)

♂. Head and thorax ochreous, the tegulae and shoulders with black spots ; the patagia and prothorax with short black streaks ; antennae black ; palpi with black spot on first joint, the second and third black at sides ; fore coxae with blackish patches, the fore femora and fore and mid tibiae striped with black, the hind tibiae with black spots at base and near extremity, the tarsi black ringed with ochreous white ; abdomen ochreous white with dorsal, lateral, and sublateral series of black spots.—*Forewing* ochreous ; a black point at base of cell ; rather elongate subbasal spots on costa and below the cell, a small spot above vein 1 and spot nearer the base on vein 1 ; antemedial spots on costa, in cell, above vein 1 and on inner margin ; a similar series of medial spots, the spots below the cell and on inner margin rather elongate ; a spot on costa above end of cell, spots in and beyond upper angle, points in lower angle and beyond it above and below vein 3, points above and below median nervure near origin of vein 2, and small spots above and below vein 2 and above vein 1 ; a wedge-shaped postmedial black mark on costa with point below it, and spots or points above and below veins 5, 4, 2, and 1 ; an

oblique subterminal maculate bar from costa near apex, small spots above and below veins 6, 5, 4, 3 and 1, and a spot above vein 2, the spots at vein 5 nearer the termen ; a terminal series of small spots.—*Hindwing* ochreous white ; the underside with small medial and postmedial spots above and below vein 8, and a slight subterminal spot below vein 2.

Hab. **Abyssinia** (Drake-Brockman), 1 ♂ type. *Exp.* 44 mill.

1755j. **Diacrisia rhodochroa** n. sp. (*Lep. Phal., Pl. 59, f. 9*)

♂. Head white ; palpi deep brown, the basal joint crimson ; lower part of frons deep brown ; antennae black ; thorax pale flesh-pink, the tegulae crimson below ; pectus and legs deep brown, some crimson below base of wings, the fore coxae with crimson patches, the mid and hind coxae whitish, the femora crimson above ; abdomen deep crimson with dorsal series of black points except at base and lateral and sublateral series, the anal tuft and ventral surface white.—*Forewing* ochreous tinged with pale flesh-pink ; a small black spot at base ; antemedial spots below costa and above vein 1 and a point below vein 1 ; a black point at upper angle of cell ; a faint diffused brownish postmedial line, excurved to vein 5, then very oblique and with pairs of small black spots on each side of veins 3, 2, and 1.—*Hindwing* pale semihyaline flesh-colour, the inner area tinged with crimson ; the underside with the costal area tinged with crimson, a black striga on upper discocellular.

Hab. **Java**, Nongkodjadja (Cockayne), 1 ♂ type. *Exp.* 52 mill.

1770f. **Diacrisia lentifasciata** n. sp. (*Lep. Phal., Pl. 60, f. 5*)

♂. Head and thorax fulvous orange, the tegulae and patagia grey, edged with fulvous orange ; antennae blackish, the shaft greyish above ; palpi blackish at sides ; fore coxae and femora streaked with blackish, the tibiae on outer side and the tarsi blackish ; abdomen fulvous orange with dorsal and lateral series of black spots and sublateral blackish stripe except at base and extremity.—*Forewing* orange-yellow, the costal edge pale ; some pale greyish below base of costa ; faint greyish stripes below the cell and vein 2 and beyond the cell in discal fold to near termen ; cilia pale at tips.—*Hindwing* yellowish white, the inner area deeper yellow. Underside yellowish white, the costal area of both wings orange-yellow.

Hab. **Mashonaland**, Salisbury (Marshall), 2 ♂ ♂ type. *Exp.* 44 mill.

1770g. **Diacrisia sinefascia** n. sp. (*Lep. Phal., Pl. 60, f. 6*)

Head and thorax pale yellow, with some orange-yellow at tips of tegulae and base of patagia ; antennae black ; palpi blackish at sides ; pectus orange ; fore coxae with blackish patches, the fore femora streaked with blackish, the fore and mid tibiae blackish on outer side, the hind tibiae blackish at base and with blackish stripe towards extremities, the tarsi blackish ; abdomen orange with dorsal series of black bars and lateral and sublateral series of spots except at base and extremity, the ventral surface yellowish white.—*Forewing* uniform pale yellow.—*Hindwing* pale yellow, with some orange-yellow hair on inner area.

Hab. **N. Nigeria**, Minna (Macfie), 1 ♀, Zungeru (Macfie), 1 ♀ ; **Mashonaland**, Salisbury (Marshall), 2 ♂ ♂ type. *Exp.* 42–52 mill.

1833 *b.* **Amsacta nivea** n. sp. (*Lep. Phal., Pl. 61. f. 11*)

♂. Head and thorax pure white; antennae black-brown, except basal joint; palpi and legs yellow; abdomen orange-yellow with dorsal, lateral, and sublateral series of small black spots except on basal segment, the ventral surface white. Wings silvery white, the costal edge of forewing yellow.

Hab. **E. Transvaal**, Karino (Cooke), 1 ♂ type. *Exp.* 32 mill.

1833 *e.* **Amsacta ugandae** n. sp. (*Lep. Phal., Pl. 61. f. 14*)

♀. Head and thorax white; antennae black below; head behind and tegulae slightly edged with yellow; patagia and metathorax with small black spots; fore and mid femora and tibiae, the mid tibiae and tarsi streaked with black, the fore and hind tarsi with black spots; abdomen dorsally orange, the two basal and the anal segment white, the orange segments with dorsal white patches and black spots, a lateral series of black spots, and sublateral spots on four medial segments.—*Forewing* creamy white, the costal edge yellow; a subbasal black spot in cell, antemedial points below costa in upper part of cell, below the cell and above vein 1; small spots at angles of cell with points in and beyond lower angle; two points below vein 2 towards its origin; a postmedial series of points on each side of the veins, excurved to vein 4, then incurved; a subterminal series of small spots on each side of the veins from costa to vein 2, the spot below vein 6 and the spots at vein 2 nearer the base; a subterminal point in submedian fold; a series of points just before termen from below apex to above vein 3.—*Hindwing* pure white, rather thinly scaled; the underside with small black discoidal spot.

Hab. **Uganda**, Entebbe (Neave), 1 ♀ type. *Exp.* 48 mill.

1833 *f.* **Amsacta atricrures** n. sp. (*Lep. Phal., Pl. 61. f. 15*)

♂. Head and thorax pale brownish ochreous, the patagia with black points near base; antennae black-brown; palpi black-brown except at base; forelegs and the mid and hind tibiae and tarsi black-brown; abdomen orange with dorsal and lateral series of minute black spots on third to anal segments.—*Forewing* pale brownish ochreous; a small subbasal black spot on costa; an antemedial black spot on costa with point below it, and small spots above and below vein 1; a postmedial black point below costa.—*Hindwing* orange-yellow. Underside of both wings orange-yellow, the hindwing with black discoidal point.

Hab. **British E. Africa**, Pemba I. (Burt), 1 ♂ type. *Exp.* 38 mill.

1859 *a.* **Estigmene melanocera** n. sp. (*Lep. Phal., Pl. 62. f. 1*)

♂. Head and thorax cream-colour; antennae black; palpi black at tips; shoulders and patagia with black spots; pectus yellow; fore coxae with black patches, the forelegs black above, the mid tibiae and tarsi black above, the extremity of hind femora, the basal half of tibiae above and the tarsi black; abdomen orange-yellow with dorsal and lateral series of black spots except on basal segment and sublateral points on three medial segments.—*Forewing* cream-coloured; a black spot in base of cell; an antemedial spot on costa and point below the cell; a medial spot on costa with small spot below it, and spots above and below vein 1; a point below lower angle of cell on left side only; a postmedial spot on costa with point

beyond its extremity, and points above and below vein 1.—*Hindwing* orange-yellow with small black discoidal spot; cilia whitish.

Hab. **British Central Africa**, Zomba (Old), 1 ♂ type. *Exp.* 38 mill.

1897 *a.* **Pericallia coorgensis** n. sp. (*Lep. Phal.*, Pl. 62. f. 12)

♀. Head white tinged with crimson, the antennae, frons and palpi dark brown, the antennae with the basal joint crimson and some white at base of shaft; thorax dark brown, the tegulae white with quadrate brown patch and some crimson below, the patagia white with brown spot; coxae with crimson patches, the femora crimson above; abdomen crimson with dark spot at base, then a series of bands and a patch on anal segment, the ventral surface dark brown confluent with lateral series of spots and with slight ventral scarlet bars on median segments.—*Forewing* chocolate-brown; a white fascia from base below the cell, beyond the lower angle obliquely bent upwards to costa, extending to inner margin and with a slight crimson tinge at base, emitting projections into the cell near base and before and at middle and on lower side before and beyond middle, the oblique part with slightly waved edges and with a slight crimson tinge at costa; a wedge-shaped white patch slightly tinged with crimson on apical part of costa and a semicircular patch at middle.—*Hindwing* crimson with slight brown marks at and above upper angle of cell and subterminal chocolate-brown patches conjoined by bars below costa, at middle, and above tornus, the apical and tornal patches touching the termen. Underside of forewing with the fascia crimson except at costa; hindwing with irregular brown patch at middle of costa connected with the apical patch which extends along the costa for a short distance.

Hab. **Madras**, Coorg, Somwarpet (Hannington), 1 ♀ type. *Exp.* 50 mill.

1926 *b.* **Ecpantheria obsolescens** n. sp. (*Lep. Phal.*, Pl. 63. f. 9 ♂, 10 ♀)

♂. Head and thorax brownish white, the tegulae with small blackish spots, the patagia with elongate annuli, the pro- and metathorax with paired annuli; antennae black except at base; frons at sides and above black-brown; fore femora at extremities, the mid and hind tibiae at base and extremities, and the tarsi black-brown; abdomen dark brown, the medial segments glossed with blue and irrorated with whitish, the extremity and ventral surface brownish white, dorsal orange spots on medial segments and lateral maculate fasciae.—*Forewing* brownish white, the terminal area somewhat semihyaline except towards tornus; subbasal, antemedial, medial and postmedial series of rather faint brown annuli, oblique from below costa, and two subterminal annuli on inner area.—*Hindwing* white, the veins brownish, the inner area with fascia of dark brown hair. Underside of forewing brownish white; hindwing with ante- and postmedial brown annuli on costa.

♀. Thorax without markings.—*Forewing* with the terminal area more thickly scaled, a fuscous discoidal bar and complete subterminal and terminal series of annuli.—*Hindwing* with less dark brown hair on inner area.

Hab. **Peru**, Yahuar Mayo, 1 ♂, 1 ♀ type; Chaquimayo (Watkins), 1 ♀. *Exp.* ♂ 54, ♀ 58 mill.

1975 *d.* **Pygarctia poliochroa** n. sp. (*Lep. Phal.*, Pl. 64. f. 10).

♂. Head and thorax brownish grey, the back of head scarlet, the metathorax with slight paired scarlet marks; antennae black-brown; palpi scarlet at base;

pectus with some scarlet below the wings ; abdomen scarlet with dorsal and lateral series of small black spots, the ventral surface reddish brown.—*Forewing* brownish grey, the costal edge white, the cilia white at tips.—*Hindwing* white, the veins and inner and terminal areas more or less strongly tinged with brown ; the underside white, the costal area grey-brown.

♀. Hindwing uniform brownish grey.

Hab. **U.S.A. Arizona**, Oracle (Oslar), 2 ♂♂, 2 ♀♀ type. *Exp.* 32 mill.

2070 a. **Carcinarctia laeliodes** n. sp.

♂. Head and thorax scarlet mixed with some brown ; antennae with the shaft whitish ; palpi black ; fore and mid tibiae suffused with black ; the tarsi black ; abdomen scarlet with blackish bands except at base.—*Forewing* scarlet irrorated with brown ; an obscure blackish subterminal spot at discal fold.—*Hindwing* paler scarlet ; a black discoidal spot and a slight subterminal spot at discal fold. Underside scarlet ; forewing with the costa irrorated with brown, a slight blackish discoidal spot ; hindwing with black discoidal lunule.

Fore tibiae with the claws small.

Hab. **British E. Africa**, Aberdare Mts., 10,000 ft. (Woosnam), 1 ♂ type. *Exp.* 40 mill.

2115 d. **Rhodogastria carneola** n. sp.

Head and thorax ochreous flesh-colour, the basal joint of antennae and neck crimson, the basal joint of antennae, vertex of head, tegulae and patagia with black spots, the pro-, meso- and metathorax with paired black spots ; antennae pale crimson ringed with brownish ; frons with black spots at middle and sides ; palpi crimson with black bands at extremities of second and third joints ; legs crimson with black spots at sides of fore coxae ; abdomen crimson, the ventral surface pale flesh pink, lateral and sublateral series of black spots.—*Forewing* ochreous flesh-colour ; a diffused fuscous-brown medial line ; a large semihyaline patch beyond the cell between veins 7 and 2 ; its outer edge excurved between veins 5 and 2.—*Hindwing* pale flesh-pink, semihyaline except the veins and margins. Underside of forewing with the cell and area below it also semihyaline, defining a flesh-pink discoidal bar.

Hab. **German E. Africa**, Moschi, 1 ♀ ; **British C. Africa**, Mt. Mlanje (Neave), 1 ♂ type. *Exp.* 54 mill.

2116 b. **Rhodogastria thermochroa** n. sp.

♂. Head and thorax pale rufous ; palpi with the basal joint pale crimson with two black spots, the second and third black, pale crimson at base ; frons pale crimson with black spot above ; antennae black, the basal joint pale crimson, black in front ; vertex of head with black spot ; tegulae with black spots at middle and sides ; shoulders with two black spots ; tegulae at base, pro-, meso- and metathorax with paired black spots ; pectus and legs pale crimson, the forelegs above and the mid tibiae and tarsi streaked with fuscous ; abdomen yellow with lateral and sublateral series of small black spots.—*Forewing* pale rufous ; three minute black spots at base ; an oblique postmedial semihyaline band from below costa to

vein 3.—*Hindwing* pale red-brown, the cell and interspaces just beyond it semihyaline.

Hab. **British E. Africa**, S. Kakumega Forest, Yala R. (Neave), 1 ♂ type. *Exp.* 48 mill.

2120 *l.* **Rhodogastria fuscivena** n. sp.

♂. Head and thorax ochreous whitish; palpi crimson with black spot on first joint and bands on second and third joints; frons with black spot above; antennae black, crimson towards base, the first joint black in front; vertex of head with black spot; tegulae with black spots at middle and sides; shoulders with two black spots; patagia with two black spots near base and one near tips; pro-, meso- and metathorax with paired black spots; pectus and legs crimson, the forelegs ochreous white in front; abdomen ochreous whitish, the terminal half dorsally tinged with crimson, lateral and sublateral series of small black spots.—*Forewing* brownish white, the veins streaked with fuscous, the discocellulars whitish; three minute black spots at base.—*Hindwing* brownish white.

Hab. **Uganda**, Toro, Mpanga Forest (Neave), 1 ♂ type. *Exp.* 56 mill.

2127 *a.* **Ilemodes astriga** n. sp.

♀. Head and thorax silvery white with small paired black spots on pro- and metathorax; antennae brownish except towards base; frons, palpi, pectus, legs and abdomen yellow, the fore tibia and tarsi tinged with brown.—*Forewing* silvery white, with a minute black discoidal point.—*Hindwing* pale yellow. Underside of forewing pale brown, with a white fascia from below costa towards base to costa towards apex, the inner area yellow; hindwing with small black discoidal spot.

♂. Forewing with the costal edge fulvous yellow, blackish towards base; the underside fulvous yellow, with the terminal area brownish grey.

Hab. **Transvaal**, Lydenburg, 1 ♂; **Natal**, Maritzburg, 1 ♀ type. *Exp.* 44 mill.

LIST OF SOME *HYMENOPTERA* FROM ALGERIA
AND THE M'ZAB COUNTRY.

BY THE REV. F. D. MORICE.

[THESE *Hymenoptera* were collected by Lord Rothschild and myself in various parts of Algeria, and those from the Oued Nça and Ghardaïa by me in 1914. About the localities the articles in *Novitates Zoologicae* xviii. (pp. 470, 471), xxi. (pp. 180-185), and xxii. (pp. 61-65) may be consulted. No doubt a good many more species could be found in the M'zab country, but I had very little time there for the collecting of *Hymenoptera*, as during my brief stay a number of days were lost for it through gales and cold, dull weather, besides that most of my time was occupied with the primary objects of the journey, *i.e.* the collecting of birds and their eggs, and of *Lepidoptera*.

The specimens will be presented to the British Museum.—ERNST HARTERT.]

1. *Allantus pectoralis* Kriechb. ♀ (Oran).
2. *Stilbum splendidum* F. var. ♀ (Ghardaïa).

Perhaps = var. *pici* Buys. The mesonotum is densely punctured. But it is exceedingly small, and with a singularly purple coloration resembling that of *Clorosis episcopalis* Spin.

3. *Chrysis ignita* ♂ (Hammam Rirha).
4. *Mutilla barbara* L. ♀ (Aïn Sefra).
5. *Dasylabris maura* L. ♀ (Aïn Sefra).
- 6-10. *Dasylabris arabica* L. ♂♂ (Aïn Sefra).
11. " " " ♂ (Ghardaïa).
12. " " " ♀ var. (Ghardaïa).

I think this must be the ♀ of No. 11, which seems to be certainly a ♂ of *arabica*. It does not, however, quite agree with *arabica* ♀ (= *ornata* Klug sec. André) as described by André (*Spécies* viii. p. 395), since it has, in addition to the markings there mentioned, a **medial** pilose spot on each of the segments 3, 4 and 5, these spots practically coalescing to form a continuous longitudinal stripe (or "vitta") which broadens gradually from base to apex. Similar specimens which I took at Biskra in 1898 were recorded by the late E. Saunders (*Tr. Ent. Soc.* 1901) as *italica* F. But one of them was sent later to André and returned by him as "*ornata* Kl." *i.e.* *arabica* (vide *Spécies* l.c.), and this determination, so far as I can judge, seems to be probably the right one. (The pygidial area is **uniformly** reticulate, and by no means like that of *italica* as described by André).

13. *Stenomutilla argentata* Vill. ♀ (Oran).
14. *Myzine lacteipennis* Ed. Saund. ♂ (Aïn Sefra).
15. *Myzine sexfasciata* Ross. ? ♂ (Ghardaïa).
- 16-18. *Scolia bidens* L. ♂♂ (Aïn Sefra).
19. " " " ♀ (Aïn Sefra).

(This species was very common on flowers in gardens and near the town, at Aïn Sefra. We also observed it at Hammam Rirha.—E. H.)

20. *Scolia interstincta* Kl. ♂ (Aïn Sefra).
21. *Elis carbonaria* Kl. ♀ (Aïn Sefra).

22. *Clavelia brevipennis* F. ♀ (Oran).
 23. *Psammochares* (= *Pompilus*) *fumipennis* Dahlb. ? ♀ (Oran).
 24. *Psammochares viaticus* L. ♀ (Aïn Sefra).
 25-26. *Harpactopus* (= *Sphex* auctt. pars) *stchurovskyi* Rad. var. *hyalipennis* Kohl.
 ♀ ♀ (Aïn Sefra).
 27-28. " " " " ♂ ♂ (Oued Nça and El Arish).

The above specimens exactly resemble specimens from Biskra determined for me by Kohl many years ago when the ♂ was undescribed. I described it in *Trans. Ent. Soc. Lond.* Part III. 1897.

29. *Parasphex albisectus* Lep. ♀ (Laghouat).
 30-31. *Parapsammophila dives* Brull. ♀ ♀ (Ghardaïa).
 32-33. *Sphex* L. (= *Ammophila* auctt.) *heydeni* Dahlb. ♂ ♂ (Aïn Sefra).
 34-35. " " " " " ♀ ♀ " "
 36. *Psammophila tydei* Guill. ♂ (Aïn Sefra).
 37. " " " ♀ " "
 38-39. *Psammophila hirsuta* Scop. ♂ (Aïn Sefra).
 40. " " " ♀ " "
 41. *Tachysphex eduardi* Saund. ♀ (Aïn Sefra).

(Saunders's description was published after his death in *Trans. Ent. Soc.* Part IV. 1910.)

42. *Tachysphex panzeri* Kohl. ? ♀ (Oued Nça).
 43-44. *Vespa germanica* F. ♂♂ (Oran and Hammam Rirha).
 45-46. *Polistes gallicus* L. ♀ ♀ ? (Aïn Sefra).

Perhaps only large ♂♂. I do not know how to distinguish satisfactorily the ♂♂ and ♀♀ of this group. The character of size seems hardly sufficient.

- 47-48. These are clearly ♂♂ of *P. gallicus* (Aïn Sefra).
 49-50. Also ♂♂ of *P. gallicus*, somewhat less copiously ornamented than those from Aïn Sefra (Laghouat, and Hammam Rirha).
 51-53. Also ♂♂ of *P. gallicus*, highly coloured like the Aïn Sefra specimens (Hammam Rirha).

According to Saussure's criteria for distinguishing the forms *gallicus* and *biglumis*, all the above specimens 45-53 are to be assigned to *gallicus*, which is certainly the prevailing if not the only form in Algeria!

54. *Eumenes dimidiatipennis* Sauss. ♀ (Aïn Sefra).

I have previously met with this form only from Oriental districts (Egypt, etc.) and do not know of any other record of it from Algeria, except the specimens collected by Dr. Hartert in the sandy tract of El-Arich, at El-Golea, and in the Southern Oued Mya in 1912 (cf. *Nov. Zool.* xx. 1913, p. 599).

- 55-57. *Eumenes arbustorum* Penzer var. *algira* Schulz ♀ ♀ (Ghardaïa).
 58. " " " " " ♀ (Oued Nça).
 59. *Odynerus* (*Hoplopus*) *variegatus* F. ♀ (Hammam Rirha).
 60-61. *Odynerus* (*Lionotus*) *crenatus* Lep. ? ♂ ♂ (Ghardaïa).

The distinction between *crenatus* and *dantici* seems rather doubtful. If the forms can be separated specifically, these specimens belong (I think) to the former. One of them has the postscutellum immaculate, in the other it is lined with yellow.

The so-called "upper angles of the metathorax" are sharp, and separated from the postscutellum by an evident fissure (group of *simplex* ?)

62. Another ♂ of *crenatus* ? (Postscutellum yellow). (Oued Nça).

63. *Odynerus (Lionotus) fastidiosus* Sauss. ? ♀ (Djebel Mekter).

A very large insect quite corresponding to Saussure's description of *fastidiosus*, except that all its markings are **pure** yellow (not "ferruginous" !)

64. *Odynerus (Lionotus) rossii* Lep. ♂ (Ain Sefra).

65. *Odynerus (Lionotus)* sp. ? ♀ (Ain Sefra).

This may be a variety of *tripunctatus* F.; but its coloration neither quite agrees with Lepeletier's description, which Saussure endorses, nor with that of the specimens called *tripunctatus* at South Kensington. The scutellum and postscutellum are entirely black, the propodeum black with a small roundish red spot on each side. The first abdominal segment has a black central stripe dividing its declivous basal surface, and there is also a small black spot on the middle of its dorsal disc. The base of the second segment is occupied by a black fascia angularly produced in the middle and undulately on the sides; on its disc there is an obscure vague clouding such as Saussure mentions in describing his *sessilis* ("un T renversé"); and before its apex there are two lateral spots, as apparently in all forms of this group (*tripunctatus*, *sessilis*, and *filipalpis*). The apical margin of this segment appears to me quite simple; and this, if Saussure's account of *filipalpis* and *sessilis* is correct, would distinguish the present form from either of them. In specimens which I believe to be true *sessilis* from Spain, the margin of this segment is, as Saussure states, "cannelé transversalement et un peu relevé." On the whole I should call the present insect, provisionally, a variety of *tripunctatus*, F.

66. *Odynerus (Lionotus) canaliculatus* Sauss. ♀ (Oued Nça).

The clypeus in this specimen is entirely black; but I cannot doubt that it is a true *canaliculatus*, as it possesses all the extraordinary structural characters by which Saussure distinguishes his species.

67. *Odynerus (Ancistroceros) parietum* L. ♂ (Djebel Mekter).

68. *Pterochilus ornatus* Lep. ♀ (Oran).

The species was described from a ♂, also taken at Oran, by Lepeletier's son. This, I do not doubt, is its ♀, hitherto apparently unknown.

Apart from sexual differences, Lepeletier's description of the ♂ exactly suits it, except that on the first abdominal segment only a small triangular spot is black.

In this ♀ the maxillary palpi (N.B.) are much dilated, rounded at the apex, and completely encircled by a fringe of very long curving hairs. It belongs, therefore, to the group of *phaleratus*, *hellenicus*, etc., not to that of *numida* and *bembeciformis (terricola)*.

69. *Ceramius fonscolombi* Latr. ♀ (Ain Sefra).

70. *Colletes chobauti* Pérez ♂ (Djebel Mekter).

71. " " " ♀ (Oued Nça).

I name these with some hesitation, being single specimens and the male armature, etc., imperfectly visible. But they seem to agree with examples in my own collection named by Pérez.

72. *Hylaeus (= Prosopis auctt.) variegatus* F. (Ain Sefra).

73. *Halictus* sp. (?) ♂ (Ain Sefra).

Seems allied to *malachurus*, but I do not recognise the species. Its pilosity is more or less squamose, and the face is exceedingly long—as much so as in *punctatissimus* Morawitz. The apices of the abdominal segments are discoloured as in *albipes*. The wings very clear, with slightly yellow veins and stigma. The antennae testaceous beneath. All the tibiae are yellow with a fuscous clouding on their external surface. The femora are fuscous up to the knees, and the tarsi entirely yellow.

74. *Sphecodes gibbus* ♀ L. var. (Ain Sefra).

As usual in Algerian examples of this species the legs are largely red.

75. *Nomada chrysopyga* Morawitz ♂ (Oran).

76. " " " ♀ (Tlemcen).

77. *Nomada glaucopsis* Pérez ? ♂ (Oran).

78. *Nomada* sp. ♀ (Ain Sefra).

A small testaceous and black insect, which I do not venture to determine.

79. *Panurgus siculus* Morawitz ♂ (Ain Sefra).

80. *Systropha pici* Pérez ♀ (Ain Sefra).

I have not seen this species before, but Pérez's description suffices to identify it.

81. *Andrena funebris* Lep. ♂ (Tlemcen).

82. *Andrena nigroaenea* K. ♀ (Ain Sefra).

83. *Andrena labialis* K. ♂ (Oran).

84. *Andrena biskrensis* Pérez ♂ (Djebel Mekter).

85. " " " ♀ "

86. *Melitturga rubricata* n. sp. ♀ (Ain Sefra).

A very distinct species, instantly recognisable by the red basal segments of its abdomen. For its other characters see Diagnosis at end of this list.

87. *Ceratina cucurbitina* Rossi ♀ (Tlemcen).

88. *Osmia tricornis* Latr. ♂ (Tlemcen).

89. " " " ♂ (Col de Sfa near Biskra).

90. " " " ♀ (Tlemcen).

Similar specimens from Biskra have been recorded by the late E. Saunders in *Trans. Ent. Soc.* as *kohli* Ducke, but they do not appear to me to be separable from the European *tricornis*.

91. *Osmia latreillei* Spin. ♀ (Oued Nça).

92. *Anthidium sticticum* F. ♂ (Tlemcen).

93-95. " " " ♂♂ (Hamman Rirha).

96. " " " ♀ (Oran).

97. " " " ♀ (Tlemcen).

98-99. *Anthidium bellicosum* Lep. ♀♀ (Ghardaïa).

100-101. *Anthidium pullatum* n. sp. ♀♀ (Oued Nça).

Distinct from most species of the genus by the entirely black abdomen. For other characters see the Diagnosis at end of this list.

102-103. *Chalicodoma nasidens* Friese ♀♀ (Ghardaïa).

104. " " " ♀ (Oued Nça).

105. *Chalicodoma sicula* Rossi ♀ (Tifrit).

106. " " " ♀ (Oran).

- 107-108. *Chalicodoma muraria* var. *rufitarsis* Lep. ♀ ♀ (Tlemcen).
 109. *Eucera* (*Tetralonia*) *alternans* Brullé ♀ (Tifrit).
 110-114. *Eucera hispana* Lep. ♂ ♂ (Hammam Rirha).
 115-116. *Eucera trivittata* Brullé ♂ ♂ (Tlemcen).
 117. " " " ♂ (Hammam Rirha).
 118. *Eucera notata* Lep. ♀ (Aïn Sefra).
 119. *Eucera collaris* Dours ♀ (Hamman Rirha).
 120. *Lasius* (= *Anthophora*) sp. (?) (♀ Aïn Sefra).

I believe that this species is identical with *semirufus* Friese, described from Egypt. But in the present specimen the apical segments of the abdomen are thinly clothed with fulvous hairs. If these were rubbed off, Friese's description would suit the specimen exactly; and I believe that this had happened in the case of his "type," which was taken by myself. I have, however, no longer any specimen of *semirufus* ♂ or ♀ in my own collection, so that I may be mistaken. But under the circumstances I think it would be unwise to describe the present insect as a new species. (As to the name *Lasius* cf. *Trans. Ent. Soc. Lond.*, 1915, p. 421.)

121. *Lasius atriceps* Pérez ♂ (Djebel Mekter).
 122. *Lasius lutulentus* Kl. ♀ (Aïn Sefra).
 123-5. *Bremus* (= *Bombus*) *hortorum* L. ♀ ♀ (Hammam Rirha).
 126. *Bremus lucorum* L. ♂ (Tlemcen).
 127. " " " ♀ (Hammam Rirha).

(For the name *Bremus* vide *Trans. Ent. Soc. Lond.*, 1915, p. 428.)

- 128-130. *Apis mellifera* L. ♀ ♀ (Hammam Rirha).

DIAGNOSES OF NEW SPECIES

Melitturga rubricata n. sp.

Nigra, abdomine magna parte rubro; antennarum flagellis, tegulis venisque alarum (subcosta nigra excepta), pedum calcaribus articulisque apicalibus, tibiarum posticarum patellis, abdominisque segmenti 6^u area mediana, plus minusve distincte rufescentibus vel brunneis.

Segmentorum abdominalium 1-4 margines subscariosi, alboque tenuiter ciliati. Fimbria analis albida, sed in medio infuscata. Scopae albae; tarsi extra albido-, intra fulvo-, pilosi.

♀. Long. circ. 13 mm. (Aïn Sefra, South-West Algeria).

The colour of the abdomen in this insect gives it a curious resemblance to certain species of *Andrena* (e.g. *bipartita*, *schenki*, *helouanensis*, etc.). Probably it varies somewhat in individuals, but in the present specimen the basal segment of the abdomen is red entirely, except for a bilobed or "bi-ramose" black mark which surrounds its attachment to the thorax, but does not extend beyond the basal (declivous) portion of its surface, and is therefore not visible in the direct dorsal view. Segment 2 has on each side (just over the spiracle) a sharply defined longitudinal black oval spot, otherwise it is red entirely. Segment 3 is red, except for a black subtriangular mark in the middle of its ventral plate. Segment 4, above, is clouded with black from its apex almost to its base; beneath, it is also clouded, but less extensively. The three apical segments are almost entirely black.

The head and thorax are clothed with a rather thin pale pilosity, which is longest at the sides and beneath. The basal segment of the abdomen is clothed

similarly; but the three segments following are almost naked, except their ciliated margins. The apical fimbria is dense and conspicuous; dusky in the middle of segment 5, and entirely so on segment 6. It is white at the sides of segment 5; the hairs long, sub-erect, and incurved at their apices. The ventral segments are fringed with long sub-erect hairs.

The pilosity of the legs (scopae, etc.) is mostly white, but is fulvous (or in some lights golden) on the inside of the tarsi.

The base of the labrum is polished and shining. The clypeus is coarsely and somewhat rugosely punctured; the rest of the head and thorax are punctured more finely. Between the punctures the surface appears smooth and shining. The propodeum is opaque in the middle, less so at the sides, its sculpture feeble and shallow. The abdomen is finely and closely punctured throughout, the punctures very shallow, and the surface between them microscopically aciculate, yet slightly shining.

Anthidium pullatum n. sp.

Corpus, exceptis mandibulis late citrino-pictis, punctoque parvo citrino pone utrumque oculum, nigrum immaculatum.

Clypei subquadrati margo apicalis reflexus, crenatus. Scutelli margo edentatus, arcuatus, in medio leniter introrsus sinuatus. Corpus superne breviter, infra et in lateribus multo longius, albido-pilosum. Scopa ventralis alba: abdominis segmenti dorsalis 5th margo satis conspicue niveo-fasciatus. Pedes extra niveo- intus fulvo-pilosi. Calcaria alba. Unguiculi in medio acute denticulati. Mandibulae, clypeique margo crenatus, valde nitentes: reliquum caput cum thorace dense rugoso-punctatum et opacum. Abdomen concinne punctulatum, subopacum. Alae sordide hyalinae. Cellulae radialis dimidium superius infuscatum. Tegularum margines externi late scariosi. Abdominis segmentum quasi in medio carinatum (lateribus utrinque impressis vel foveatis); cuius carinae apex ultra reliquum marginem segmenti (fere sicut dens obtusus) prominet.

Long. circ. 11 mm., lat. 4 mm.

2 ♀ ♀, Oued Nça.

Of the known *Anthidium* species with immaculate abdomen the nearest to *pullatum* seems to be *moricei* Friese, but that appears to have black mandibles, and its body is described as shining, whereas in *pullatum* it is decidedly opaque. *Montanum* Morawitz is altogether unlike it, having (inter alia) a quite different pilosity. I have compared Dr. Hartert's specimens with all the forms of *Anthidium*, named and unnamed, in the South Kensington collections, but can find nothing really resembling them, nor even, I believe, at all nearly related to them. But, till the ♂ is known, it is perhaps rash to discuss the affinities of the ♀.

FURTHER CORRECTIONS OF AND ADDITIONS TO OUR
"REVISION OF THE *SPHINGIDAE*."

BY LORD ROTHSCHILD AND DR. KARL JORDAN.

(With 14 text-figs.)

Callosphingia gen. nov.

♀. Palporum articulus secundus intus profunde concavus et squamis longis dense tectus; tarsorum anticorum articuli spinis longis armati, scilicet primus quatuor, secundus et tertius una apicali.—Genotypus: *Dovania circe* Fawcett (1915).

The second segment of the labial palpus is concave on the inner surface as in *Herse*, *Acherontia*, and *Coelonia*. In this groove there are a number of erect hair-scales in the centre, and the scales placed at the proximal and lateral edges of the groove lean towards the centre, forming a dense roof over the cavity, the roof being absent distally, where the cavity is open. First segment with a naked streak on the inside; third segment short, almost concealed in the scaling of the second segment. Head rather small. Pilifer normal, bearing bristles only; genal process short, obtuse; tongue long (rolled in, not measured). Antenna distinctly incrassate distally, end-segment long, with rough scaling, preceding segments higher than long. Tibiae without spines, spurs of mid- and hindtibiae very unequal, the long inner spurs about twice as long as the outer ones and not quite reaching to the middle of the first tarsal segment. First segment of foretarsus much shorter than foretibia, on the outer side with four stout long spines and some small ones; segments 2 and 3 with a long apical spine; pulvillus present, long, paronychia with one slender lobe; midtarsus with basal comb, the distal bristles of which gradually diminish in length; hindtarsus without comb; first hindtarsal segment nearly as long as the other four segments together.

To be placed after *Coelonia*.

1. ***Poliana natalensis ferax*** subsp. nov.

♂ ♀. Maculis et fasciis nigris magis abundantibus et melius expressis quam in *P. n. natalensi*.

Hab. German East Africa: Manow; a series received from Messrs. Standinger and Bang-Haas.

The black lateral stripe of the thorax is broader than in southern specimens, the tip of the patagia being edged with black and the yellow spots of the metanotum usually more or less distinctly surrounded by black; the thorax and abdomen, above, darker than in *P. n. natalensis*, especially in the ♀, the abdominal spots deeper black, the lateral ones, moreover, being somewhat larger. Scaling of antennae and tarsi slaty-grey in most specimens, darker than in *P. n. natalensis*.

Forewing, on *upperside*, with an abundant intermixture of black scales in most examples, the wing being particularly dark in the ♀ ♀; the transverse lines more or less complete, but one of the ♂ ♂ approaching *P. n. natalensis* very closely; the fourth line from the base joins the discocellular ring in *P. n. natalensis*, while in *P. n. ferax* it remains separate from the ring or is only joined to it at the lower cell-angle (in the type-specimen of *ferax*); the greyish white marginal patch at

the anal angle smaller in *ferax* than in *natalensis*.—On the hindwing the outer black bar within the greyish white anal area and the black spots placed outside this bar larger, so that the marginal portion of the grey area is reduced to spots or entirely replaced by black.

The *underside* on the whole is darker than in *P. n. natalensis*, and the external band is less dentate on both wings.

2. *Poliana buchholzi* Plötz (1880)

The East African form of this species has been described by E. Strand as *Taboribia wintgensis* nov. gen. et nov. spec. in *Ann. Soc. Ent. Belg.* 54, p. 228 (1910). A paratype (♀) of this *wintgensis*, from the Wichgraf collection, is now in the collection of Mr. J. J. Joicey, to whom we are indebted for the loan of it. The specimen came from German East Africa, and agrees with some examples from British East Africa contained in the British Museum. All these specimens are smaller than West African *buchholzi*.

Poliana marmorata Fawc. (1915), from British East Africa, is the same as *wintgensis*. The type, and only specimen, is a ♂, which its discoverer, W. Feather, has very kindly transferred to the Tring Museum.

As *buchholzi* is the genotype of *Poliana*, Strand's name of *Taboribia* sinks into synonymy. The name of the East African subspecies therefore is :

Poliana buchholzi wintgensis Strand (1910)

Poliana marmorata Fawcett, *Proc. Zool. Soc. Lond.* 1915. p. 105, no. 85. pl. 2. fig. 22 (Masongaleni, Brit. E. A.).

Lt.-Colonel Fawcett's remark under *P. marmorata*, l.c. p. 106, that there is a figure of *Poliana buchholzi* Plötz, from West Africa, in the Dublin Museum, probably rests on a misunderstanding.

3. *Protoparce clarki* spec. nov. (text-figs. 1 and 2)

♂. *P. perplexa* R. & J. (1910) similis, minor, thoracis et alarum partibus pallidis grisescentibus, pedibus nigris albo irroratis, alis posticis subtus fascia media nigra e tribus lineis composita, armatura sexuali diversa.

Al. ant. long. 41–48 mm.

Hab. Fonteboa, Upper Amazon, May 1906 (S. M. Klages), one ♂, type; ? Chanchamayo, Peru, one ♂; another ♂ in coll. Preston Clark (Boston), from Ecuador.

The specimen kindly lent us by Mr. B. Preston Clark enables us to verify the distinctions presented by our examples, and we have much pleasure in naming this interesting species in his honour. Mr. B. Preston Clark's collection of Sphingidae is the largest in America.

P. clarki is a near relative of *P. perplexa* R. & J. (1910), *P. scutata* R. & J. (1903), and *P. pellenia* H.-S. (1854), agreeing best with *perplexa*. Its size being smaller and the pale portions of the thorax and wings grey without a distinct yellowish buff tone, the species has a rather different appearance from its allies.

The antenna is slightly thinner than in *P. perplexa*, and much thinner than in *P. scutata* and *P. pellenia*. The frons is nearly as black as the occiput. The first segment of the palpus has a white ventral margin. The white dorsal spots of the abdomen are vestigial or diffuse, and the seventh segment has no yellow side-patch ;

the white underside of the abdomen is more or less irrorated with brown-black scales, at least at the sides, with the exception of the first sternite, which is pure white, and the black median spots are small, usually only one being visible. The legs are nearly as black as the sides of the abdomen, and are irrorated with white scales.

Wings, *upperside*. The forewing agrees in shape best with that of *P. perplexa*, being decidedly more stumpy than in *P. scutata*; the markings of both wings are also practically the same, except that the outer grey band of the hindwing is

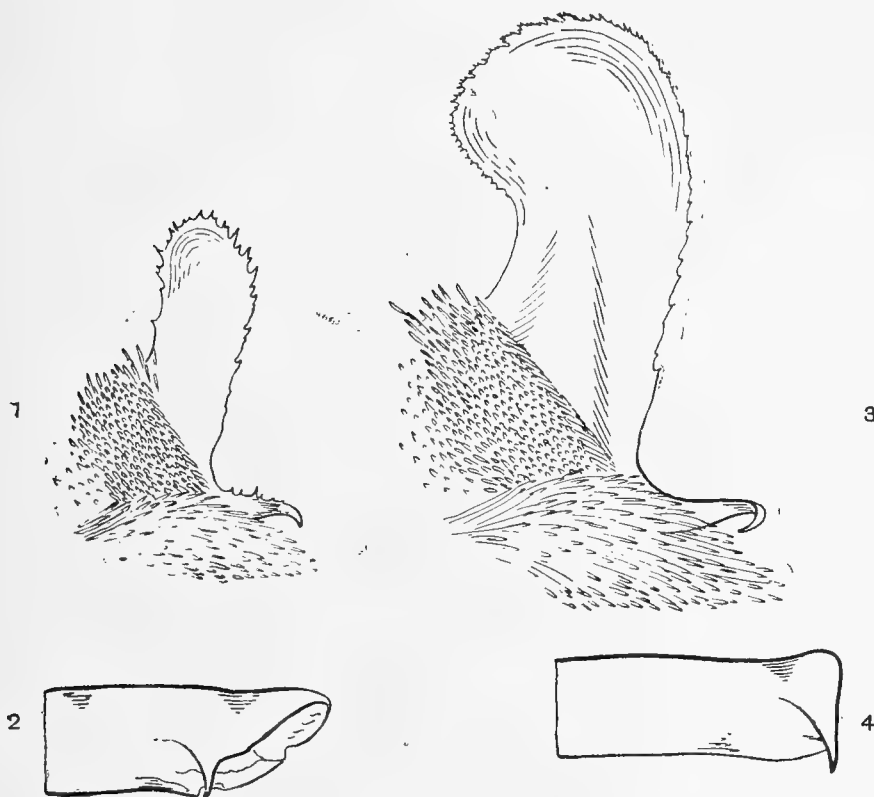


FIG. 1.—Harpe of *Protoparce clarki*.
 „ 2.—Penis-sheath of „ . „
 „ 3.—Harpe of *Protoparce perplexa*.
 „ 4.—Penis-sheath of „ . „

less shaded with black than in *P. perplexa*, but more so than in *P. scutata* and *P. pellenia*.

On the *underside* the forewing has on the disc two dark transverse lines outlined on the outer side with grey; these lines are as much curved as in *P. perplexa*, i.e. more so than in *P. pellenia* and *P. scutata*. The hindwing bears three lines, united posteriorly in a patch, the first line being the most prominent, the second feebly marked, consisting almost entirely of vein-dots only, and the outer line dentate, continuous or more or less effaced between the veins.

The harpe (text-fig. 1) has a broad vertical denticulate lobe, resembling that of *perplexa* (text-fig. 3), but being narrower and much smaller; the ventral process is denticulate in all three specimens. The penis-sheath bears a subapical tooth

in *P. clarki* (text-fig. 2) and *P. scutata*, and an apical one in *P. perplexa* (text-fig. 4) and *P. pellenia*.

The "Chanchamayo?" example, which has been in our collection for more than a dozen years, is much rubbed, but the other two specimens before us are in a very good state of preservation. Mr. Clark's specimen, of which the forewing has a length of 48 mm., whereas the wing of the type measures only 41 mm., bears in the centre of the antenna a diffuse black patch, of which there is just a trace in the type.

4. *Protoparce lefeburei* Guér. (1844)

Protoparce lefeburei, Rothschild & Jord., *Nov. Zool.* ix. Suppl. p. 82, No. 50 (1903) (partim).

Since the publication of the "Revision" we have received a series of specimens of a new form of *Protoparce* similar to *lefeburei*. While investigating this new form we found that what we considered to be *lefeburei* was a mixture of two species, our fresh material affording conclusive evidence to that effect. One of the species is undoubtedly *incisa* Walk. (1856), and the other we treat as *lefeburei*, the description of *lefeburei* agreeing very well with the specimens.

We have *P. lefeburei* in the Tring Museum from Honduras, Costa Rica, West Colombia, Venezuela, Trinidad, Rio Madeira (Amazonas), South-East Peru, Paraguay, Rio de Janeiro, and Santa Catharina. The abdomen of this species has no black dorsal line; the proximal half of the forewing is rather darker than the apical half, the brownish black discal streak runs obliquely from the base of R^3 to the apex of M^1 , not being parallel with these veins, and the whitish patch at the hind angle contrasts with the proximal area more or less conspicuously. The genitalia of the **male** have been figured by us *l.c.* The shape of the tenth sternite is particularly characteristic, the sternite being long and narrow, deeply cleft, with the lobes strongly curved upwards, the tips almost being rolled up. The penis-sheath bears two small teeth.

The **female** genital armature figured by us *l.c.* is that of *P. incisa*. In *P. lefeburei* the eighth abdominal sternite of the female is so much swollen in the centre as to form a large tubercle, whereas in *P. incisa* the sclerite is evenly convex transversely, forming a kind of arch. In both species the anterior side is excised for the reception of the postvaginal tubercle. The seventh sternite of *lefeburei* is sinuate centrally as in *P. incisa*, but the lobes bordering the sinus are more obtuse than in that species.

5. *Protoparce incisa* Walk. (1856)

Protoparce lefeburei, Rothschild & Jord., *l.c.* (1903) (partim).

This species can be recognised by the abdomen bearing a more or less conspicuous black dorsal line, by the proximal half of the forewing being paler than the apical half, and the black discal streak parallel with the veins and therefore forming an angle with the costal portion of the streak. The transverse lines in the outer half of the forewing are usually more strongly marked than in *P. lefeburei*. The tenth tergite of the **male** is less slender than in *P. lefeburei* in a lateral aspect; the tenth sternite is broader and shorter, not nearly so deeply cleft, the lobes being about as long as they are broad. The harpe is larger than in *P. lefeburei*, the dentate portion more rounded, and the apical process longer and for the most part naked. The penis-sheath has a row of teeth at the apical margin, the row ending

proximally with one or two larger teeth which correspond to the two teeth of *P. lefeburei*.

The vaginal armature of the **female** is figured by us *l.c.* as that of *P. lefeburei*. We have mentioned the differences in these organs between *P. incisa* and *P. lefeburei* above under the latter species.

We have *P. incisa* from Bahuru, São Paulo; Sapucay, Paraguay; Nivão, Matto Grosso; and Calama, Rio Madeira, below Rio Machados, Amazonas, August—October 1907 (W. Hoffmanns).

6. *Protoparce andicola* spec. nov.

♂ ♀. *P. incisae* similis, abdomine supra magis nigrescente, lineis transversis alarum anticarum multo melius expressis, linea postdiscali a costa ad marginem posteriorem distincta, fascia obliqua nigra latiore, armatura copulatrice diversa.

Hab. Peru: Tinguri, Carabaya, 3400 ft., August 1904, and S. Domingo, Carabaya, 6500 ft., August and October 1902 (G. R. Ockenden); Pozuzu, Huánuco (Sedlmayr); Chanchamayo. Ecuador: Zamora (O. T. Baron), and Macas.

Thirteen ♂♂ and one ♀. Type from Tinguri.

This is presumably the representative of *P. incisa* in the Andes of South America. But the differences are such as to render it advisable to treat *andicola* as a distinct species until we receive sufficient evidence of their being local forms of one species. It appears to us quite possible that *andicola* and *incisa* occur side by side, as do *incisa* and *lefeburei*.

P. andicola is darker than *P. incisa*, and nearly all the black markings are either broader or more sharply developed. The black dorsal line of the abdomen is broader than in *P. incisa*, but less prominent on account of the darker tint of the abdomen. The proximal half of the forewing, on the *upperside*, is on the whole somewhat paler than the apical half, and bears three elbowed transverse lines, which are more or less interrupted and only distinct in places; beyond the discocellulars there are three transverse lines, and farther distally a conspicuous post-discal one composed of arcs and geminate spots. The brown colour of the *underside* is of a deeper tone than in *P. incisa*. The spines of the first foretarsal segment are shorter in *P. andicola* than in *P. incisa*.

The tenth segment of the **male** is like that of *incisa*. The harpe is smaller and its apical process shorter. The penis-sheath has two teeth, as in *P. lefeburei*. The seventh and eighth sternites of the **female** are nearly the same as in *P. incisa*; the niche in which the postvaginal tubercle is placed is wider than in *P. incisa*.

7. *Protoparce sesquiplea opima* subsp. nov.

♂ ♀. Multo magis virescens quam *P. s. sesquiplea*, alis anticis brevioribus fortius fasciatis, thorace utrinque linea nigra notato.

Hab. Costa Rica: Tuis (type), Juan Vinas (W. Schaus), San José (C. Underwood), Three ♂♂ and two ♀♀.

Very similar in colour to *P. muscosa* Roths. & Jord. (1903), which also occurs in Costa Rica, but the upperside of the body and forewing much more greenish, the forewing somewhat more elongate, the antenna of the ♂ thicker, the genitalia similar to those of *P. sesquiplea*, the thorax with a narrow black lateral line, and the black submarginal band of the hindwing with a more even proximal edge.

Much darker than *P. s. sesquiplea* from Mexico, which is whitish grey above;

the forewing rather shorter, the two black median bands of the hindwing much closer together, and the lines of the forewing more prominent. The tenth sternite of the ♂ narrower, the harpe distally much more rounded. In the ♀ the tubercle behind the vaginal orifice smaller than in *P. muscosa* (the ♀ of *P. s. sesquiplea* is not known).

8. *Protoparce diffissa mesosa* subsp. nov.

We have now a large series of specimens from Northern Argentina (Salta and Tucuman). They differ markedly from the pale southern form *P. d. diffissa*, which is found in the province of Buenos Aires, and resemble in colour more or less *P. d. petuniae* from South-Eastern Brazil and Paraguay. They represent an intermediate race, which as such deserves a name, though it is not sharply separated either from *P. d. diffissa* or *P. d. petuniae*.

The *upperside* of the body and forewing generally as dark as in *P. d. petuniae*, but the forewing as a rule less russet.

The *underside* of the abdomen shaded with fuscous in nearly all specimens. Intermediate between *petuniae* and *diffissa* in size, but some of the specimens larger than the smallest *petuniae*, and others smaller than the largest *diffissa*.

Hab. Northern Argentina: Salta (type) and Tucuman, a series collected by J. Steinbach.

9. *Protoparce armatipes* spec. nov.

♂ ♀. *P. licheneae* simillima, sat minor, tarso antico extus spinis longis armato facile distinguenda.

Hab. North Argentina: Tucuman and between the rivers Burmejo and Pilcomayo (J. Steinbach). Four ♂♂ and one ♀.

The first segment of the foretarsus bears four or five long spines on the outer side, and the second segment one similar apical one. In colouring and markings *P. armatipes* is almost exactly like *P. lichenea*, but the basal area of the hindwing, above, is more extended grey, there being a grey patch below the cell extending from near the base to the inner black median band, this band being consequently more prominent than in *P. lichenea*. The transverse lines of the forewing are sharply dentate and strongly developed. The genitalia of the ♂ differ from those of *P. lichenea* in the tenth tergite being slenderer and tapering more evenly, and in the marginal teeth of the harpe being smaller.

Chlaenogramma undata R. & J. (1903) is similar in colouring and also has long spines on the foretarsus; but it bears two black longitudinal streaks on the disc of the forewing, and has no comb at the base of the midtarsus.

10. *Euryglottis guttiventris* R. & J. (1903)

We described this insect as a subspecies of *E. aper*. But the material since acquired proves it to occur from Colombia to Bolivia, while *E. aper* is known to us from Venezuela, Colombia, Ecuador, and Peru. The ranges of the two insects, therefore, being almost the same, *guttiventris* must be considered independent of *E. aper*.

E. guttiventris differs from *E. aper* in the whitish marginal spots or borders of the abdominal sternites being more distinct, in the pure black patches on the forewing, above, being smaller in consequence of the development of a larger number of transverse diffuse lines of raw umber-colour, in the creamy discal vein-streaks being

less heavy, the upper two almost effaced, the grey discal line usually less prominent and more dentate, and the lines following it on the distal side less developed than in *E. aper*, the proximal portions of the zigzag line more or less obsolete, the admarginal line less distinct and the brown-black fringe-spots of both wings larger and more sharply defined. Moreover, the forewing is a little narrower in *E. guttiventris*, and its distal margin slightly less convex. The tenth tergite of the ♂ is longer and slenderer; the hook of the harpe narrower, and the hook of the penis-sheath broader.

11. *Sphinx separatus melaena* subsp. nov.

♂ ♀. Colore saturatiore a *S. s. separato* distincta.

Hab. Guerrero Mill, Hidalgo, Mexico, 9000 ft. (Mann & Skewes), six ♂♂ received from B. Preston Clark; and Cuernavaca, Mexico, September 1904 (Dr. Gadow), one ♀.

The ground-colour deeper grey than in *S. s. separatus*, the black markings of the forewing contrasting somewhat less with the ground, and the whole insect appearing more black both above and below, the underside of the body being especially dark-tinted.

S. istar R. & J. (1903) occurs in the same districts; it is easily distinguished from *S. s. melaena* by the pronotum not bearing two yellow spots and the fringe of the hindwing being much more strongly spotted with black.

The species of *Sphinx* were dealt with in our "Revision" under the name of *Hyloicus*.

12. *Sphinx ligustri nisseni* subsp. nov.

♂. Alis anticis fascia grisea diffusa submarginali lata, posticis fascia nigra mediae cellulae contigua.

Hab. Algeria: Hammam Meskoutine, April 22, 1914 (Dr. Nissen), one ♂.

This is the first Algerian specimen we have seen, and apparently the first ever obtained in Algeria. It came to the camp near the quarry situated about two-thirds of the way from the hotel to the subterranean lake.

The specimen resembles dark European examples. The clayish tone which pervades the grey costal area of the forewing in European specimens is absent; the two grey submarginal lines situated on the distal side of the black submarginal line are merged together; the first and second black bands of the hindwing are broad and united from close to the cell to the abdominal margin, the median band touching the cell-apex both above and below; the black submarginal band is broader than the red discal band, and the blackish-grey marginal space is slightly broader than in European examples.

The underside is rather darker than in average European individuals; the diffuse black discal band, which in European examples is composed of two bands united posteriorly, is uniformly black, not showing a separation into two bands. The black median band of the hindwing is widened below M^2 , and the grey band placed at its outer side is less conspicuous than in *S. l. ligustri*.

13. *Amplipterus donysa dariensis* subsp. nov.

Amplipterus donysa, Rothschild & Jord., *Nov. Zool.* ix. Suppl p. 185. no. 149 (1903) (pt.; Chiriqui).

We have now four males from the Southern Faunal district of Central America, three being from Costa Rica and one from Chiriqui. All four are distinguished by

the dark patch of the head in front of the antennae being more diffuse than in *A. d. donysa* and contrasting less with the occiput, and by the grey marginal area on the *underside* of the forewing being less sharply defined.—Type from Sitio, Costa Rica, June (W. Schaus).

14. *Oxyambulyx substrigilis wilemani* subsp. nov.

Alis anticis macula costali subbasali notatis.

Hab. Philippine Islands: Manila, one ♂, September 9, 1912, and one ♀, July 12, 1912, collected by A. E. Wileman, who has kindly presented this pair to the Tring Museum.

Both sexes have a distinct rounded subbasal costal spot on the forewing above, which is not present in the other forms of *O. substrigilis*. The spot is larger in the ♀ than in the ♂. The marginal band of the forewing is somewhat broader before the middle than in the other races, and, on the *underside*, also more strongly abbreviated posteriorly. The ventral process of the harpe of the ♂ is very broad.

15. *Pseudoclanis grandidieri comorana* subsp. nov.

♂. Fascia nigra alarum posticarum e maculis ovatis plus minus contiguas composita.

Hab. Comoro Islands: Grande Comoro (L. Humblot), one ♂ in Mus. Tring received from Monsieur Charles Oberthür.

Forewing less falcate than in *P. g. grandidieri*, from Madagascar, with a row of black submarginal dashes on the veins. Black band of hindwing more proximal, being much narrower than the marginal area, incised between the veins, separated into spots between costal margin and R². On the *underside* the grey marginal area of the forewing less sharply defined below the apex than in *P. g. grandidieri*. Upper apical process of harpe shorter than in *P. g. grandidieri*.

16. *Leucophlebia afra* Karsch (1891)

When writing our "Revision" of the Sphingidae we had only five specimens of this species in the Tring Museum; now we have thirty-nine. A recent examination of this material has revealed the two facts: (a) that there are several geographically separated forms of *Leucophlebia* with black-banded abdomen, and (b) that *L. xanthopis* Hamps. (1910) is one of them.

We have no ♀♀, and the British Museum possesses but one specimen of that sex. The following remarks, therefore, refer to the male sex only.

The specimens from the various faunistic districts exhibit more or less considerable differences in the antennae and genitalia, the individual variation being slight as compared with the geographical variation. Our attempt to divide *L. afra* into its geographical components must be considered provisional. The specimens on which we base these notes may represent more subspecies than we at present think there are before us. But as we have only single specimens from several of the localities, we advisedly abstain from going beyond the obvious lines of division.

a. *L. afra edentata* subsp. nov. (Text-figs. 5, 6)

Valvarum processus dorsalis magnus, harpa edentata.

Hab. Four ♂♂ from: Gambaga, Gold Coast (Dr. Bury), type; Lokoja, Nigeria, October 1904 (D. Cator); Raja, Bahr-el-Ghazal, July—August 1911 (Dr.

In the type the branches of the antenna are shorter than the shaft is broad, in the Lokoja specimen the longest branches are slightly longer than the shaft is broad, and in the other two specimens the branches of the central segments are decidedly longer, though not so long as in *L. a. xanthopis*.

b. *L. afra xanthopis* Hamps. (1910) (text-fig. 8)

Leucophlebia xanthopis Hampson, *Proc. Zool. Soc. Lond.* 1910, p. 461, pl. 39, fig. 15, ♂ (S.E. Katanga, Congo).

Valvarum processus dorsalis parvus, harpa dentata.

Hab. Katanga, south-east corner of Congo. In the Tring Museum six ♂♂ from: Mpuapua, German East Africa (Dr. Baxter); Mohoroni, Nandi country, July 1903 (F. J. Jackson); Mbale, near Mt. Elgon, April 1909; Mubande, Buekulla, Uganda, March 1899 (Dr. Ansorge); Uganda.

The branches of the central segments of the antenna are much longer than the shaft is broad. Frons and occiput contrast strongly. The creamy central stripe of the forewing is broad and distally more or less strongly dentate on the veins. The basi-dorsal process of the clasper is small, and the apical margin of the harpe dentate in all the specimens (text-fig. 8, taken from type). The teeth of the harpe, and the lobes of the basi-dorsal process are individually variable in number.

c. *L. afra rosulenta* subsp. nov.

Valvarum processus dorsalis parvus, harpa dentata; antennae breviter pectinatae; caput fere unicolor.

Hab. Three ♂♂ from Moboro, German East Africa, May 1902.

The occiput and prothorax are pink, and contrast but little with the frons; mesothorax also deeper pink than usual. The median stripe of the forewing pale yellow, narrower than in *xanthopis*, not dentate distally, the stigma well within the red costal stripe, not joined to the pale yellow central stripe. The pectinations of the antenna short, those of the middle segments about as long as the shaft is broad. The dorsal process of the valve, and the harpe as in *xanthopis*.

This is presumably the race of the coast districts and the Zambesi.

d. *L. afra afra* Karsch (1891) (text-fig. 7)

Leucophlebia afra Karsch, *Ent. Nachr.* 17. p. 12, pl. 1, fig. 1, ♂ (1891), ♂♀, Mukenge, Kassai).

Valvarum processus dorsalis parvus, harpa bifurcata.

Hab. Old Calabar to Angola. In the Tring Museum twenty-six ♂♂ from: Old Calabar; S. of Congo; Upper Congo (Bentley); Nana Meya, Muhumbua, Mukenge and Bula Matenga, Angola, September 1903 (Dr. Ansorge); Lucalla, Angola, November 1903 (Dr. Ansorge); Pungo Andongo, Angola, April 1875 (A. von Homeyer); Bihé, Angola.

Occiput and frons strongly contrasting in colour, with the exception of our Bihé specimen. Pectinations of antenna medium, those of the central segments varying from being a little shorter to being somewhat longer than the shaft is wide. The pale yellow median stripe of the forewing usually about twice as wide in the middle as the posterior red stripe at the hind angle, rarely slightly dentate on the veins distally; the stigma usually not entirely enclosed in the red costal stripe. The two lobes of the anal sternite narrower than in the other subspecies

(cf. *Revision*, pl. 24, fig. 5). The dorsal process of the valve (text-fig. 7, pd) slightly smaller than in *xanthopis*; the harpe (ha) always with two long teeth at the apex, and usually with several small ones along the ventral margin.

17. *Leucophlebia neumanni* Roths. & Jord. (1903)

This species has a uniformly red abdomen. The ♂ is not yet known. Since describing the species from two ♀♀ we have received a third ♀, from the Blue Nile, collected by Mr. Gorringer. This specimen is somewhat smaller (length of forewing : 29.5 mm.), and the yellow central stripe of the forewing is broader.

18. *Polyptychus assimilis* R. & J. (1903) (text-fig. 9)

Polyptychus grayi assimilis Rothschild & Jord., *Nov. Zool.* ix. Suppl. p. 242. no. 197. b (1903).

We described *assimilis* from a female in the Berlin Museum which was found at Rietfontein in German South-West Africa, and also placed under this

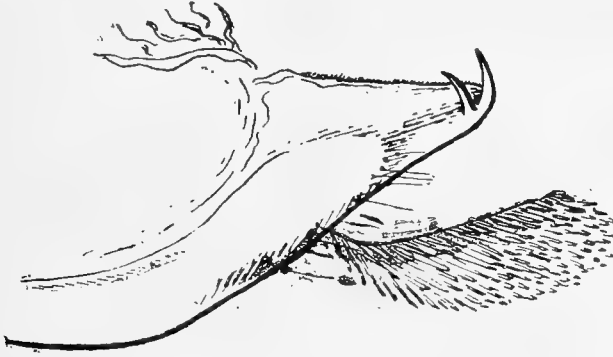


FIG. 9.—Harpe of *Polyptychus assimilis*.

name a second female contained in the Staudinger collection, from Bechuanaland. The structure of the genital armature was not examined.

We have since received a male from Tsumeb, German South-West Africa, which is evidently the same species as the above females. The genitalia being more different from those of *P. grayi* than one would expect them to be, if *assimilis* were a subspecies of *P. grayi*, we now consider *assimilis* to be a separate species.

P. assimilis is ashy grey, without the clayish tone which is usually so pronounced in *P. grayi*, especially in the female. The forewing is narrower than in *P. grayi*, but the hind angle more produced; the blackish limbal area also is narrower. The subbasal dot, which is large in the male and small in the female of *assimilis*, is very variable in *P. grayi*, being in this species sometimes large, sometimes small, and either simple or double.

The tenth tergite is almost the same as in *P. grayi*, ending in two small sharp points. The harpe of the claspers is forked at the apex, the one long apical process found in *P. grayi* being replaced by two short processes (text-fig. 9).

In *P. digitatus* Karsch (1891), another species closely allied to *P. grayi*, the harpe ends in a long linear process, which is hairy on the upperside and obliquely truncate-acuminate at the apex.

19. *Polyptychus consimilis* R. & J. (1903)

We described this species from a male in the British Museum, obtained on the Atbara R., and we placed here also a somewhat different second male from Konakry Island, in the Paris Museum. We have now examined four more examples, all males. These six specimens known to us represent three geographical varieties, which differ from one another especially in the organs of copulation. The female is still unknown.

a. *P. consimilis consimilis* R. & J. (1903)

♂. The forewing, above, has a clayish cloud at the distal margin almost extending to the outer discal line; the cloud is rounded proximally, being widest in front of the centre of the distal margin. The tenth tergite is very slender. The dorsal process of the clasper is straight, and very little curved inward (cf. *Revision of Sphingidae*, p. 250); the dorsal margin of the clasper not distinctly widened.

Hab. Atbara R., in Mus. Brit.

b. *P. consimilis ancylus* subsp. nov. (text-figs. 10, 11)

Polyptychus consimilis Rothschild & Jord, *Nov. Zool.* ix. Suppl. p. 251 (1903) (Konakry).

♂. The clayish limbal cloud described above is absent. The tenth tergite is broader than in *P. c. consimilis*; the dorsal process P¹ of the clasper longer and so strongly curved inward that it almost stands at right angles to the plane of the clasper (text-fig. 10, lateral view, and text-fig. 11, dorsal view); the ventral process P² is narrower than in *consimilis*, and the dorsal margin of the clasper is strongly dilated (L).

Hab. Gambaga, Gold Coast, type in Mus. Tring, and Konakry I., Mus. Paris.

c. *P. consimilis prionites* subsp. nov. (text-fig. 12)

♂. The lines of the wings on the whole rather more sharply marked than in both previous subspecies, and the proximal discal line of the forewing rather less strongly curved in S-shape; no limbal clayish patch. The tenth tergite is slender as in *P. c. consimilis*. The dorsal process P¹ of the clasper (text-fig. 12) even longer than in *P. c. ancylus*, very strongly curved inward and conspicuously dentate; the ventral process P² narrower than in *P. c. ancylus* and less chitinised; the dorsal margin of the clasper very moderately widened (L).

Hab. Upper Chari R., Lake Tchad, type in Mus. Tring; also a male from Jebba, Niger, in Mus. Brit.

20. *Polyptychus calcareus* R. & J. (1907)

Described from a discoloured ♂ from Masasi, German East Africa, close to the Portuguese frontier. A ♀ in the Tring Museum, from Mlanje, Nyasaland, March 17, 1913, evidently belongs to this species. It agrees in colour with *P. neavi* Hamps. (1910), except in there being hardly a trace of a fuscous median band on the forewing, and in the cilia of both wings being fuscous instead of red.

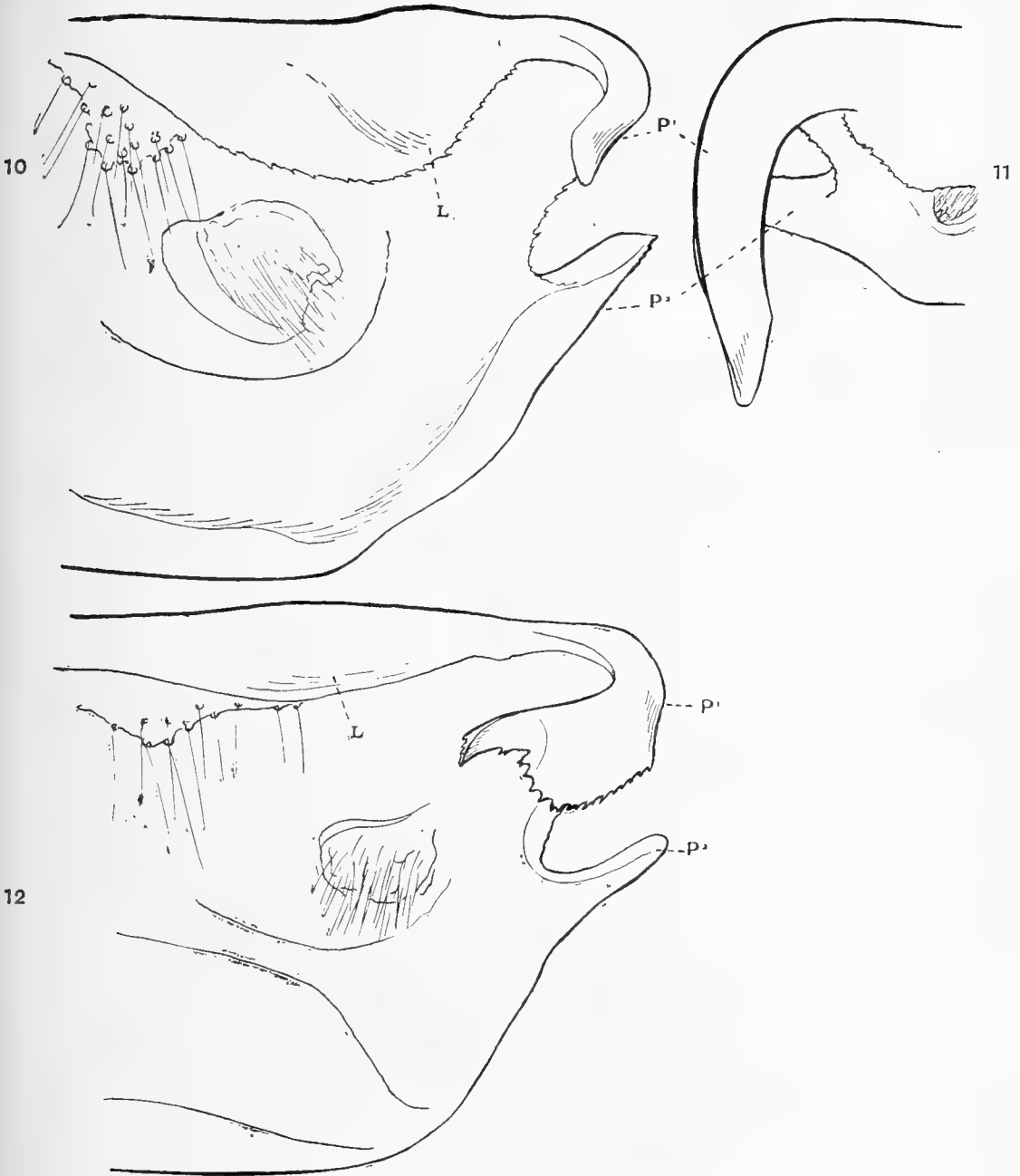


FIG. 10.—Clasper of *Polyptychus consimilis ancylus*, from Gambaga.
 " 11.— " " " " dorsal view.
 " 12.— " " " " *prionitis*, from Upper Chari R.

21. *Polyptychus neavi* Hamps. (1910)

Polyptychus martha Closs, *Intern. Ent. Zeits. Guben* 5. p. 50. no. 1 (1911); id., *Berl. Ent. Zeits.* 1911. p. 121. pl. 4, ♂.

Both *neavi* and *martha* were described from a *male*, not from a *female* as stated in the original descriptions.

22. *Polyptychus rosea* Druce (1882)

We have compared about twenty specimens of this species. All of them have a subbasal dot on the forewing. In Oberthür's *P. rosea* var. *meloui* (1914) this spot is said to be absent.

23. *Polyptychus reussi* Strand (1911)

The good description of this species applies so well to females of *P. coryndoni* (1903) in the British and Tring Museums that we doubt *reussi* being a distinct species. None of the *coryndoni* females, however, have the costal margin of the forewing below dark red, which it is said to be in *reussi*.

24. *Polyptychus numosae* Wallengr. (1860)

The specimens which have recently come to hand render it almost certain that *numosae* is the southern subspecies of a more widely distributed species. *P. fumosus* R. & J. (1903) is another subspecies, and a third, new, subspecies is described below. The three subspecies are all very much alike in colour and pattern, but the male-genitalia present very marked differences in those two subspecies of which the males are known.

a. *P. numosae numosae* Wallengr. (1860)

P. mimosae Wallengr. (1865); *P. cytis* Druce (1882); *P. consanguineus* Dist. (1899).

The body and wings are distinctly pink. Only the female is known.

Hab. Caffraria and Transvaal.

b. *P. numosae fumosus* R. & J. (1903) (text-fig. 13)

P. fumosus pelops Fawc. (1915).

The hindwing and abdomen of the type-specimen are somewhat greasy; our figure of the specimen (*Revision*, pl. 2. fig. 10 ♂), therefore, is too dark, the clayish tone which is actually present in the specimen not being apparent in the figure. Mr. W. Feather has obtained a number of specimens of *fumosus* in British East Africa, at Masongaleni and Kedai, of which two ♂♂ and three ♀♀ are now in the Tring Museum. These ♂♂ agree in colour and structure with the type of *fumosus*, two of the ♀♀ being rather more buff, especially on the hindwing. The harpe of the ♂ is characterised by ending in a curved hook, proximally to which there is a large tooth (text-fig. 13). The type of *fumosus* came from Dar-es-Salaam, not from the Ruwenzori Mts. as stated by Lt.-Col. Fawcett.

Hab. German and British East Africa.

c. *P. numosae hesperus* subsp. nov. (text-fig. 14)

Greyer than *fumosus*, with a very slight pink tint in the ♂, the underside especially being paler than in *fumosus*; the discal line of the forewing rather less oblique than in *P. n. numosae*.

Harpe of ♂ ending in two pointed processes of nearly the same size (text-fig. 14).

Hab. Tsumeb, German South-West Africa, one ♂ (type) and two ♀♀; also

Fort Quilenges, Benguella, January 1904 (Dr. Ansorge), one ♂. In the Brit. Mus. a ♂ from the Upper Loangwa Valley, North-East Rhodesia, 1000–2000 ft., March 1908 (S. A. Neave).

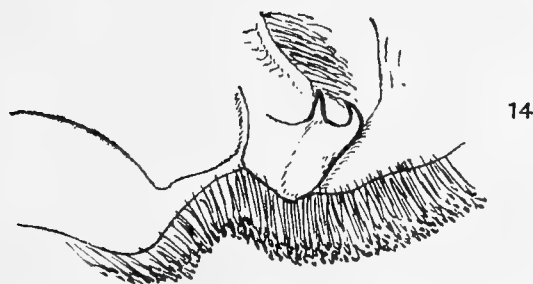
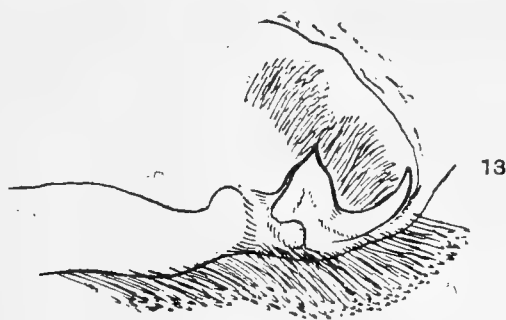


FIG. 13.—Harpe of *Polyptychus numosae fumosus*, from British East Africa.
 " 14.— " " " " *hesperus*, from Tsumeb.

Genus *Likoma* R. & J. (1903)

Our diagnosis of this genus requires amending. We said that the paronychium was absent. This statement is not correct. The type-species has a very slender lobe at each side, and the second species we have placed since in *Likoma*, *L. crenata* R. & J. (1907), has two such lobes at each side.

Likoma differs from *Marumba* Moore (1881) in the slenderer tarsi and narrower paronychial lobes.

The ♀ of *Likoma apicalis* R. & J. (1903) is represented in the British Museum by a specimen from Nengia, British East Africa (R. Crawshay). The specimen is larger than the ♂♂, brighter red, with broader wings; the apical patch of the forewing and the anal one of the hindwing are paler than in the ♂, and the two spots placed near the hind angle of the forewing are small.

The ♀ of *Likoma crenata* R. & J. (1907) also is larger than the ♂, and slightly darker. There is a specimen of this sex from the Juba R., British East Africa (C. L. Chevallier) in the Brit. Mus.

25. *Ceridia mira* R. & J. (1903).

Lt.-Col. Fawcett, in *Proc. Zool. Soc. Lond.* 1915. i. p. 107. no. 90, says that the ♀ found by Mr. Feather was the first seen by Lord Rothschild. The species, however, was described by us from three ♂♂ and one ♀, as stated in the *Revision*, p. 287.

26. *Nephele vespera* Fawc. (1915).

This is the same as *Nephele xyliana* R. & J. (1910).

27. *Temnora erato* Fawc. (1915).

This is *Poliodes roseicornis* R. & J. (1903), pl. 1. fig. 7 of the *Revision*.

28. *Hippotion dexippus* Fawc. (1915).

The type is in the Tring Museum, kindly presented by W. Feather. The specimen differs from *H. rosae* Butl. (1882) in its inferior size, in the antennae not being pink, and the hindwing being somewhat more buffish and having a more distinct blackish marginal band.

The only ♂♂ of *H. rosae* we have come from Tsumeb in German South-West Africa. We have taken out the ♂-organs of one of them, and find that the tenth tergite is broad at the base and very strongly narrowed to the apex in *rosae*, while in *dexippus* this tergite is nearly the same in width from near the base to the apex, being almost twice as broad as the narrow apical portion of *rosae*. The harpe of *dexippus* is acuminate, whereas in *rosae* it is slightly spatulate. The penis-sheath is practically the same in *rosae* and *dexippus*, the apical margin being incrassate, forming a half-ring which ends at both sides in a dentate process, the left process being broader than the right one and bearing teeth only at and near the apex, the dentition of the right process being continued behind the apical margin by a row of small teeth.

Whether these differences are individual, subspecific or specific it is hardly possible to say before more specimens have come to hand. Our only example of *rosae* from Somaliland has pink antennae, which points to the type of *dexippus* being either an aberrant specimen of *rosae* or representing a distinct species. We incline towards the second alternative, and, at any rate for the present, shall treat *dexippus* as distinct.

29. *Hippotion exclamationis* Fawc. (1915).

Lt.-Col. Fawcett differentiates this species from *H. roseipennis* Butl. (1882) by some details in colour and markings. Our series of specimens of *H. roseipennis*, from Delagoa Bay, Nyasaland, German and British East Africa and Unyoro, convinces us that the specimen upon which *exclamationis* is based belongs to *roseipennis*.

30. *Pergesa diyllus* Fawc. (1915).

Hippotion diyllus Fawcett, *Proc. Zool. Soc. Lond.* 1915, p. 109, no. 101, pl. 2, fig. 23.

This is a most interesting species. It is closely allied to, if not the same as, *Pergesa socotrensis* Rebel (1899). The type of *diyllus*, now in the Tring Museum, has been very badly damaged in the post; we have stuck the pieces together as well as we could with the help of small bristles, and we hope that the specimen will prove good enough for identification purposes. It looks as if it were a faded *socotrensis*, with some of the costal markings of the forewing absent or vestigial. In Fawcett's figure the thorax and base of the abdomen are not broad enough, and the hindwing is too warmly coloured with the marginal band too prominent.

It is advisable to treat, for the present, *diyllus* as a distinct species near *Pergesa socotrensis*.

31. *Theretra rhesus* Boisd. (1875)

We have twenty-six specimens which we refer to this species. But we are very uncertain about the number of subspecies they represent. We have no examples from the Philippines, whence *rhesus* was originally described, nor from the Moluccas, and our two specimens from the Solomon Islands are not in good condition. Under such circumstances we abstain from naming any of the subspecies which appear to stand out among our material. We must, however, revive a name we sank into synonymy in the *Revision*. The specimens from the greater Sunda Islands and Philippines have the abdomen and wings more strongly striped than those from the islands farther east, and the underside of both wings and body is on the whole more pink. The eastern race is *Th. rhesus insularis* Swinh. (1892). The name was originally based on a ♀ from Ceram and a ♂ from Key. Both specimens are designated "type" by Swinhoe; we select the Ceram example as the type. Provisionally the specimens of all the localities from the Moluccas to the Solomons may be placed under *insularis*.

32. *Theretra radiosa* spec. nov.

Theretra rhesus Rothschild & Jord. (nec Boisd. 1875, err. determ.), *Nov. Zool.* ix. Suppl. p. 766. no. 718 (1903) (partim; Fergusson).

♂ ♀. Simillima speciei a celeberrimo Boisduval *rhesus* appellatae. Abdomine fortiter striato, sed absque linea dorsali mediana; alarum anticarum linea quarta lata ad marginem posticum cum macula basali nigra coniuncta.

Hab. A series from: Goodenough Island, 2500-4000 ft., May 1912 (A. S. Meek), type; Fergusson, November 1904 (A. S. Meek); Biagi, Mamberé R., British North-east New Guinea, 5000 ft., April 1906 (A. S. Meek); Ekeikei, British New Guinea, 1500 ft., March to April 1903 (A. E. Pratt); Mafulu, British New Guinea, 6000 ft., September 1903 (A. E. Pratt); Mt. Goliath, Dutch South New Guinea, 5000-7000 ft., January and February 1911 (A. S. Meek); Ninay Valley, Arfak Mts., 3500 ft., November 1908 to January 1909.

The two dorsal lines of the abdomen are strongly marked, but there is no trace of a median line between them, as is the case in *Th. rhesus*; the basal greenish black lateral patch of the abdomen prolonged into a broad stripe, which reaches at least to the fourth segment.

Forewing, *upper side*: costal edge pale, a broadish diffuse costal stripe the colour of the discal lines; these lines as in *Th. rhesus*, but the fourth, which is very broad, more oblique, reaching the hindmargin a little more proximally and being continued to the base by a hindmarginal streak, which is anteriorly bordered by a pale line; black basal patch smaller than in *Th. rhesus*.

Underside of wings and body more pink than in eastern specimens of *Th. rhesus*; the postdiscal black vein-dots of both wings strongly marked.

We cannot find any difference in structure between *Th. radiosa*, *rhesus*, *boisduwali* and *clotho*.

SOME NEW *ARCTIADAE*.

BY LORD ROTHSCHILD, F.R.S., PH.D.

NOLINAE1. *Roeselia dognini* spec. nov.

♂. Resembles closely *divisa* Schaus, but outer half of forewing is grey, not black. Antennae greyish amber-brown; head and thorax amber-buff; abdomen somewhat paler.

Forewing: basal half amber-buff, with costal portion and a broad convex outer marginal band chocolate rufous; outer half greyish silver, a double waved and crenulated postmedian line sooty black, a very strongly convex waved and crenulated postdiscal line sooty black, four black streaks in costal area, and dark grey streaks on pale grey fringe.

Hindwing buffish grey-white satiny; fringe and outer margin grey, a cellular dot and postmedian shadow line also greyish.

Length of forewing: 12.5 mm. Expanse: 28 mm.

Hab. Cañon de Tolima, 1700 metres = 5500 ft., Colombia, December 1909 (A. H. Fassl).

2. *Roeselia minuscula pura* subsp. nov.

♂. Differs from *m. minuscula* Zell. in the ground-colour being more silvery grey, less heavily marked with black, and has the dark costal patch more prominent.

Hab. Cañon de Tolima, 1700 metres = 5500 ft., Colombia, February 1910 (A. H. Fassl).

LITHOSIANAE3. *Nodozana subandroconiata* spec. nov.

♂. Antennae, head, tegulae, and patagia amber-yellow; thorax and abdomen cinnamon greyish buff, blackish marks on third and last segment and claspers of abdomen.

Forewings have a much-crumpled appearance owing to the large and weirdly-shaped androconial patch on the underside; buffish golden-yellow, the basal four-fifths marked with pale brownish mauve.

Hindwings buff.

Underside uniform dark buff; the central third of forewing occupied by a large membranous deeply corrugated and irregular androconial organ sparingly clothed with androconial hairs; costal half of this organ dark dull brown, inner half dark buff, a dense felted androconial tuft at and on discocellulars.

Length of forewing: 11 mm. Expanse: 25 mm.

Hab. Cañon de Tolima, 1700 metres = 5500 ft., Colombia, January 1910 (A. H. Fassl).

4. *Illice introbasalis* spec. nov.

♀. Antennae, head, and thorax dark bronze grey, tips of patagia cream buff; abdomen reddish salmon-colour.

Forewing bronze grey; a patch of cream buff from base for two-fifths length of wing below median vein to inner margin, a narrow reddish-pink line on it at inner margin; a median band of cream buff with inner edge concave, outer edge straight.

Hindwing: basal three-fourths pale rose-pink, outer fourth bronze grey.

Length of forewing: 6.5 mm. Expanse: 14 mm.

Hab. Manaos, River Amazon.

ARCTIANAE

5. *Prumala subtessellata* spec. nov.

♂. Differs from *tessellata* Schaus by its black hindwings, by the green not black centre to the thorax, and the black patagia edged with green on the outside, these patagia being green edged with black in *tessellata*.

Length of forewing: 20 mm. Expanse: 46 mm.

Hab. Las Quiguas, near San Esteban, Venezuela (S. M. Klages).

6. *Prumala tolimensis* spec. nov.

♂. Antennal shaft grey-brown, pectinations very long and less greyish; head orange golden, mixed with crimson near eyes; thorax orange golden, mixed with crimson scarlet in one ♂, while in the second ♂ the whole thorax, except the tegulae and shoulders, is deep maroon crimson; abdomen orange golden, much mixed with crimson.

Forewing golden yellow; basal two-fifths obliquely sooty purple except costa, which is golden yellow with a scarlet splash; inside this dark area are two golden oblong spots ringed with scarlet, and it is outwardly edged with scarlet; from the dark basal area about the centre of vein 2 there runs up to the costa a broad band of sooty purple produced in a blunt broad tooth towards termen along and above vein 5; within the band are scarlet nervular streaks as well as towards termen; along and below costa some scarlet dots and one at tornus; some dots in and around cell and a subterminal row of similar dots purplish grey.

Hindwing golden buff, washed with pale crimson on inner half.

Length of forewing: 23 mm. Expanse: 52 mm.

Hab. Monte Tolima, 3500 metres = 11,400 ft., Colombia, February 1910 (A. H. Fassl).

7. *Amaxia peruana* spec. nov.

♀. Antennae black-brown, anterior fifth of shaft and pectinations yellowish grey; head golden yellow, a black spot on vertex; thorax golden yellow, centre of patagia, metathorax, and patch near juncture of abdomen brownish plum-purple; abdomen crimson, with some indistinct yellow marks.

Forewing golden yellow; four patches in basal area greyish purple ringed with black and narrowly with scarlet; an antemedian highly irregular oblique band narrow at costa but widening to three-fifths of wing on inner margin, greyish purple edged brokenly with black and scarlet, two spots within this band yellow and scarlet, and nervures mostly scarlet; a similar band beyond the basal two-thirds of wing from costa to above vein 4, a terminal and subterminal row, and a number of discal spots dull greyish purple.

Hindwing yellowish buff suffused with pink.

Length of forewing : 19 mm. Expanse : 43 mm.

Hab. Sto Domingo, Carabaya, 6000 ft., S.E. Peru, January 1903 (G. Ockenden).

8. *Paranerita metapyrioides* spec. nov.

♂. Differs from *metapyria* Dogn. in the outside edges of the oblique basal three-fifths of the forewing, the edges of the subapical patch and middle third of costa being golden yellow, not deep orange, and the hindwings being buffish golden **not** fiery orange.

Length of forewing : 21 mm. Expanse : 46.5 mm.

Hab. Muzo, Rio Cantinero, 400 metres = 1300 ft., Colombia (A. H. Fassl).

9. *Automolis schausi* spec. nov.

♀. Differs from *elissa* Schaus in the much darker cream-yellow **not** cream-white colour of the wings, in the black spots on the tegulae, in the black spot on the front of the thorax, in the two rows of lateral black spots on the abdomen, and in the white spot on the third segment of the abdomen.

Length of forewing : 29 mm. Expanse : 65 mm.

Hab. Sita, Costa Rica (W. Schaus).

10. *Automolis sordidipennis* spec. nov.

♀. Allied to *ventralis* Schaus.

Pectus orange ; antennae black ; head and thorax black, tegulae and patagia cream-coloured, narrowly edged with black ; abdomen black, anal segment orange, with the dorsal portion of basal third black.

Forewing dirty mouse-grey ; nervures brown-grey ; base suffused with grey-black.

Hindwing purer grey, disc of wing more whitish, nervures only slightly darker.

Length of forewing : 28 mm. Expanse : 63 mm.

Hab. Las Quiguas, near San Esteban, Venezuela (S. M. Klages).

11. *Automolis fulminans* spec. nov.

♀. Allied to *flammans*, *subflammans*, and *perflammans*, but nearest to the last in depth of colour.

Pectus, head and thorax orange scarlet, black dots edged with white on tegulae, shoulders of patagia and two spots on metathorax white ; abdomen, basal half crimson, anal half reddish orange.

Forewing rufous cinnamon suffused all over with crimson ; nervures brighter crimson, in basal fourth above vein 1 the nervures and interspaces streaked alternately with deep crimson and dirty white ; in basal half of wing a spot at base, three above vein 1, two larger and two smaller below vein 1, two large spots in cell, and three on costal area pure white ; beyond the cell between veins 4 and 7 is a large irregular, almost semivitreous, white patch containing in it eight crimson dots, this patch is much smaller than in the three allied species ; fringe and costal edge brick-red.

Hindwing rose-crimson or deep salmon-red, veins darker.

Length of forewing : 33 mm. Expanse : 75 mm.

Hab. South Brazil.

12. *Automolis catharinae* spec. nov.

♂. This species is intermediate between *diluta* Feld. and *rectiradia* Hmps. Palpi and frons brown; antennae black; head and tegulae cream yellow, the latter brown on inward two-fifths, thus forming large brown median patch; thorax black-brown, patagia bright pink edged with yellow; abdomen black-brown.

Forewing with deep black-brown basal patch, paler brown along the oblique outer edge; costal area from apex to basal patch broadly creamy yellow, from which runs a wedge-like antemedian band to inner margin where it is narrowest; this antemedian band is contiguous to outer edge of basal patch; a longitudinal somewhat oblique cinnamon-brown line starting from basal patch and crossing the antemedian line runs along median nervure, and vein 4 reaches termen at vein 6; rest of wing umber-brown washed strongly with grey.

Hindwing: base and part of cellular discal area almost semihyaline whitish cream, rest umber-brown washed with grey.

Length of forewing: 22.5 mm. Expanse: 52 mm.

Hab. Sta Catharina, Brazil.

13. *Baritius palmeri* spec. nov.

♂. Pectus and forecoxae crimson scarlet; antennae, head, and thorax deep black with a satiny sheen which has a brownish plum-purple gloss; abdomen deep velvety black, anal tuft and outer half of anal segment bright yellow, on the sides are traces of red hairs in the same position as the lateral stripes in *B. superba* Schaus, a patch of yellow hair at base of abdomen on the underside.

Forewing leaden grey-black glossed with brownish plum-purple, a slight antemedian band, a heavy median band, and a postmedian broken band of three patches deeper black.

Hindwing: hyaline white, nervures black, apex and tornus very widely black, rest of termen narrowly black.

Length of forewing: 23.5 mm. Expanse: 53 mm.

Hab. San Antonio, W. Colombia, 5800 ft. December 1907 (M. G. Palmer).

14. *Ischnocampa tolimensis* spec. nov.

♂. Antennae bronze-brown; head pale wood-brown; thorax deep chocolate-brown, portion at juncture with abdomen pale wood-brown; abdomen dark sooty brown.

Forewing almost hyaline pale grey; costal area, termen, nervures, and all below vein 1 bronzy brown-grey; some scattered spots on nervures, termen, costa and inner margin chocolate-brown.

Hindwing almost hyaline pale grey, costa and termen very narrowly darker grey.

Length of forewing: 17.5 mm. Expanse: 39 mm.

Hab. Monte Tolima, 3200 metres = 10,400 ft., Colombia, January 1916 (A. H. Fassl).

15. *Opharus albijuncta* spec. nov.

♂. Palpi, antennae, and frons liver-brown, vertex white; thorax liver-brown, patch near juncture with abdomen white; abdomen pale liver-brown.

Forewing pale liver-brown densely irrorated with darker brown specks.

Hindwing semihyaline pale liver-brown irrorated with dark brown specks, more densely on outer half of wings.

Length of forewing : 26 mm. Expanse : 56.5 mm.

Hab. Monte Tolima, 3200 metres = 10,400 ft., Colombia, January 1910 (A. H. Fassl.)

16. *Opharus colombiana* spec. nov.

♀. Palpi dark brown; antennae and head wood-brown; thorax wood-brown with three lateral black dots; abdomen yellow with transverse black bands, basal half clothed with long paler wood-brown hairs.

Forewing wood-brown, veins darker brown; a shadowy darker discocellular bar.

Hindwing paler semihyaline wood-brown.

Length of forewing : 29 mm. Expanse : 64 mm.

Hab. Cañon de Tolima, 1700 metres = 5500 ft., Colombia, March 1910 (A. H. Fassl.)

17. *Opharus aureopuncta* spec. nov.

♂. Antennae, head, and thorax dark mummy-brown; palpi with pale yellow patches; head and thorax mixed with a few yellow hairs; abdomen, basal two-thirds mummy brown, apical third crimson with three dorsal black dots.

Forewing dark mummy-brown densely sprinkled with pale yellow dots; along costa five larger spots, two subterminal rows of spots, an irregularly scattered number of discal spots, and the fringe-chequers also pale yellow.

Hindwing: basal two-thirds semihyaline greyish buff, with a large arrow-shaped mummy-brown patch under costa; outer third mummy-brown dotted with minute pale yellow dots and one larger dot above vein 5; abdominal area to vein 2 clothed with long pale pink hairs among which are a few grey ones. A second ♂ has the larger pale yellow spots in forewing much reduced in size and number.

Length of forewing : 26 mm. Expanse : 58 mm.

Hab. Monte Tolima, 2700 metres = 8800 ft., Colombia, February 1910 (A. H. Fassl.)

18. *Opharus irregularis* spec. nov.

♀. Palpi orange; a black streak on outside of second, and a black spot on third segment; antennae amber-brown; head cream-colour, frons mixed with a few black hairs, vertex with black spot; thorax cream-colour, three washed-out yellowish brown smears on patagia; abdomen cream-colour, basal two-thirds clothed with long brownish cream hairs.

Forewing gallstone yellowish brown, divided into eleven transverse highly irregular and serpentine bands by five transverse bands of cream-colour; the six resulting gallstone yellowish brown bands are in places suffused with darker, more liver-brown.

Hindwing: basal two-thirds semihyaline cream-white, outer third dirty pale wood-grey, with a semihyaline subterminal line; abdominal area to vein 2 clothed with long rough cream-coloured hair.

Length of forewing : 32 mm. Expanse : 71 mm.

Hab. Monte Tolima, 3200 metres = 10,400 ft., February 1910, Colombia (A. H. Fassl.)

19. *Hemihyalea lehmanni* spec. nov.

♀. Antennae yellowish cinnamon-brown; head frons cinnamon-buff; vertex yellowish cinnamon-brown; thorax and abdomen yellowish cinnamon-brown; anal segment grey, anal tuft buff.

Forewing semihyaline pale rusty yellowish cinnamon-brown, almost completely clothed with scales on costal and inner areas and terminal fourth of wing.

Hindwing semihyaline brownish cinnamon-yellow.

Length of forewing: 35 mm. Expanse: 79 mm.

Hab. Popayan, Colombia (Lehmann).

20. *Hemihyalea ferreobrunnea* spec. nov.

♂. Forelegs cream-buff; palpi rusty chocolate, cream at tips; head, frons cream, vertex rusty cinnamon-chocolate; antennal shaft grey, long pectinations cinnamon-chocolate; thorax cinnamon-chocolate; abdomen pale cinnamon-chocolate; last four segments dark sooty-brown with lateral grey spots, claspers cinnamon-buff.

Forewing: basal, costal and inner areas and terminal fourth of wing rusty cinnamon-chocolate; whole disk hyaline very slightly powdered with rusty cinnamon-chocolate scales; nervures rusty cinnamon-chocolate.

Hindwing almost hyaline, abdominal and terminal areas and nervures pale cinnamon yellowish brown.

♀. Differs in the abdomen being almost as dark as thorax, and only the last two segments are pale grey, **not** as in ♂ the four last sooty-brown.

Length of forewing: ♂, 36 mm.; ♀, 35 mm. Expanse: ♂, 80 mm.; ♀, 77 mm.

Hab. Monte Tolima, 2800–3200 metres = 9100–10,400 ft., January–February 1910, Colombia (A. H. Fassl).

21. *Hemihyalea subtenuimargo* spec. nov.

♂. Closely allied to *tenuimargo* Dogn. Forelegs cream-white in front; head, frons cream-buff, vertex maroon; antennae brown; thorax maroon, collar and shoulders cream-buff; abdomen rosy carmine.

Forewing hyaline, slightly obscured here and there by a few brown scales; basal, costal and inner areas golden brown; terminal area deep brown.

Hindwing hyaline, terminal margin pale grey-brown, abdominal area clothed with satiny buffy yellow hairs.

Length of forewing: 34 mm. Expanse 75 mm.

Hab. Monte Tolima, 3500–3800 metres = 11,300–12,400 ft., February 1910. Colombia (A. H. Fassl).

22. *Amastus watkinsi* spec. nov.

♀. Pectus orange; palpi orange with two black spots; head black, white, and orange; antennae black, thorax orange; tegulae, front half white, hinder half orange edged with black; patagia white, centre orange edged with black; abdomen orange yellow, a lateral band of white above and below which runs a series of black spots, those above with white, those below with orange centres.

Forewing semihyaline cream-white, strongly suffused with cinnamon on basal half of inner area and terminal fourth of wing, nervures black; an orange spot at base, a broad antemedian band preceded closely by a narrow one, together one-

fifth of breadth of wing, sooty brown; an irregular broad postmedian band followed by three crenulate waved lines all sooty brown.

Hindwing semihyaline, buffish white, veins and part of termen grey.

Length of forewing: 32 mm. Expanse: 71 mm.

Hab. Uruhuasi, S. Peru, 7000 ft., April—May 1910 (H. and C. Watkins).

23. *Amastus tolimensis* spec. nov.

♀. Head, antennae, palpi, pectus, and thorax umber-brown; abdomen slightly paler and basal half clothed with yellowish umber-brown hairs.

Forewing semihyaline cinnamon rufous brown, outer third of wing dark semihyaline chocolate with a band of cinnamon rufous traversing it, discocellular bar and patch below median nervure also semihyaline chocolate.

Hindwing semihyaline yellowish cinnamon, terminal line and dense hair of abdominal area yellowish cinnamon brown.

Length of forewing: 38 mm. Expanse: 83 mm.

Hab. Monte Tolima, 2800 metres = 10,750 ft., February 1910, Colombia, (A. H. Fassl).

24. *Amastus debilis* spec. nov.

♀. Palpi outside crimson tipped with testaceous cinnamon; antennae, basal third dirty grey, apical two-thirds amber brown; head and thorax testaceous cinnamon; abdomen greyish cinnamon; edge of anal segment buff.

Forewing hyaline; costal, and inner area below vein 1, basal area and fringe yellowish testaceous cinnamon, subterminal area thinly scaled with brown scales.

Hindwing hyaline; basal, costal, and terminal areas yellowish testaceous cinnamon, abdominal area clothed somewhat sparsely with silky yellowish cinnamon hairs.

Length of forewing: 29–32 mm. Expanse: 65–79 mm.

Hab. Merida, Venezuela (Briceño).

25. *Amastus vitreata* spec. nov.

♀. Palpi sooty chocolate-brown; antennae umber-brown; basal third of shaft sooty black; pectus, head, and thorax dirty milk-white; patagia with dull orange median band; abdomen pale leaden grey; basal three-fourths clothed with long greyish cream hairs, anal ring white.

Fore- and hindwing hyaline, costal, inner and terminal edges cream-buff in forewing, cream-white in hindwing, abdominal area of hindwing with creamy white hairs and scales.

Length of forewing: 32 mm. Expanse: 72 mm.

Hab. Monte Tolima, 3200 metres = 10,400 ft., Colombia, January 1910 (A. H. Fassl).

26. *Halisidota tolimensis* spec. nov.

♂. Palpi chocolate sooty brown; head milk-white; antennae dark brown; thorax cinnamon-brown; abdomen brownish cinnamon-grey, basal two-thirds clothed with long pale cinnamon-brown hairs, claspers pale cinnamon-brown.

Forewing: basal two-thirds between vein 1 and subcostal nervure almost hyaline white, rest of wing yellow, thickly but unevenly powdered with single brown scales, discocellulars brown.

Hindwing semihyaline pale sulphur yellow, much more thickly scaled on outer third of wing.

♀. Similar, but thorax darker, basal two-thirds of forewing not even quite semihyaline, and abdomen glossy black, ringed with grey and practically without scales on anal half and clothed on dorsal part of basal half with long dark brown hairs.

Length of forewing : ♂ 33–35.5 mm. ; ♀ 35–36 mm. Expanse : ♂ 75–80 mm. ; ♀ 78–80 mm.

Hab. Monte Tolima, 3200–3500 metres = 10,400–11,375 ft., Colombia, January–February 1910 (A. H. Fassl.).

27. *Halisidota cirphoides* spec. nov.

♂. Palpi brown ; antennae amber-brown ; head and thorax dark golden buff, patagia suffused with pale brown ; abdomen brownish golden buff.

Forewing straw-yellow, veins darker ; a shadowy violet grey-brown somewhat broken line from base through middle of cell to vein 6 before subterminal row of dots, where it is abruptly angled upwards and proceeds to apex as a wide brown band, a subterminal row of shadow dots leaden grey, termen brown.

Hindwing satiny semihyaline buff.

Length of forewing : 22.5 mm. Expanse : 51 mm.

Hab. Monte Tolima, 3800 metres = 12,300 ft., Colombia, February 1910 (A. H. Fassl.).

28. *Diacrisia decemmaculata* spec. nov.

♂. Pectus golden ; palpi yellow with black tips ; antennae testaceous buff ; head golden yellow ; thorax buffish grey ; tegulae golden, a black spot on the patagia ; abdomen buffish golden, two basal segments buffish grey.

Forewing grey, a black spot at end of cell and a somewhat smaller one above vein 4.

Hindwing more thinly scaled greyish white, a black spot at end of cell and a minute black dot above vein 5 ; a similar dot is present on the underside below vein 2, but only faintly shows through above ; buff hairs in abdominal area.

Length of forewing : 16 mm. Expanse : 36 mm.

Hab. Ubanghi River, Congo Free State.

29. *Estigmene stygioides* spec. nov.

♂. Antennal shaft dark brown, long pectinations black ; head orange ; thorax cinnamon orange-brown ; abdomen orange ringed with black, black patch on anal segment.

Forewing brownish cinnamon-orange.

Hindwing semihyaline whitish grey on basal two-thirds, outer third and abdominal area sooty grey-black.

Length of forewing : 13.5 mm. Expanse : 31 mm.

Hab. Abiusi, River Benue, Nigeria, September 9, 1912.

The types of all the 29 species described above are in the Tring Museum.

NEW AFRICAN *GEOMETRIDAE*.

BY LOUIS B. PROUT, F.E.S.

SUBFAMILY OENOCHROMINAE

1. *Debos purpureofusa* spec. nov.

♂, 16 mm. Head and palpus orange-brown; palpus rather shorter than in *iratus* Swinh. Thorax and abdomen above concolorous with wings, beneath (with legs) orange-brown.

Forewing with SC¹ running into C; glossy dark fuscous (in some lights blackish), shot with strong purple reflections, especially along costal and distal margins.—*Hindwing* with C anastomosing with SC to about middle of cell, concolorous with forewing, the purple reflections strongest distally and in abdominal region.

Underside without purple reflections.

Portuguese East Africa: Kola Valley, April 5, 1913 (S. A. Neave). Type in coll. Brit. Mus.

Certainly near *D. iratus*, although the venational differences could be made the basis of a separate genus.

Adesmobathra gen. nov.

Characters of *Zeuctophlebia* Warr., with the following differences:

Frons strongly protuberant. Second joint of palpus more shortly scaled. Male antenna shortly ciliated. Male hindtibia strongly dilated, with terminal spurs obsolete. Forewing with apex rather more acutely produced. Hindwing with C rather more shortly approximated to SC, SC² arising rather farther before end of cell.

Type of the genus: *Adesmobathra ozoloides* sp. nov.

A very interesting genus, probably throwing light on the origin of *Ozola*, which has hitherto stood isolated and was made by Meyrick the type of his family [subfamily] *Desmobathridae*. The species has precisely the facies, scaling, etc., of *Ozola*, but the costal vein of the hindwing is typically Oenochromine, and the ♀ hindleg and the venation of foreleg are less specialised than in *Ozola*. The genus may be placed after *Zeuctophlebia*.

2. *Adesmobathra ozoloides* spec. nov.

♂ ♀, 25–27 mm. Face whitish grey, mixed with brown. Palpus whitish grey, above mixed with brown. Antenna brown-grey. Vertex and collar mostly brown. Thorax and abdomen whitish grey, irrorated (the abdomen above somewhat banded) with brown.

Forewing whitish grey, irrorated with brown; lines fine, brown, mixed with fuscous; antemedian from before one-third costa, oblique outward, angled sub-costally, slightly curved inward at hindmargin; postmedian from three-fifths costa, forming in its anterior half a very strong, curved, outward projection, behind the cell extremely slightly incurved, then straight to three-fifths hindmargin; a very faint additional line connate with this at costa, less strongly oblique outward,

meeting it behind R^1 , then forming an inward curve, meeting it again at hind-margin; cell-mark obsolescent; an ill-defined subterminal spot between R^1 and R^2 , accompanied by a smaller one anteriorly and posteriorly; terminal dots blackish, elongate, especially the anterior ones; fringe dark-mixed.—*Hindwing* with the postmedian line running nearly straight (faintly sinuous in posterior half) from just beyond middle of costa to three-fifths abdominal margin; an additional line, rather less sharp, starting with it (on distal side), angled outward on R^2 midway between it and termen, then slightly sinuous to abdominal margin near tornus.

Underside more coarsely irrorated, the markings reproduced but in reverse distinctness—antemedian and postmedian lines very fine and rather weak, the supplementary line strong.

Lindi, German East Africa, ♂ (type) and 3 ♀♀ in coll. Tring Mus.

Very suggestive, except in its broader, less strongly falcate forewing, of a pale, sharply-lined *Ozola microniaria* Walk., or even of *O. macariata* Walk.

Ozola Walk.

It has been overlooked that the African representative of this genus (*pulverulenta* Warr., *Nov. Zool.* iv. 30) forms a separate section, differing in the absence of the median spur in both sexes, and the less dilated ♂ hindtibia. It would even be possible on this ground to constitute a new genus. The species about to be described shares this structure.

3. *Ozola occidentalis* spec. nov.

♂, 20 mm. Akin to *pulverulenta* Warr., but with somewhat shorter antennal ciliation (not longer than diameter of shaft), hindtibia not appreciably dilated. Wings somewhat narrower.

Forewing with termen less markedly sinuate, lines present, though not definite, subterminal marked with some black dots, about as in *microniaria* Walk., etc.—*Hindwing* with postmedian line curving more strongly outward posteriorly, so as to reach abdominal margin nearer the tornus.

Bitye, Ja River, Cameroons, 2000 ft., September—November 1911. Type in coll. Tring Mus.

4. *Aletis helcita contractimargo* subsp. nov.

Black distal borders narrowed, that of the hindwing in general measuring 4–5 mm., that of the forewing proximally rather strongly bent in middle, as in *erici* Kirby.

Uganda, in various collections. Type from Port Alice, in coll. Tring Mus.

Curiously parallel to *erici* from the same locality, though distinguishable by the crenulate proximal edge of the black border of the hindwing as well as (in the ♂) the antennal structure. Generally of a less orange tint than *erici*, the white spots in distal border sometimes much reduced.

5. *Cartaletis nigricosta* spec. nov.

♂♀, 48–60 mm. Build rather robust. Head black. Antenna in ♂ with rather short, moderately stout pectinations, in ♀ strongly serrate. Thorax black, with a white spot on tegula and some inconspicuous white spotting beneath. Abdomen black, with a dorsal and a lateral row of white spots.

Forewing very pale buff, fading to whitish; costal margin black as far as SC; the usual black apical patch rather more obliquely edged than in *libyssa* Hopff., the contained white spots as in *libyssa*.—*Hindwing* concolorous, the black border as in rather narrow-bordered *libyssa*, the contained white spots rather broader in the ♀ than in the ♂.

Underside the same, except that the costal margin of the forewing is only very slightly mixed with black.

Nyassaland: Mlanje Plateau, 6500 ft., December 18, 1913 (type ♂ and 4 ♀ ♀), December 17, 1913, 2 ♀ ♀; Mount Mlanje, December 23, 1912. All in coll. Brit. Mus.; collected by S. A. Neave.

6. *Cartaletis tenuimargo* spec. nov.

♂, 42 mm. Head and antenna black; pectinations moderately stout, about twice as long as diameter of shaft. Body black; tegula with a white spot; meso- and metathorax and abdominal somites each with a white dorsal spot; abdomen also with ill-defined white lateral spots.

Forewing slightly broader than in the allies, the costal margin being slightly bulged just beyond the middle, the termen slightly less oblique, the tornus somewhat better defined; ochraceous-rufous with a black apical and distal border; this is 6 or 7 mm. wide anteriorly, but with a very slender proximal continuation for a short distance along costa, narrows rather rapidly (the ground-colour making a curved outward sweep behind R²) and ends in a point at submedian fold; enclosed are a rather narrow white patch from SC⁵ nearly to R³, a very small spot midway between R³ and M¹ and a dot between M¹ and M².—*Hindwing* concolorous, with a very narrow, unmarked black border, near apex scarcely 2 mm. wide, for the most part scarcely 1 mm.

Underside the same.

Kwigwi Island, Lake Kiwu, 1500–2000 m., November 1907 (R. Grauer). Type in coll. Tring Mus.

Superficially—on account of its small size and the lack of white spots in the border of the hindwing—more like *Mesomima* (section of *Terina* ?), but the venation is typically that of *Cartaletis*, except that the connecting bar between C and SC of the hindwing is obsolete, though these remain farther apart than in the *Bracca* group. Abdomen not very robust (section *Leptaletis*).

7. *Cartaletis gracilis variegata* subsp. nov.

Differs from name-typical *gracilis* (Sierra Leone and Gold Coast) in that the ochreous markings are more deeply and brightly coloured (tawny or inclining to rufous) and commonly much extended. In *gracilis gracilis* there is no ochreous colour on the hindwing, on the forewing there is often only the ill-defined basal patch, while the additional markings, when present, consist of at most two small patches (much oftener one only) in the black apical patch proximally to the white spots; in *g. variegata* the basal patch is extended, better defined, continued on the hindwing (though here usually small), the two tawny spots in the black border are rarely absent, often confluent and not rarely extended into an interrupted or continuous tawny band across the wing. Sometimes also the veins are in part blackened.

Bitye, Ja River, Cameroons, April—June 1910, lesser veins (G. L. Bates), type ♂ in coll. Tring Mus. Several others (both sexes) from the same locality, coll. Tring Mus. et coll. L. B. Prout.

SUBFAMILY HEMITHEINAE

8. *Pingasa hypoxantha* spec. nov.

♂, 47–51 mm. Head whitish, the face and upperside of palpus mixed with ochreous. Collar and patagia ochreous, thorax and abdomen mostly whitish.

Forewing white, with scattered rufous-ochreous, more or less black-mixed scales; lines formed of accumulations of the same scales, sometimes (especially the postmedian) much more strongly black-mixed; antemedian placed as in most of the genus, angled outward in and again behind the cell, rather variable, the angles generally moderate or rather sharp; discal mark distinct, elongate; postmedian line from costa midway between antemedian and apex, with small outward teeth on the veins, oblique outward to R^1 , here slightly angled, from R^1 forming a broad, shallow outward curve, somewhat incurved behind M^2 , reaching hindmargin midway between antemedian line and tornus, or nearer the former; subterminal line strongly dentate, feeble, indicated by weak rufous or greyish proximal shading; terminal line slight, waved, thickened into dots between the veins; fringe unspotted.—*Hindwing* with the cell-mark smaller, weak, sometimes obsolete; postmedian line curved almost parallel with termen, the outer teeth strong; the rest as on forewing.

Both wings beneath white, at the base shaded with bright yellow, which sometimes extends to the middle of the wing and even shows itself in isolated spots against the dark borders. Forewing with cell-mark strong; a blackish, not very intense terminal band, enclosing a white apex; extending from costa to R^3 and often with a narrow submarginal extension to M^1 or M^2 ; terminal dots present, variable in strength. Hindwing with cell-mark weak or wholly wanting, dark border restricted to confluent or isolated spots on R^1 and R^2 , and sometimes small isolated ones on M^2 and SM^2 .

Rau, Nandi Country, February 23–24, 1899 (Dr. Ansonge), 12 ♂♂ in coll. Tring Mus., determined by Warren as *rhadamaria* Guen., to which variable species it bears much resemblance on the upperside (though the outward sweep of the postmedian line is differently formed), but which has a deep black band on the face and clear white underside with extended black borders.

As **subsp. holochroa** I describe a form from Bopoto, Upper Congo, 1898 (Rev. K. Smith), in which the upperside is more strongly marked, more shaded with rufous proximally to the subterminal line, and with grey distally hereto, the undersurface almost entirely orange-yellow, with an interrupted black border, containing on the forewing merely some small white spots at apex, midterms and near tornus and on the hindwing a very narrow, in places interrupted, white distal margin. Type in coll. Tring Mus.

9. *Comibaena rufitorvus* spec. nov.

♂, 28 mm. Head green, the face sprinkled with red on sides and lower part, the palpus white, strongly mixed with red except at base. Antenna whitish, the shaft with a few reddish dots proximally; pectinate to the twenty-fifth joint (in *leucospilata* to the twenty-third). Thorax above green, abdomen with a reddish-

fuscous saddle across first segment, third and fourth segments above reddish, each with a whitish spot, which is partly fuscous-edged. Femora spotted with reddish fuscous at middle and extremity; foretibial tuft red, mixed with fuscous; foretarsus tinged with reddish, the extremities of the joints white; hindtibial process fully two-thirds as long as first tarsal joint (in *leucospilata* one-half first tarsal joint).

Forewing with SC¹ free or anastomosing slightly with C, SC² arising just before SC⁵, R¹ connate, M¹ almost connate; green, with strong transverse whitish strigulae; lines whitish, formed as in *leucospilata* but very feeble; discal spot red, slightly diffused (approaching that of *rhodolopha* Prout), its centre blackish; terminal line red, somewhat crenulate, extending 1 mm. round apex and swollen at tornus into an elongate, narrow spot; fringe white, strongly spotted with red at the vein-ends and at tornus.—*Hindwing* with termen evenly rounded, waved; M¹ connate or stalked; as forewing, but with the white lines obsolete, the terminal line not extended round apex nor swollen at tornus.

Underside somewhat more whitish, not strigulated; hindwing with indications of a green postmedian band.

Nairobi (F. J. Jackson); 2 ♂♂ in coll. Tring Mus.

Very near *leucospilata* Walk., differing in the antenna, hindtibia, fuscous blotch on first abdominal tergite, stronger whitish strigulation, larger cell-spot, and crenulate (at termen swollen) terminal line.

10. *Omphax idonea* spec. nov.

♂, 31–36 mm.; ♀, 38 mm. Face and palpus deep red. Vertex white; occiput green. ♂ antenna closely lamellate. Thorax above green; abdomen whitish ochreous, first tergite and part of second green, second and third (sometimes also the fourth) each with a very small, light-red crest. Foreleg mostly red; middle- and hindleg red on outer side, the femur darkest, hindtibia pale or pale-mixed.

Wings rather narrower than in *plantaria* Guen., approaching the shape of *bacoti* Prout.—*Forewing* with apex not produced, termen smooth; SC¹ free; opaque green, a little brighter and more yellowish than in *plantaria*; costal edge narrowly ochreous, not mixed with red; fringe narrowly ochreous (sometimes with some greenish admixture) at base, otherwise uniform rose-colour, or only very slightly darkened in middle, at tornus becoming partly or entirely green.—*Hindwing* with termen nearly smooth, only slightly waved anteriorly; concolorous with forewing; fringe as on forewing.

Underside with hair-scales copious and long, towards base dense; green, fading to ochreous; costal margin of forewing (to SC) ochreous, at base for a short distance red.

Johannesburg (J. P. Cregoe), 4 ♂♂ and 1 ♀ in coll. Brit. Mus., ex coll. Distant. Also a discoloured ♂ from Lydenberg, from the same collection.

Best distinguished by its shape and less varied termen and fringes.

SUBFAMILY STERRHINAE

11. *Somatina fraus* spec. nov.

♂, 29 mm. Face dark red above and on sides, whitish below. Palpus dark red above, whitish beneath. Crown reddish. Antennal shaft whitish, slightly mixed with reddish in places; ciliation rather short. Collar tinged with ochreous.

THORAX, abdomen, and legs white; foreleg red on inner side; hindtibia moderately long and slender, without spurs, tarsus not abbreviated.

Forewing with distal areole small, SC^2 arising from stalk of SC^{3-5} ; white, with a slight blue or violet iridescence, caused partly by the rather thin scaling but chiefly by the presence of scattered iridescent bluish-silvery scales; sparse grey irroration; costal edge very narrowly ochreous-brownish; markings grey, not very sharply defined, being formed by condensation of the irroration; antemedian line obsolescent; median line broad, excurved anteriorly (distal to a small but sharp black cell-dot), rather oblique to hindmargin proximally to middle; suggestions in middle of wing of a duplicating line distally to this; postmedian line wavy, 2-3 mm. distant from termen; proximal subterminal line fairly distinct, somewhat lunulate-dentate, especially in anterior half; distal subterminal weaker: termen with interneural black dots and minuter, weaker ones at vein-ends; fringe white, very feebly spotted with grey opposite the veins.—*Hindwing* with SC^2 connate with R^1 ; as forewing, the median shade proximal to the cell-dot, very slightly inbent in anterior half, straighter in posterior, reaching abdominal margin about the middle.

Underside white; costal margin of forewing ochreous.

Oubangui-Chari-Tchad: Bangui. Type in coll. L. B. Prout.

Without examination of the venation, this would certainly be taken for a rather robust-bodied *Scopula*.

12. *Scopula (Pylarge) ruficolor* spec. nov.

♂, 25 mm. Similar to *irrufata* Warr. (*Nov. Zool.* xii. 391, as *Sterrha*), and agreeing in essential structure—antennal ciliation long, hindtibia with a pair of well-developed spurs. Differing in its larger size, longer and narrower forewing, with more oblique termen, less rounded hindwing (somewhat sinuous, at least between the radials, and appreciably produced in middle, with minute tooth at R^3), brighter rufous colour, with the coarse dark irroration much less dense, more distinct lines and paler, less uniform underside (the markings slightly showing through).

Johannesburg, 6000 ft. (J. P. Cregoe). Type in coll. Brit. Mus.

I have also seen a worn example from the same locality in coll. S. Afr. Mus.

13. *Traminda syngenes* spec. nov.

♂, 26 mm. Head and body mostly flesh-coloured, abdomen pale beneath. Hindfemur densely clothed with long hair, which becomes tinged with reddish distally; hindtibia with strong, largely red hair-tuft, the inner proximal spur broadened and flattened.

Forewing with termen sinuate in anterior part, bluntly elbowed at R^3 ; flesh-colour, broadly but indefinitely suffused, except towards base and hindmargin, with olivaceous (probably variable between these two colours, as in several of the genus); costal margin with minute dark dots, especially proximally; scattered and very minute dark irroration elsewhere; a very fine grey antemedian line traceable at one-third hindmargin, rather oblique outward; a small white, dark-ringed discal dot; a very fine grey line from three-fifths hindmargin, rather more oblique than termen, to R^1 , then very gently curving, becoming faint at costa; a fine whitish line edging the postmedian distally; a subterminal series of small blackish vein-dots, slightly incurved in posterior half.—*Hindwing* quadrate, almost right-angled at R^3 ; fleshy, with weaker olivaceous suffusions; a very small

white cell-dot ; the double postmedian line antemedian ; the row of dark vein-dots excurved, about halfway between the line and termen.

Underside whitish grey, costal margin and apical half of forewing and distal area of hindwing with an olive-ochreous hue, the pale part of forewing with a very slight pinkish tinge and with slight grey strigulation ; both wings with dark grey subterminal line, that of forewing gently incurved in posterior half, that of hindwing strongly curved, so as to be but little farther from termen at the angle than in the rest of its course, throughout placed nearer to termen than the vein-dots of upperside.

Oubangui-Chari-Tchad : Bangui. Type in coll. L. B. Prout.

Superficially like some colour-forms of *T. vividaria* Walk., *List Lep. Ins.* xxiii. 800 (= *nigripuncta* Warr., *Nov. Zool.* iv. 225 = *variegata* Swinh., *Tr. Ent. Soc. Lond.* 1904, p. 562 *), except in the sinuate termen and white cell-dot of forewing. But whereas that species has a simple ♂ hindleg, that of the present species agrees with the more typical members of *Traminda* (Saalm., *Lep. Madag.* p. 496, indescr., Warr., *Nov. Zool.* ii. 100 = *Gnamptoloma* Warr., *Nov. Zool.* ii. 95), *obversata* Walk., *List Lep. Ins.* xxiii. 790 (= *atroviridata* Saalm., *Ber. Senckenb. Ges.* 1879-80, p. 293 = *glauca* Warr., *Nov. Zool.* iv. 64 = *striata* Warr. iv. 220), *aventiaris* Guen., etc. Really quite close to *neptunaria* Guen., which is much larger, always green, with outer line less curved, etc., and which occurs, without geographical variation, throughout a wide area in Africa (Abyssinia to Natal, Sierra Leone, Nigeria, Cameroons, etc.).

SUBFAMILY LARENTIINAE.

14. *Ortholitha subrectiaria recta* subsp. nov.

♂ ♀, 26 mm. Differs from name-typical *subrectiaria* Walk. (*List Lep. Ins.* xxiii. 964) in having the subbasal and antemedian lines of the forewing straight or almost straight. In addition, the colour is somewhat greyer (less brownish) and the median band is more noticeably darkened between the radials distally to the cell-dot.

Madagascar : Antananarivo, type ♂ ; Moramanga, ♀. Both in coll. L. B. Prout.

15. *Epirrhoe edelsteni* spec. nov.

♂ ♀, 27-28 mm. Face roughened, but without definite cone. Palpus shortish, heavily scaled, third joint very small, not distinct. Antenna in ♂ slightly thickened, with very minute ciliation. Head and body concolorous with wings.

Forewing of moderate width ; light ochreous brown, tinged with reddish and strongly irrorated with dark fuscous ; lines dark fuscous, numerous, waved or crenulate, not sharply defined ; basal area scarcely differentiated, scarcely appreciably darker than subbasal ; central band about 4 mm. wide at costa, 3 mm. or rather less at hindmargin, the lines on it slightly darkened, especially those at its edges, which are limited each by a fine pale line ; proximal edge of the band little curved, distal slightly bilobed outward in middle, but less strongly than in *Mimoclystia undulosata* Warr. ; cell-mark present but not sharp ; distal area beyond the outer whitish line narrowly pale rufescent, then fuscous, with traces of fine, ill-

* Swinhoe, *loc. cit.*, erroneously sinks *vividaria* Walk. (misprinted *viridaria*) to *neptunaria* Guen. The synonymy here given is new, based on examination of types.

defined whitish subterminal line ; small rufescent terminal spots at vein-ends, a pair of fuscous dots or dashes at each vein ; fringe slightly mottled, with a fine pale line at its base and another beyond middle.—*Hindwing* moderately broad, greyish fuscous, with a double paler, more rufescent postmedian band, which is scarcely bent in middle ; lines very weak ; termen and fringe as on forewing.

Both wings beneath more sharply marked, largely greyish-fuscous, but with a postmedian band (faintly bisected), some incomplete lines in median area and a fine subterminal (broader and more distinct at costa of forewing) remaining whitish-ochreous ; postmedian line little angled on R^3 .

Cape Colony : Thaba'nchu, October 12, 1914, at light (G. Edelsten), type ♂ in coll. L. B. Prout ; Deelfontein, March 6 and 8, 1902 (Colonel Sloggett), 2 ♀ ♀ in coll. Brit. Mus.

The British Museum examples have stood in the series of *Mimoclystia undulosata* Warr. (*Nov. Zool.* viii, 14), to which it bears a close resemblance, differing, however, in the non-biangularate discocellulars of the hindwing, less reddish colouring, less sharp markings and less irregular postmedian line of both wings.

16. *Chloroclystis lita* spec. nov.

♂ ♀, 18–21 mm. Face with projecting cone ; light ochreous brown, marked with dark fuscous. Palpus one-and-a-half times diameter of eye ; mostly fuscous. Head and body light brown, more or less irrorated or mixed with fuscous.

Forewing of ♂ without secondary sexual modification of costal margin, which is merely slightly more shouldered near base than in the ♀, the underside with a small tuft of hair from near base of SM^2 , extending across M and suggestive of an exaggerated ♀ retinaculum ; whitish grey, with fuscous irroration, which in the narrow areas bounding the median is almost confined to the bisecting lines ; a slightly darkened basal patch ; a narrow, ill-defined, sub-basal ochreous brown or somewhat ferruginous band ; a moderately broad, darkened median band, traversed by about five wavy, interrupted dark lines, the first (the antemedian) very gently excurved, the last (the postmedian) angled outward behind R^3 , incurved between this and SM^2 , noticeably marked with thick dashes or elongate spots on the veins ; distal area clouded with fuscous in anterior half, except for a proximal patch of ochreous brown from SC^5 across R^1 , less clouded in posterior half, with a narrow band of ochreous brown proximal to the almost obsolete subterminal line ; thick, but not sharp, dark dashes at termen between the veins ; terminal line fine, scarcely interrupted ; fringe darkened proximally, except for pale markings at vein-ends.—*Hindwing* with termen moderately rounded, slightly straighter between SC^2 and R^3 ; a dark mark close to base ; median band only represented by the lines, the outermost thick, except at costa, acutely angled behind R^3 ; distal area nearly as on forewing but with less clouded apex.

Underside more glossy, weakly marked, especially the forewing, which is slightly darkened ; both wings with thick postmedian line indicated, traces also (at least on hindwing) of other lines.

Natal : Estcourt (J. M. Hutchinson), both sexes in coll. Brit. Mus., including the type ♂. Also from other localities in Natal, Transvaal, and Cape Colony. Long misidentified by me as the West African *marmorata* Warr. (*Nov. Zool.* vi, 38), founded on a ♀, but which I find has a strong midcostal protuberance and tuft of hair in the ♂.

SUBFAMILY GEOMETRINAE

17. *Microligia luteitincta* spec. nov.

♂ ♀, 30–34 mm. Larger than *dolosa* Warr. (*Nov. Zool.* iv. 125), palpus and frontal tuft rather longer, ♂ antennal pectinations very slightly longer. Head and body concolorous with wings.

Forewing very pale yellow or ochreous, the irroration generally slighter than in *dolosa*, much more uniform, never forming patches or streaks between the veins; no markings except the oblique grey apical dash, which is rather variable in length and strength, occasionally almost obsolete.—*Hindwing* uniform pure white.

Forewing beneath variable; uniform dirty whitish or (except posteriorly to M and M²) smoky; in the former case sometimes with the oblique dark dash reproduced, in the latter with an oblique pale streak posteriorly to the position of the dash; in one aberration, SC is marked with a fuscous line. *Hindwing* beneath white, slightly less pure than above.

Cape Colony: Harding, January 1903 (Mrs. Blakeway), type in coll. Brit. Mus.; Grahamstown, October 1902 (Miss M. Daly), etc.

18. *Drepanogynis strigulosa* spec. nov.

♂, 32 mm. Head and body concolorous with wings. Palpus with third joint moderate, exposed. Abdomen not very slender.

Forewing shaped as in the group of *chromatina* Prout (*Ann. Trans. Mus.* iii. 212), to which group in all respects the species belongs; R² arising before the middle of the discocellulars; as far as the postmedian line pale fleshy-ochreous with rufous suffusions, densely strigulated, especially in the median area, with olivaceous grey; lines darker grey, thick, cloudy; antemedian from one-third costa to one-third hindmargin, forming a deep outward curve; postmedian at costa 2 mm. from apex, at hindmargin less than 2 mm. from tornus, forming a very gentle inward curve between R² and hindmargin; cell-dot small, blackish; distal area whiter, with sparser strigulation; fringe again of the prevailing tone.—*Hindwing* whitish in costal region, the rest more as on forewing, but duller; cell-dot small, not sharp; postmedian line dark, but not sharply defined, double, commencing at R¹ and terminating at hindmargin close to tornus, forming a gentle inward curve.

Both wings beneath whitish, with fleshy suffusions, the hindmargin of forewing and the distal area (especially of forewing) remaining whiter; strigulation rather weaker than above; lines weak; cell-dot of hindwing sharp.

Cape Colony: Deelfontein, March 6, 1902 (Colonel Sloggett). Type in coll. Brit. Mus. A second example, with the ground-colour rather deeper ochreous, from Fraserburg, April 1885 (E. G. Alston).

19. *Drepanogynis monas* spec. nov.

♂, 46 mm. Nearest to *incondita* Warr. (*Nov. Zool.* xi. 476, as *Dyscia*), larger, face tufted, antennal pectinations not quite so extreme in length, fillet between antennae white.

Forewing with termen rather more gibbous than in *incondita*, dark irroration less dense, postmedian line rather farther from termen, not crenulate, very finely pale-edged distally, terminal line wanting.—*Hindwing* concolorous, cell-dot obsolete above and beneath, postmedian line formed and placed nearly as on forewing.

Cape Colony : Grahamstown (from the Albany Museum), type in coll. Brit. Mus.

A ♀ from the same source and one from Namaqualand (Cochrane, ex coll. Distant), both in the same collection, are still larger (54 mm.), antenna simple, forewing with apex produced, some blackish clouding indicating the position of the antemedian line and again distally to the postmedian at apex and posterior half; hindwing with blackish clouding distally to the posterior half of postmedian line.

20. *Eupagia curvifascia* spec. nov.

♂, 32 mm. Build less robust than in the type species (*determinata* Walk.), pectus and femora less densely hairy, antennal pectinations less long. Head and body concolorous with wings, palpus brighter ochreous, with a slight reddish admixture on outer side.

Forewing with termen almost smooth, slightly sinuous, rather strongly curved and oblique posteriorly; ochreous, with very sparse blackish irroration; costal margin at base more reddish; lines almost black, with a slight reddish admixture; antemedian rather thick from cell-fold to hindmargin, obsolete anteriorly, curving outward a little from SM^2 to hindmargin; postmedian from four-fifths costa, parallel with termen to R^1 or R^2 , then forming a gentle inward curve; accompanied proximally throughout its length, except at costal extremity, by a bar of the same colour, about 1 mm. in width; cell-dot almost obsolete; a blackish dot at apex, terminal line otherwise almost obsolete; fringe somewhat chequered with grey.—*Hindwing* with termen almost smooth, slightly waved in its anterior half; very slightly paler than forewing; markings obsolete, except the postmedian line, which is present from R^1 to hindmargin, slender anteriorly, slightly less so posteriorly, but nowhere accompanied by a dark bar.

Underside similarly but less sharply marked.

Cape Colony: Grahamstown. Type in coll. Brit. Mus., received from the Albany Museum.

21. *Biclavigera deterior* spec. nov.

♂, 29–32 mm. Closely akin to *praecanaria* H.-Sch. (= *rufivena* Warr., *Ann. S. Afr. Mus.* x, 24, nov. syn.), from which I have not yet been able to discover any constant structural difference, unless the apical claws of the foretibia are somewhat slighter; in the type specimen of the new species vein SC^{1-2} of the forewing is connected at a point with the stalk of SC^{3-5} , but in the other example it remains free, as in all the *praecanaria* I have examined.

Forewing nearly uniform reddish brown or purplish brown, the pale parts almost entirely obliterated, the dark fuscous irroration slight and inconspicuous; the veins, which in *praecanaria* are bright reddish ochreous, are here whitish ochreous, dark-dotted; costal edge irrorated, as in *praecanaria*; first line nearly as in that species; postmedian much straighter, not lunulate, nearly parallel with termen throughout (in *praecanaria* markedly oblique inward in posterior part), marked with fuscous dashes on the veins, not accompanied distally by any pale shade; subterminal line rather better developed than in *praecanaria*; fringe less sharply chequered.—*Hindwing* showing the same colour-differences as forewing.

Both wings beneath still more uniform, almost markingless except for the dotted costal edge of forewing.

Foot of Nieuwveld Mountains, 5 miles N. W. of Beaufort West (Mrs. Butt). Type in coll. Brit. Mus. I have seen a second male, without locality label.

22. *Hemerophila ochriplaga* spec. nov.

♀, 50 mm. Structure of *H. serrataria* Walk. (*List Lep. Ins.* xxi. 412), from Natal, but much larger, costal margin of forewing rather straighter, apex more pointed, distal margin more oblique, distal margin of hindwing still more strongly dentate. Ovipositor strong, exerted. Head and body concolorous with wings, the face and palpus more infuscated.

Forewing with SC^{1-2} coincident; light ochreous brown, clouded over almost throughout with dull grey, leaving clearer the margins and especially a subquadrate spot of 2-3 mm. diameter between SC^5 and R^1 just proximally to the subterminal line; lines fine and not very conspicuous, blackish; antemedian from one-third costa, curved in cell, becoming strongly oblique inward and slightly sinuous, reaching hindmargin at one-fifth; postmedian oblique inward from seven-ninths costa, very shallowly sinuate inward before and behind SC^3 , forming an almost rectangular projection at R^2 , a long, very shallow sinus inward between R^2 and M^2 , and a deeper sinus inward between M^2 and SM^2 , reaching hindmargin at about two-fifths; faint indications of a dark median shade and of some dark shading proximal to the indistinct, pale, lunulate-dentate subterminal line; terminal dark line weak, interrupted; fringe narrowly clear at base, otherwise with dark irroration.—*Hindwing* less suffused, except in distal area; median shade faintly indicated; postmedian line fairly strong, very feebly crenulate in places, approximately parallel with termen except towards abdominal margin, where it bends towards the tornus.

Underside duller, almost without markings, except that both wings show a rather elongate, ill-defined cell-spot, strongest on the hindwing.

Oubangui-Chari-Tchad: Bangui. Type in coll. L. B. Prout.

A ♀ from Biteye, Ja River, Cameroons, too damaged to describe, has long stood in my collection; except that it is slightly smaller (46 mm.) and has stronger terminal line on both wings, it agrees excellently with the type.

23. *Ectropis amphitromera* Prout

This species was described (*Ent.* xlv. 294) from the ♀. I have now seen the ♂ from Biteye, Ja River, Cameroons, and am able to confirm its showing the usual ♂ characters of *Ectropis*. The antennal ciliation is sessile, of about the length of diameter of shaft, the spine over basal cavity of abdomen strong. The abdomen is slender and markedly elongate, extending well beyond the hindwing.

24. *Myrioblephara prospila* spec. nov.

♂, 23 mm. Face whitish. Palpus rather short; fuscous, whitish beneath. Antenna not dentate, the ciliation about three times as long as diameter of shaft. Crown whitish. Collar more brown. Thorax whitish, above strongly mixed with fuscous. Abdomen mostly whitish, with an interrupted dark belt on second tergite. Foreleg somewhat infuscated, except at ends of joints; hindtibia not dilated.

Forewing with fovea strong; SC^{1-2} coincident; whitish, with scattered dark fuscous irroration; lines dark fuscous, in part mixed with black, arising from black costal spots; antemedian from beyond one-fourth costa, slender, somewhat curved, angled inward in front of SM^2 ; median proximal to middle of wing, traversing the cross-vein, deeply incurved between M and M^2 (retracted to their junction), thick

and oblique inward posteriorly; postmedian from two-thirds costa, chiefly expressed by dashes on the veins, excurved anteriorly, then strongly oblique inward, thick and confluent with median between M^2 and SM^2 , angled outward on SM^2 ; subterminal pale line rather irregularly lunulate-dentate, marked by rather strong, irregular dark proximal shading; some weaker and more interrupted dark shading between subterminal and termen.—*Hindwing* with termen slightly waved, feebly sinuate between the radials; median shade nearly straight, well proximal to the elongate dark cell-mark; postmedian chiefly marked by short dashes on the veins, incurved in posterior part, oblique outward to abdominal margin; distal area as on forewing.

Both wings beneath slightly more ochreous. Forewing with the costal spots and postmedian dashes, a distinct elongate cell-mark and blurred indications of the median shade; proximal part of wing somewhat suffused, distal border rather broadly fuscous, containing apical and central spots of the ground-colour. Hindwing beneath nearly as above.

Madagascar: Antananarivo (coll. Chulliat). Type in coll. L. B. Prout.

Somewhat resembles a miniature *Ectropis spoliataria* Walk., *List Lep. Ins.* xxi. 368 (= *fulvitincta* Warr., *Nov. Zool.* xi. 474), and shows similar (though weaker) yellowish-brown shades proximally to the antemedian line and distally to the postmedian; the postmedian line, however, is formed more as in the Indian *Psilalcis breta* Swinh., and the antennal structure and venation render confusion with *spoliataria* impossible. In that species the ♂ antenna is dentate-fasciculate, with less long cilia, and SC^1 of the forewing arises from SC^2 , anastomosing with C.

25. *Macaria hypactinia* spec. nov.

♀, 29 mm. Face-cone small. Palpus about one-and-a-half times diameter of eye. Head and body concolorous with wings, face and base of palpus whitish beneath.

Forewing with termen not excised, slightly crenulate in anterior part, scarcely waved in posterior; SC^{1-2} coincident, connected by a slight bar with C; dirty white, suffused almost throughout with drab-grey and with rather coarse, but not close, black irroration; lines black; antemedian before one-fourth, almost right-angled outward in cell and feebly inbent on M; median line thicker and less strong, more feebly bent, passing just distally to the deep-black cell-dot; postmedian oblique outward from before two-thirds costa, acutely angulated (though with the extreme apex of the angle rounded off) at R^2 , then forming an extremely slight inward curve, reaching hindmargin at nearly two-thirds; subterminal line thick and white from costa to R^1 , dark-edged proximally, merged into an oblique white apical shade distally, almost entirely obsolete from R^1 hindwards; some whitish mottling in distal area, especially along the veins; terminal black lunules rather strong, separated only by the veins; fringe grey, spotted with white between the veins.—*Hindwing* with termen rather more crenulate than forewing, more weakly posteriorly than anteriorly, bend at R^3 scarcely noticeable; median shade and postmedian line continued, almost straight; some dark shading proximally to the median shade; distal half of wing almost unmarked, a whitish subterminal line and dark shading proximally to it just discernible.

Both wings beneath darker. Forewing marked as above, though with the dark markings less conspicuous, the white apical patch sharper than above; veins in distal area sharply white. Hindwing sharply marked, the median shade, post-

median line and proximal shading of subterminal all being strong, the postmedian followed by a more diffuse, less straight line distally; much white admixture elsewhere, including the whitening of the veins and a broad radial streak from base to termen.

Madagascar: Antananarivo. Type in coll. L. B. Prout.

Distinguished by the very angulated postmedian line and especially by the underside.

26. *Pareclipsis anophthalma* spec. nov.

♀, 38 mm. Larger than *punctata* Warr. (*Nov. Zool.* vii. 97).

Forewing with termen slightly more elbowed, SC^2 anastomosing at a point with SC^{3-4} , ground-colour more rufous, with rather strong grey and blackish irroration, antemedian line not distinguishable, cell-spot smaller, not ocellated, postmedian row of dots not very sharp, termen without black dots, fringe at extremity pure white. — *Hindwing* with termen rather more indented between the radials and bent (almost toothed) at R^3 , more pinkish, very feebly marked.

Underside very pale pinkish grey; forewing with sharp black cell-dot and costal end of postmedian line, which is otherwise almost obsolete; hindwing with minute cell-dot and very weak postmedian series.

Nyassaland: Zomba, February 1911 (Dr. J. E. S. Old). Type in coll. Brit. Mus.

27. *Pareclipsis oxyptera* spec. nov.

♂, 29–30 mm. Face light ochreous brown, somewhat mixed with fuscous below. Palpus not very long; largely infuscated. Vertex pale ochreous brown. Thorax and abdomen concolorous with wings, or rather paler.

Forewing shorter than in *punctata* Warr., with apex more falcate; SC^1 anastomosing with C and with SC^2 , SC^2 also with SC^{3-4} ; rather glossy reddish-fuscous (in an aberration more ochreous-brown); costal edge mixed in places with black, especially at base; lines black; antemedian from before one-fourth costa, oblique outward to middle of cell, here angled, posteriorly somewhat interrupted; postmedian slender, from nearly four-fifths costa, slightly sinuate inward in posterior part; sometimes slightly accentuated on the veins; a minute black cell-dot, proximally to which is placed a very weak median shade; termen with interneural black dots; a very slender pale line at base of fringe. — *Hindwing* relatively ample, with termen full in anterior half, straight or faintly subconcave posteriorly; rather paler and greyer than forewing, at least in its proximal part; median shade slender, faint, nearly straight; cell-dot and postmedian line present, the latter scarcely curved; terminal dots and fringe almost as on forewing.

Underside rather variable, generally more weakly marked than upper; cell-dots and postmedian line present, the latter tending to break up into vein-dots.

Cape Colony: Draibosch (type) and Tole (Miss F. Barrett), in coll. Brit. Mus.

28. *Pareclipsis incerta* spec. nov.

♂, 34 mm. General characters and facies of *punctata* Warr.; face rounded, without projecting cone of scales, antenna with moderate, rather slender pectinations. Head and body concolorous with wings.

Forewing slightly narrower than in *punctata*, costal and distal margins straighter, SC^1 and S^2 free; light wood-brown, with sparse dark irroration; lines

represented by blackish vein-dots; three antemedian dots rather large, forming an outward curve; postmedian series 1.5 mm. from termen anteriorly, gradually curving away to almost 3 mm. distant at SM²; a rather strong black discal dot, closely followed by a slender, straightish brown median shade; terminal line very weak and interrupted; fringe weakly spotted opposite the veins.—*Hindwing* concolorous or very slightly paler; cell-dot and median shade weak; antemedian dots wanting, postmedian extremely weak, nearly 4 mm. from termen, accompanied distally by a faintly pale line; termen and fringe as on forewing.

Forewing beneath rather more smoky, narrowly whitish at hindmargin; faint discal and postmedian dots. Hindwing beneath paler, rather strongly irrorated, and with distinct discal and postmedian dots. On both wings the postmedian series is about parallel with and nearly 3 mm. from termen.

Natal: Durban district (W. D. Gooch), 2 ♂♂ in coll. Brit. Mus.

This species and the following may be regarded provisionally as forming a new section (pectinated) of *Pareclipsis*.

29. *Pareclipsis leptophyes* spec. nov.

♂, 30 mm. Structure of the preceding, more slenderly built and still more glossy. Head and body mostly concolorous with wings; palpus infuscated beneath; foreleg infuscated on upperside.

Forewing with costa almost concave in middle, termen rather more oblique than in *incerta*; ground-colour rather paler, antemedian dots less sharp, cell-dot small and weak, no median shade, postmedian dots receding more rapidly from termen after R¹; no terminal line; fringe pale, unspotted.—*Hindwing* almost white, slightly irrorated along abdominal margin and part of distal margin; no markings except a small and indistinct cell-dot.

Forewing beneath slightly more smoky, becoming paler distally to the postmedian dots; discal and postmedian dots indicated, the latter placed as on upperside. Hindwing beneath irrorated throughout, though not densely; cell-dot distinct, though small; a row of vein-dots about 2 mm. from termen.

Cape Colony: Deelfontein, September 22, 1902 (Colonel Sloggett). Type in coll. Brit. Mus.

Melinoëssa H.-Sch.

Melinoëssa H.-Sch., *Samml. Ausseurer. Schmett.* i. 33, 44 (1856).

Rhamidava Walk., *List Lep. Ins. Brit. Mus.* xxvi. 1568 (1862).

Traina Walk., *Proc. Nat. Hist. Soc. Glasgow* i. (2) 372 (1869).

Timana Walk., *Proc. Nat. Hist. Soc. Glasgow* i. (2) 373 (1869).

Hyphenophora Warr., *Nov. Zool.* i. 402 (1894).

I have no hesitation in regarding all the above as constituting a single, perfectly natural genus. Except for trivial differences in shape and differences in pattern, there is almost no variation worth mention, though *Hyphenophora* forms a separate section on account of the non-dilated ♂ hindtibia.

30. *Melinoëssa fulvescens* nom. nov.

Phalaena (Geometra) fulvata Drury, *Ill. Nat. Hist.* iii. index and p. 28, t. 31, f. 4 (1782).

Drury's name was preoccupied (Forster, *Nov. Sp. Ins.* p. 76, 1771). As I believe there are no synonyms to fall back upon, I am compelled to rename the species.

31. *Melinoëssa torquilinea* spec. nov.

♂, 52 mm. Structure quite similar to that of *fulvescens* Prout and *stramineata* Walk. (*Proc. Nat. Hist. Soc. Glasgow* i. (2) 372), including the rather long antennal ciliation. Head and body similar in colouring to those of *stramineata*, slightly more yellowish, upper part of face more fuscous.

Upperside scarcely distinguishable from that of *stramineata* except that the ground-colour is buff instead of whitish—recalling rather wasted specimens of *fulvescens*.—*Forewing* with discal dot small; antemedian line angled just behind SC, thence fine and rather more waved than in *stramineata*; terminal line thick.—*Hindwing* without discal dot; terminal line strong.

Forewing beneath with much less strong irroration from base to postmedian line than in *stramineata*; cell-dot as above; lines fine, subterminal present in its posterior half only, rather faint; a blackish apical cloud, 5 mm. at costa, ending beyond R³; a much narrower terminal cloud from tornus to the fold between R³ and M¹, tapering to a point at each end, spotted with the ground-colour on the folds. Hindwing beneath with postmedian and subterminal lines very feebly indicated, and with small remnants of the terminal cloudings, the anterior one almost confined to the radial region.

Bitye, Ja River, Cameroons, 2000 ft., December 1907—March 1908, dry season. Type in coll. L. B. Prout.

32. *Heterostegane vetula* spec. nov.

♀, 20 mm. Head and body concolorous with wings.

Forewing broad; bright ochreous, with coarse, scattered ferruginous irroration and a fine sprinkling of silvery scales; markings ferruginous; antemedian line fine, oblique outward from costa to cell-fold, here angulated, posteriorly rather weak, sinuate; median rather thick, from before middle of costa to middle of hind-margin, sinuate inward between M¹ and SM²; postmedian fairly direct, quite ill-defined except as vein-dashes pointing distad, the interspaces rather free from ferruginous irroration; subterminal rather thick, projecting (but not confluent with terminal spot) at R², incurved between R² and M¹, confluent with terminal spot between M¹ and M², angled inward on fold, then running to tornus; rather large terminal spots; fringe scarcely marked.—*Hindwing* with first line scarcely indicated, median and postmedian more proximally placed than on forewing, postmedian better developed, bisinuate inward; the rest nearly as on forewing.

Underside similar, but rather duller, without silvery scales.

Madagascar: Antananarivo (coll. Chulliat). Type in coll. L. B. Prout.

Nearest *flavata* Warr. (*Nov. Zool.* xii. 393, the lines less band-like, especially the subterminal, the postmedian of forewing straighter. That species, however, belongs to the specialised African section in which vein C of the hindwing anastomoses to about the middle of the cell, whereas in *vetula* it is free, or touches SC at a point near base only.

SOME NOTES OF A FAUNAL AND OTHER NATURE ON
THE LEPIDOPTERA COLLECTED BY HERR GEYR VON
SCHWEPPEBURG IN THE HOGGAR MOUNTAINS.

BY LORD ROTHSCHILD, F.R.S., PH.D.

THE full list of this collection, with descriptions of new species, was given by me in the October and November numbers of the *Annals and Magazine of Natural History* of 1915. I unfortunately stated there that Herr Geyr von Schweppenburg went "on behalf of Professor Koenig of Bonn," but it seems that Herr Geyr, who accompanied Herr Paul Spatz, was quite independent both as regards his work and its results.

The collection is of great interest, as it proves that in the West at least the Hoggar Mountains are the utmost southern boundary of the Palaearctic Region. We already find a number of tropical forms intruding, as in the East they do in Cashmere, Central China, and South Japan. The most disturbing problem, however, are the true desert species, for while many of them penetrate far north into the heart of the Palaearctic Region, we find these same species spread over many tropical desert areas such as Rajputana, Arabia, and Socotra. Going more into detail,—of the 9 species of **Rhopalocera** collected by Herr Geyr, 3 are purely tropical, viz., *Teracolus helvolus*, *Spindasis acamas divisa* and *Virochala livia*; 2 are purely palaeartic, namely *Pieris ropae* ? *leucotera* and *Colias electo croceus* (*C. e. croceus* is confined to the Western Palaearctic Region, while in tropical Africa from Lado to the Cape it is replaced by *C. electo electo*); 3 are desert forms straggling into the regions of the Hauts Plateaux (Steppes), *Euchloë falloui obsolescens*, *Zizera lysimon*, and *Tarucus theophrastus*, while *Pyrameis cardui cardui* is of almost world-wide distribution from the Arctic Regions to the Cape and from Spain to Australia.

Of the 94 species of **Heterocera** *Celerio lineata livornica* is found over most of the Eastern hemisphere except Australia, where a distinct subspecies occurs; *Casama uniformis* is a pure desert form, as are the 2 species of *Chilena* (the genus is composed of desert forms); among the **Noctuidæ** the 5 species of *Agrotinae* are purely palaeartic and Hauts Plateaux forms, which appear in many places to penetrate into the desert regions; of the *Cucullianae*, *Cucullia santolinae* is palaeartic while the other 4 are desert forms; of the *Acronyctinae*, *Laphigma exigua junceti* is a palaeartic and desert form (*Laphigma exigua* in 3 or 4 hardly separable subspecies occurs from Scandinavia to the Cape of Good Hope, and from Spain to Australia and many Pacific islands); *Azenia sabulosa* is purely a desert species, while the 2 *Athetis* are Hauts Plateaux forms spreading into the desert and Southern Palaearctic Regions as stragglers; all the 6 species of the subfamily *Erastrinae* are pure desert forms, as are also the 12 *Catocalinae*, though *Leucanitis kabyalaria* straggles a considerable distance northwards; of the 2 *Phytometras* *P. gamma* is almost world-wide, and *ni deserticola* is a Hauts Plateaux form penetrating far into the desert; of the 11 species of *Noctuinae* the first 8 are pure desert forms while the last 3 are Hauts Plateaux forms. All the

13 species of **Geometridae** are desert forms, as are the *Amata* and the *Eremocossus*. Finally, of the **Pyralidae**, *Eromena ocella* is almost world-wide, while *Pristarthria brephiella*, *Nomophila noctuella*, and *Noctuelia desertalis* are palaeartic, the remaining 9 being purely desert species.

WHAT IS THE CORRECT NAME OF THE ARABIAN SEA TERN?

By ERNST HARTERT.

THE tenth species of the genus *Sterna* in the *Cat. B. Brit. Mus.* xxv. p. 69 is called *Sterna albigena*, and on p. xiii *Sterna albigena* Licht. Neither the name of the species nor that of the author can be maintained. The species was called *Sterna albigena* by Hemprich and Ehrenberg on the stands in the Berlin Museum. The first time it appeared in print was in 1844, when Boie, in the *Isis*, 1844, p. 179, called it *Hydrocecropis albigena*, and stated that it occurred in the "Mare rubrum." Unfortunately no description was given; but Lichtenstein, *Nomencl. Av. Mus. Berolin.* p. 98, 1854, giving Arabia and Nubia as its home, did not publish a description either. It is therefore inconceivable that Lichtenstein was chosen as the author of the name *albigena* and not Boie, if nomina nuda were adopted. That names without any "indication, definition, or description," so-called nomina nuda, cannot be adopted, is, however, an undisputed rule and basis of nomenclature, and we must therefore look for the first indication. It is true that the first verbal diagnosis is that of Heuglin, in Petermann's *Geogr. Mittheilungen*, 1860, p. 339, and Heuglin there described undoubtedly the Tern under consideration. Unfortunately, however, a figure was published before 1860 (about 1848) by Reichenbach, on pl. xi of the Suppl. to the *Vollst. Naturg. der Schwimmvögel*, Longipennes pl. xxi, forming fig. 816.

Nearly all ornithologists, notably Finsch & Hartlaub, and Heuglin, refused to accept this figure for our bird, but they did not draw from their action the necessary consequence, viz., to refuse the name. Saunders, *Proc. Zool. Soc. London*, 1876, said: "I cannot understand how Finsch and Hartlaub fail to identify Reichenbach's figure in the *Schwimmvögel* with this species; for his illustration, though coarse, is decidedly far more recognisable than theirs in the *Vög. Ost-Afrika's*." Saunders' statement is, however, not in accordance with facts. Reichenbach figured a bird in the "Mus. Goetz." with huge black feet (the toes as long as the beak!), apparently white underside, and of the size of *Sterna bergii*, i.e. 19.9 in. in length, a point which must have escaped Howard Saunders. It is impossible to identify this figure with what is now called *S. albigena*, and the latter must therefore have a new name. I consequently call it

Sterna repressa nom. nov.

This name is meant as a new term for the *S. albigena* of *Cat. B. Brit. Mus.* xxv, p. 69, of Reichenow and other recent authors, the type specimen being a skin in the Tring Museum collected near Fao, Persian Gulf, by Mr. W. D. Cumming.

ON SOME FORMS OF *CORACINA* (*GRAUCALUS* AUCT.)
FROM THE SOLOMON ISLANDS.

BY LORD ROTHSCHILD AND ERNST HARTERT.

I.

IN *Nov. Zool.* 1901, p. 181, and 1905, pp. 263, 264, we have discussed some specimens of *Coracina welchmani* (Fristr.) (*Graucalus welchmani* Tristram, *Ibis* 1892, p. 294, described from Bugotu = Isabel Island). We then already called attention to the facts, that the Kulambangra specimens have longer and slightly slenderer bills, and that the black on the underside of the males is confined to the throat, while in the males of the Bougainville examples it extends on to the chest. To this may be added that the tails of the Kulambangra birds are about 1 cm. longer (measuring about 163 mm.), that the tips to the outer rectrices are less distinctly grey, and that their upperside is a fine shade darker. We have once more compared the type of *G. welchmani*, kindly lent by the authorities of the Liverpool Museum, and find that it agrees well with the Bougainville specimens, though the colour of the upperside is slightly darker, but this may possibly be due to the treatment of the skin. Formerly we hesitated to give a definite name to the Kulambangra form, because we could not see males from Isabel, where Mr. Meek did not come across this species. Though we have to admit the possibility that a series of males from Isabel might reveal some differences from the Bougainville series, it is quite certain that the Kulambangra form is different, and we therefore propose for it the name

Coracina welchmani kulambangrae subsp. nov.

Type ♂ ad., Kulambangra 25. ii. 1901, no. 2796, A. S. Meek coll.

We refrain from giving measurements of the wings, because most of our specimens have the primaries moulting.

It is quite in accordance with the usual rule, that the Kulambangra form differs from that of the north-eastern chain, consisting of the islands Bougainville, Choiseul, and Isabel, which very often have one and the same form. Malaita still remains almost unknown.

II.

In *Nov. Zool.* 1901 pp. 180, 374, 1902 p. 582, 1905 p. 264, and 1908 p. 357, we have mentioned and discussed specimens of a form of what we called *Graucalus hypoleucus*. Mr. Arthur Goodson called our attention to the fact, that this and other allied forms can only be looked upon as forms of *Graucalus* (now *Coracina*) *papuensis*, a name which dates from 1788, while *hypoleucus* was given in 1848.

The birds from the Solomon Islands all differ at a glance from *C. papuensis louisianensis* by having a much less massive bill and darker tail. Those from Guadalcanar, New Georgia, Gizo, and Vella Lavella are, as we called them before, *Graucalus*, or rather *Coracina papuensis elegans* (Rams.), originally described from Guadalcanar. Those from the islands of Florida, Isabel, Choiseul, and Bougainville,

i.e. the north-eastern chain, agree in every detail, except that they are conspicuously paler on the upperside; the underside also is generally almost pure white, but this latter character is variable and uncertain, so that only the lighter upper surface can be depended on. We are therefore obliged to separate the lighter form, and we propose for it the name

***Coracina papuensis perpallida* subsp. nov.**

Type ♀ ad., Bougainville, 6. v. 1904, no. A. 1739, A. S. Meek coll.

The bill and length of wing is very variable in this race; generally the wings are longer in the skins from Florida, the beaks smallest in those from Bougainville, but neither of these characters is, as far as we can judge from our material, constant and reliable enough to make any further subdivisions.

We have now before us the following forms of *Coracina papuensis*:

1. *Coracina papuensis papuensis*: Northern New Guinea, from Arfak to German Papua, also Salwatty and foot of Snow Mountains, on the Setekwa River.—Underside grey, only lower abdomen and under tail-coverts white. Primaries edged with grey. *C. p. stephani* is not separable!

2. *C. papuensis melanolora*: Moluccas (Batjan, Halmahera, Obi, Misol, Ternate, Gebe).—Quite like *C. p. papuensis*, but distinctly larger. Primaries as in *C. p. papuensis*.

3. *C. papuensis sclateri*: New Ireland, New Britain, Rook, New Hanover.—At once distinguishable by large size and beak. Wings darker, edges very little conspicuous.

4. *C. papuensis meekiana*: Northern British New Guinea (Kumusi River).—Primaries as in the foregoing races, chest grey, but lighter than in *papuensis*, throat almost pure white, sides of body lighter. Mr. Ogilvie-Grant, Suppl. *Ibis* 1915, pp. 128, 129, unites *G. papuensis*, *meekiana* and *hypoleucus*, but in this he is doubtless wrong. It seems that he has not understood the description of *meekiana*, and he cannot have compared, as he says, specimens of *hypoleuca* from New South Wales, because the latter does not occur there, and there is no specimen in the British Museum. Apparently he mistook females of *C. robusta* for males of *hypoleuca*, but the latter is never so dark grey on the breast, and has a shorter wing.

5. *C. papuensis ingens* (Rothsch. & Hart., *Bull. B.O.C.* xxxiii. p. 107, 1914): Manus, Admiralty Islands.—Enormous size, primaries dark. Shafts of rectrices black from below.

6. *C. papuensis angustifrons*: Southern British New Guinea.—Unlike *meekiana*, having not the distinct breast-band of the latter, and nearest to *C. p. hypoleuca*, but much smaller. Primaries edged with whitish.

? 7. *C. papuensis mertoni* Berl.: Aru Islands. We have not enough material to judge about this form, but it must be very near to *C. p. angustifrons*, and, if separable at all, only perhaps a shade darker. Count Berlepsch had evidently insufficient material, and had better not have attempted to separate this form in such an intricate group.

8. *C. p. louisiadensis*: Sudest Island, Louisiade Group.—Like *C. p. hypoleuca*, but much larger bill. Wings edged with whitish. (Cf. *Nov. Zool.* 1898, p. 524.)

9. *C. p. elegans*: Guadalcanar, New Georgia, Gizo, Vella Lavella Islands.—Wings shorter than in *hypoleuca*, bill rather more elongate.

10. *C. p. perpallida*: Bougainville, Choiseul, Isabel and Florida Islands.—Like *elegans*, but upperside paler.

? 11. *C. p. timorlaoensis*: Tenimber or Timorlaut Islands.—Unfortunately we have no specimens of this form, but if it is really an inhabitant of Tenimber, its differences are doubtful. Meyer (*Zeitschr. ges. Orn.* i. p. 198, pl. ix) had only two females, and possibly not the real *hypoleuca*, for comparison.

? 12. *C. p. stalkerii* Math.: North Queensland (Cooktown) according to Mathews (see *Nov. Zool.* xviii. p. 327). Said to have a greyer breast than *hypoleuca*, but is, in our opinion, doubtfully distinct, though we have no good series to compare.

13. *C. p. hypoleuca*: Northern Territory of Australia.—Underside very white, primaries edged very light. Very near to *C. p. angustifrons*, but larger.—Mathews separates another form which he calls *Coracina hypoleuca parryi* (*Austral Avian Record* i. p. 43, 1912), from Parry's Creek, in N.W. Australia. He says it is lighter on the upperside ("lighter upper-coloration") than *C. p. hypoleuca*, but we cannot confirm this from comparison of three specimens from N.W. Australia. We have a male and a female from Luang, and two females from Sermatta, which appear to be inseparable from *C. p. hypoleuca*. The former were shot in November, the latter in June, but we do not know whether these birds are inhabitants of these islands, or only stragglers.

THE ALLEGED OCCURRENCE OF *ARENARIA* *MELANOCEPHALA* (VIG.) IN INDIA.

BY ERNST HARTERT, PH.D.

IN the third edition of the *A.O.U. Check-List of North American Birds*, p. 132, in the distribution of *Arenaria melanocephala* (Vig.) is added: "accidental in India." No mention of the occurrence of this species outside of America is made in the *Cat. B. Brit. Mus.*, nor in Dresser's *Manual of Pal. Birds*, nor in Blanford's *Birds of India*, though it has been observed on the coast of N.E. Siberia from the Tschuktschen Peninsula to the Wrangel Islands.

Upon inquiries in America Dr. Witmer Stone kindly gave me the following information:

"The record (of the occurrence of *Arenaria melanocephala* in India) was made by Cassin in vol. ix of the *Pacific Railroad Reports* (B. N. America), p. 702, and was based on a specimen in the collection of Captain Boys. Captain Boys was an officer in the British army in India, and the collection he made there was purchased by Dr. Thomas B. Wilson, a former president of the Academy of Natural Sciences in Philadelphia, to whom we are indebted for the Rivoli, Gould, and other collections, and who was, moreover, a great-uncle of Dr. Wilson of the Scott Antarctic expedition. The specimen in question is now No. 11597 of our collection, and bears a label similar to others in the Boys collection. It reads as follows: '*Strepsilas interpres* young; sex (r).' Evidently the collector was puzzled by the appearance of the bird. Cassin's identification is undoubtedly correct, as the specimen is a typical *melanocephala*. There is no locality on this or any other

of Boys' specimens. The whole collection, however, was made in India, and I have seen no other specimen which gave any indication of having been taken elsewhere than in India."

Captain Boys collected in India. His name is mentioned as donor of specimens to the Museum of the Asiatic Society in Calcutta, in Blyth's catalogue of the Birds in that collection of 1849, on pp. 29, 135, 152, 164, 167, 209, 249. The specimens which he collected were, according to Blyth's catalogue, from Sindh, Ferozepore, Ludiana, the N.W. Provinces. It was Captain Boys, after whom was named the Crested Lark of N.W. India, in the somewhat extravagant combination *Certhilauda Boysii*, by Blyth, *Journ. As. Soc. Bengal*, xv. p. 41 (1846). This form of *Galerida* is now called *Galerida cristata chendoola* (Frankl.), as it was named *Alauda chendoola* by Franklin in 1831.

Cases have often been considered of the origin of specimens in collections supposed or asserted to have come from a certain locality. I believe such specimens have, as a rule, not been admitted to the *Hand-List of Brit. Birds*, or into other lists, and, in my opinion, they cannot be admitted to have come from any definite locality unless they are fully labelled, with sufficient data. Not only is it always possible that a single specimen might have been given or sent by a friend to a collector, who only collected the birds of his country, and who kept this particular specimen because it interested him, or for sentimental reasons; but it is also possible, and it has happened hundreds of times, that a wrong label was placed on a specimen in the museum. Therefore it is, in my opinion, impossible to accept as evidence of the occurrence of *Arenaria melanocephala* in "India" the specimen now in the Boys' collection, merely because the latter was supposed, and seemed, to consist only of Indian birds.

ON THE EUROPEAN FORMS OF *PHALACROCORAX CARBO*.

BY ERNST HARTERT, PH.D.

IN the *Catalogue of Birds*, vol. xxvi., and in all recent works, even in the latest critical list of British Birds by myself, Jourdain, Ticehurst and Witherby, only one European form of *Phalacrocorax carbo* has been recognised. When I began to study Cormorants for my work on the Palaearctic Birds it struck me at once that there were evident differences in size and colour between some of them. In the literature C. L. Brehm first separated the northern and central European Cormorants, and four years later Nilsson distinguished *Phalacrocorax carbo major* and *medius*, saying that the latter was found on the Baltic, and nested on trees in Blekinge, South Sweden, as well as in Denmark.

However, easy as it is to recognise two distinct forms, it is not quite so simple to elucidate their nomenclature and distribution. Linné (*Syst. Nat.*, Ed. X, i, p. 133, 1758) first gave the name "*Pelecanus carbo*," and added: "Habitat in Europa," and in the *Fauna Suecica* 1746, p. 42, he says: "Habitat in maris scopulis, arboribusque insidet." It can hardly be doubted that Linnaeus would have united the two forms, if he had them before his eyes, and he had evidently information about both when he said that they inhabited sea-cliffs and also sat on trees; in 1758 he said, either by mistake or from some new information, "nidificat in altis arboribus"; in considering the name we may disregard this later statement and stand by the first one, of 1746, restricting the name *carbo* for the large cormorant of the size of a goose ("magnitudo anseris"), occurring on the western coasts of Scandinavia, where it inhabits rocks.

What is now the name of the smaller race of Central Europe which there, and in most places of its habitat, nests on trees?

In February 1915 I called Prof. Lönnberg's attention to these two forms, asking for information about Swedish specimens, and he most kindly answered my questions, as far as he could. Prof. Lönnberg, in litt., agreed with me, that we might restrict Linné's name to the larger form from the sea-cliffs of the North Atlantic, and informed me that no specimens existed in Swedish Museums from the former breeding-place in Blekinge, but that Nilsson's name *medius* must refer to the smaller race—though Nilsson, unfortunately, did not mention the different coloration. In an article in a popular periodical, *Fauna och Flora*, 1915, Häft 3, Prof. Lönnberg came to the conclusion that Brehm's name *arboreus*, being older than that of Nilsson, would be available. In my opinion, however, it should not be adopted, and the correct name, being the oldest and absolutely certain one, is Brehm's *subcormoranus*.

In the *Handbuch der Naturgeschichte aller Vögel Deutschlands*, pp. 816-20, 1831, C. L. Brehm distinguished four "Gattungen" or "subspecies" (cf. p. xviii. of the *Einleitung*) of the Cormorant, as follows:

(1) **Die Kormoranscharbe.** *Carbo cormoranus*, Meyer.

Described as large (measurements in inches given) and having a blue-black gloss. Habitat: Iceland and Norway, and young specimens sometimes visit the

shores of the Baltic and North Sea. This form I would call *Phalacrocorax carbo carbo* (L.).

(2) **Die Eisscharbe.** *Carbo glacialis*, Brehm.

Described as being smaller (the measurements showing a slight difference and the bill overlapping) and also having a blue-black gloss, as in No. 1. Habitat: Greenland to Faroë, in winter to Iceland, and from Faroë to the German shores of the North Sea. This is clearly a synonym of *P. carbo carbo* (L.)

(3) **Die Baumscharbe.** *Carbo arboreus*, Brehm.

Described as having the size of *C. glacialis* and the long tail of *C. cormoranus*, but with a more highly-arched skull and shorter bill, also a differently-marked juvenile plumage. Of its distribution Brehm says that it had immigrated into Denmark about thirty years ago (which would mean about 1800), but that it was everywhere persecuted and driven away, laid its eggs in empty nests in heronries, came to the German shores of the Baltic and North Sea, and slept on trees. He adds that it formerly lived by thousands in several places, whence it had been driven away. The question is, whether this name can be adopted. In my opinion it is uncertain; evidently Brehm had only young specimens, and there is nothing in the description to show that the bird described belonged to the smaller form; on the contrary, he distinctly says that it is as large as his *C. glacialis*, with the tail even longer! The Brehm collection contains no specimen from Denmark and only a young bird from Rügen marked as *arboreus*. It is not clear that the bird described was from Denmark and one of those formerly nesting there, and that the information as to its appearance and disappearance referred to birds of the smaller race. We must certainly **assume** that this was the case, because a specimen from Tunen, killed June 1, 1856, and others from Halstein in the Copenhagen Museum, belong to the small race; but we do not **know** whether Brehm described this race, as his description points rather to the contrary. On the other hand, under No. 4 Brehm describes beautifully the Central European race.

(4) **Die kleine Kormoranscharbe.** *Carbo subcormoranus*, Brehm.

Described as being very much smaller than *C. cormoranus*, differing from it as *C. corone* does from *C. corax* in size (Brehm liked striking comparisons), and having a bluish-green instead of blue-black gloss!

It lives and nests in Holland. The collection contains a very fine adult male shot near Rotterdam, May 8, 1823, which agrees perfectly with Central European ones, and is evidently the specimen described. Thus the description of *subcormoranus* is excellent and absolutely certain—a type with exact locality, an adult male, is extant; it is therefore more desirable to adopt this name than the somewhat uncertain name *arboreus*. The fact of the nesting on trees is not a sure criterion of the subspecies. While *P. carbo carbo* now apparently nests on rocks only, there was once upon a time a colony in Norfolk on trees, though it must be admitted that I have not seen a specimen from that colony to say that they were *P. c. carbo* and not *subcormoranus*.

On the other hand, *P. carbo subcormoranus* nests on trees—sometimes in heronries—but on some seashores, as for example in the Mediterranean, on cliffs, and exceptionally even among reeds.

We must thus clearly separate two European forms of Cormorants as follows:

Phalacrocorax carbo carbo (L.)

Generally larger, with larger bill; underside deep blue-black.

Hab. Shores of North Atlantic, from Nova Scotia to Southern Greenland, Iceland, Faroë Islands, British Isles, coasts of Norway, and thence to the Kola Peninsula.

Phalacrocorax carbo subcormoranus (Brehm)

Smaller, with smaller bill; underside steel-black, with a distinct greenish gloss.

Hab. Central Europe, north to the Baltic (formerly nesting in Blekinge and Denmark, still found in North Germany), west to Holland and coast of France, south to the Mediterranean (Italy, Dragonera), the Danube Valley, Black Sea basin, and thence eastwards to Central Asia.

The few pairs of cormorants which formerly bred on the Channel Islands probably belonged to this form as well. It will be interesting to compare adult British Cormorants, and especially specimens from all the breeding-places in Great Britain, in order to find out definitely whether both forms occur regularly. Some specimens which I have seen seemed to be intermediate, others indistinguishable from *P. c. subcormoranus*; but most adult breeding birds, and probably all, belong to *P. c. carbo*.

I am obliged to Professor Lönnberg for readily answering my questions, and thankful to O. Haase for giving an extract, in translation, from the Swedish article in "Fauna och Flora," in the *Ornith. Monatsberichte*, 1916, p. 45.

MORE ERRONEOUS QUOTATIONS AND OTHER ERRORS.

By ERNST HARTERT, PH.D.

IN *Nov. Zool.*, pp. 112-14, I have called attention to some wrong quotations and careless double references, under totally different species, to one and the same name. These do not only occur in vol. xxiv. of the *Catalogue of Birds*, but also in other volumes of that immortal work, and in other books as well.

The first part of vol. xxv., dealing with the "*Gaviae*" or better *Lari*, was written by Howard Saunders, who had for many years made the study of the Gulls and their allies his speciality. One therefore expects in this portion of the work a masterpiece; it is doubtless very well compiled, but by no means without errors, and not free of misprints and wrong quotations. I will only call attention to a few mistakes I came across in the palaeartic species.

1. *Larus naevius* Linné, *Syst. Nat.* Ed. XII. i. p. 255, is quoted twice as a synonym both of *Larus marinus*, on p. 243, and as one of *Rissa tridactyla*, on p. 306, the quotation being in both cases rather inexact—in the first case as *Syst. Nat.* p. 225 (without edition and volume), in the second as *Syst. Nat.* i. p. 225 (without mentioning the edition). There is very little doubt that the second quotation is correct, the name *Larus naevius* being taken from Brisson, *Orn.* vi. p. 185, pl. 17, fig. 2, while the size, the delicate grey back and the small hind-toe without nail alone make it impossible to refer the name to *Larus marinus*, which

has a black back, is at least twice as large, and has a very well-developed hind-toe with claw.

2. Under *Larus marinus* is, I should say correctly, quoted *Larus maculatus* Boddaert, 1783; this name is based on *Le Grisard*, Daubenton, pl. 266, therefore the latter cannot have been published three years later, as stated by Saunders.

3. *Sterna grisea* Horsfield is described on p. 199, not 190 (see p. 6).

4. *Sterna nubilosa* Sparrman was published in 1788, not 1786 (see p. 18).

5. *Gelochelidon* Brehm is described on p. 771, not 774 (see p. 25).

6. In many places Saunders quoted names, which had already been used in another sense, but without "nec . . .," an omission which causes now a great deal of unnecessary additional work, while it would have been very easy to add these two words, as the writer was perfectly aware of the fact. In other cases he says "nec . . .," quoting the later author in connection with "nec," which is a misleading and senseless way of quoting.

7. *Sterna senegalensis* Swainson, 1837, is quoted as a synonym of both *Sterna fluviatilis* and *Sterna macrura* (pp. 57 and 64); the name refers to the former, not to the latter.

8. *Sterna brachypus* Swainson, 1837, is *S. macrura* (*an potius paradisaea!*), but it appears on p. 252, not 152, as Saunders quoted.

9. The young bird figured by Sparrman as "*Larus polo-candor*" (thus spelt!) appears in the Museum Carlsonianum ii. fasc. 4 (not 3!) which was published in 1789, not 1788 (see p. 70).

10. Latham's *Gen. Synopsis*, Suppl. I. appeared in 1787, not 1757 (see p. 75).

11. *Larus nigrotis* Lesson appears on p. 619, not 618 (see p. 175).

12. *Larus plumbeiceps* is described in the *Zusätze* to Meyer & Wolf's *Taschenbuch*, not vol. iii., which does not exist (see p. 181).

13. *Larus brunnicephalus* (sic!) appears on p. 225, not 25 (see p. 215).

14. The name *Larus genei* Brème, *Rev. Zool.* année 1839, p. 321, appeared in **1840**; if it had appeared in 1839 it would of course have the priority over *L. gelastes*, a name which in 1838 was a clear nomen nudum; fortunately it was diagnosed by Keyserling & Blasius, *Wirbelt. Eur.* pp. xcv and 242, which probably appeared in 1840, so that we need not change it into *genei* (see p. 230).

15. "La grande Mouette cendrée" is figured on Daubenton's plate 977, not 997.

16. On p. 292 Saunders correctly quoted as a synonym of *Larus glaucus* Brehm's *L. medius* of 1822, but on p. 296 he quoted the same author's *L. minor* as a synonym of *L. leucopterus*. This is incorrect, because *minor* is merely a new name for *medius*, as the description shows and a footnote explains.

The above instances are not a list of all the errors in vol. xxv., but only a few I noticed incidentally. The descriptions of Saunders appear often to be taken from single specimens, as are those of Sharpe throughout the *Cat. B. Brit. Mus.*, therefore they do not fit every specimen, as gulls vary a good deal. The keys are sometimes difficult to work; the description of *Hydrochelidon leucoptera* juv. on p. 5 does not fit the first plumage, and *Larus minutus* juv. as well as *L. melanocephalus* imm. (p. 170) should be in another section, as they do not have a "black hood."

A NEW *MONARCHA* FROM ROSSEL ISLAND.

BY LORD ROTHSCHILD AND ERNST HARTERT.

WE have recently received from Mr. A. S. Meek a fine collection from the mountains ("Mount Rossel") of Rossel Island, in the Louisiade group. The collection contains not a single species which we had not previously received, but a re-examination of an additional series of *Monarcha cinerascens* shows that the form from Rossel Island is quite distinct. It belongs to the group with darker grey throat and upperside, and is therefore closely allied to the bird called *M. cinerascens inornatus*, but differs in having the inner and part of the outer webs of the rectrices blackish slate-colour, the outer webs mostly grey; there is in some specimens a black patch on the chin and another behind the nostrils, in front of the lores, while in others these black spots are only indicated or not developed. The abdomen is perhaps a shade brighter chestnut. The bill is distinctly heavier, larger, and none of the specimens show a light space at the base of the under-mandible. Culmen from forehead 22-23, wing 80-89 mm., this difference in size not due to sex, unless our series is partially wrongly sexed, which we are afraid it is. We propose to call this form

***Monarcha cinerascens rosselianus*.**

Type: ♂ ad. Rossel Island, 6. ii. 1898. No. 1385, A. S. Meek coll. In Mus. Tring.

This new form resembles a good deal the female of *Monarcha melanopsis*, but the darker tail and greyer lores serve to distinguish it easily, besides that the males are quite different.

The nomenclature of this group of flycatchers is not quite satisfactory. The name *cinerascens* (*Drymophila cinerascens* Temminck, *Pl. Col.* 430, Fig. 2, livr. 72, 1827) was first given to a Timor bird, but a series from there is wanting; we should not be surprised if *kisserensis* should in the end prove to be indistinguishable.

The name *inornatus* (*Muscicapa inornata* Garnot, *Voy. Coqu., Zool., Atlas*, pl. 16, Fig. 2) was given to birds from "New Guinea," probably from the Arfak Peninsula. From there we have never received specimens, and the type is an immature individual. Ornithologists have recently used this name for the birds from all parts of New Guinea, but in the face of the fact that in the Geelvink Bay, on Mafor, a light grey form is found, and light birds inhabit the Key group and Ternate as well as Halmahera (the Ternate birds being different from the Geelvink Bay ones), there is a possibility, if not probability, that the Arfak bird is similar to these, and not to the dark grey birds from Eastern Papua.

DESCRIPTION OF A NEW *LARVIVORA*.

BY E. C. STUART BAKER.

Larvivora wickhami spec. nov.

Whole upper plumage slaty blue; forehead and above the lores rufous; lores, cheeks, and ear-coverts pale dull buff, the edges blackish, making this part of the plumage mottled. Visible portions of the wing like the back; primary quills blackish brown edged with dull buff. Tail, central feathers like the back, and the outer ones blackish, suffused with slaty-blue on the outer webs.

Chin, throat, foreneck and breast light rusty chestnut, the centre of the throat slightly paler. An indefinite slaty blue band, interrupted in the middle, across the breast. Abdomen, vent and under tail-coverts white. Under wing-coverts and axillaries dull rusty buff.

Bill black, legs very pale flesh-colour, almost white.

The tail feathers are very slightly acuminate, but would possibly be more definitely so in a newly moulted bird.

Measurements: wing 72 mm.; tail 43 mm.; bill from front 10·5 mm., and from gape about 15 mm.; tarsus 24 mm.; mid-toe with claw 17·3 mm.

The above bird was shot by Mr. P. Wickham of the Indian Forest Service in April 1916, in the Chin Hills, at an elevation of about 5000 ft. The nest, which was described as being like those of *Larvivora brunnea*, was made of moss and grass on a bank, and contained four eggs, which also appear to have been of the same blue as those of that bird.

I have named the species *wickhami* in honour of its discoverer. The type is in the Tring Museum.

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No. 3.

NOTES ON *AMATHUSIIDAE*, *BRASSOLIDAE*, *MORPHIDAE*, ETC., WITH DESCRIPTIONS OF NEW FORMS.

BY LORD ROTHSCHILD, F.R.S., PH.D.

(Plates III.—VI.)

AMATHUSIIDAE

Faunis

In this genus I have no special remarks to make, only several new subspecies to describe.

Faunis arcesilaus baliensis subsp. nov.

♂ ♀. This race has hitherto been united with the Javan race *a. caneus* Hbnr. both by myself and others, but I have come to the conclusion that it is distinct.

Differs from *a. caneus* in the more smoky olive, less rufous tinge above; this is more conspicuous in the ♀ ♀. Below the transverse dark bands are more conspicuous than in the vast majority of *a. caneus*.

Hab. Bali; 1 ♂, 2 ♀ ♀, Danau Bratan, 2300 ft., January 1911 (E. Stresemann); 1 ♂, Gunung Bratan, 4000–6000 ft., January—February 1911 (E. Stresemann); 1 ♂, Bali, 2000–4000 ft., March 1896 (W. Doherty). (Type ♀, Danau Bratan.)

Faunis arcesilaus bankensis subsp. nov.

♂ ♀. Nearest to *a. hirata* Dr. Nicév., but smaller and much brighter, more uniform rufous above. Below much paler and more yellowish olive.

Hab. Banka, 2 ♂ ♂, 1 ♀, 1891 (Dr. Hagen).

Faunis stomphax lautensis subsp. nov.

♂. Differs from *s. stomphax* below in the oblique white band being much wider and more distinct, reaching to terminal margin. On the upperside this band shines through from below, which, as far as I am aware, is never the case in *s. stomphax*, where the band is often entirely absent, and never reaches the margin.

Hab. Pulo Laut, 2 ♂ ♂, 1891 (W. Doherty).

Faunis phaon sumatranus subsp. nov.

♂. Differs from *p. phaon* in the smaller and more rounded hindwing and in the basal half of hindwing below being uniform with the outer half, **not** much darker, in the transverse band bordering this basal half being absent, and in there being in its place an oblique darker line from costa to vein 4, as in *stomphax*.



Size = *stomphax plateni*, being smaller than *p. phaon*.

Hab. Sumatra, 2 ♂♂ (Felder coll.).

Of *menado* Hew. I have 1 ♂ from the Island of Siao which is nearest to *m. syllus* Fruhst. from Gangir, but smaller. I cannot, however, describe it from one not very fresh specimen.

XANTHOTAENIA

I have no remarks to make except that I consider this genus ought to come before instead of after *Aemona*, as Fruhstorfer has placed it.

Xanthotaenia busiris batuensis subsp. nov.

♂. Above considerably paler than *b. busiris* and much more cinnamon rufous. Below it is even paler than *b. polychroma* Hag.

Hab. Batu Island, 2 ♂♂, 1896-97 (H. Raap).

AEMONA

I only have a new subspecies to describe.

Aemona amathusia tonkinensis subsp. nov.

♂. Differs from *a. amathusia* above in having a more rufous less greyish wash, and in the postmedian bands of the forewings being more developed, also on the hindwing the zigzag band basad of the postmedian line is much more pronounced and rufous brown. Below the difference is almost nil.

Hab. Tonkin, 2 ♂♂, Yubay.

HYANTIS

Here I can only remark that my *H. albiplaga* must be reduced to a subspecies. It shows the same light and dark variation that is found throughout the range of the single species *hodeva* Hew. The much more abundant light phase must bear the name :

Hyantis hodeva albiplaga ab. *pallida* ab. nov.

Both *h. albiplaga* and the ab. *pallida* differ from *h. fuliginosa* G. Smith and its ab. *oxyophthalma* Stich. in the ocellus on the hindwing above being much more flat and less defined in addition to other differences. *H. h. albiplaga* is from the Snow Mountains, while *h. fuliginosa* is from Kapaur.

Morphopsis

(Pl. IV. ff. 1-4)

Here we find some interesting problems. Hitherto, owing to the scarcity of this genus in collections, two totally different species have been confused under the name *M. albertisi* Oberth. Even Herr Fruhstorfer in *Seitz* failed to perceive this fact. The error arose because Mr. Henley Grose Smith, when he worked out Doherty's collections from Biak and Humboldt Bay, had, like most of us, never seen a ♂ of true *albertisi*. The second species remained in collections as the ♂ of

albertisi till August of this year, when it was described and figured by Messrs. Joicey and Talbot (*Trans. Entom. Soc. Lond.* 1916. p. 74. pl. V. f. 2. ♂) under the name of *M. biakensis* sp. nov. This name is unfortunate, as the species occurs in several parts of the mainland of New Guinea in a form identical with the specimens from Biak. As the ♀ of *biakensis* has not been figured, I give (Pl. IV. fig. 4) a figure of a specimen from Mafor Island; the ♂ figured (f. 3) is from Humboldt Bay.

I give for comparison at fig. 1 a ♂ of *M. albertisi astrolabiensis* Stich., and at fig. 2 a ♀ of my new *M. a. milnei*. Messrs. Joicey, Noakes and Talbot described in 1915 (*Trans. Entom. Soc. Lond.* 1915. p. 366. pl. LX. f. 1) a subspecies of my *Morphopsis ula*, which is of great interest faunistically.

***Morphopsis albertisi milnei* subsp. nov.**

(Pl. IV. f. 2 ♀)

♂. Differs above from *a. albertisi* in its paler rufous ground-colour, in the conspicuous fulvous orange patch between the large ocellus and the terminal margin of the forewing, and in the greater width of the oblique yellow band of the forewing towards termen. Below it differs in its sharper markings and in the almost complete absence of the dark cloud-band between and beyond the ocelli of hindwing.

♀. Differs above in the darker forewings, in which the postocular patch and oblique band show similar differences as in the ♂, and in the submarginal band of hindwing being reddish grey-brown like the rest of the wing, not rusty orange. Below it differs chiefly in the more sharply defined markings.

Hab. Milne Bay, S.E. New Guinea, 4 ♂♂, 3 ♀♀, January 1899 (A. S. Meek). (Type ♂.)

***Morphopsis albertisi setakwaensis* subsp. nov.**

♂♀. Differ from *M. a. albertisi* and *M. a. astrolabiensis* in the much straighter, less zigzag submarginal band to the hindwing above, which, like *a. astrolabiensis*, is much redder, less orange than in *a. albertisi*.

Hab. Snow Mountains and coast of S.W. Dutch New Guinea, 10 ♂♂, 1 ♀, Utakwa, Setakwa, and Eilanden Rivers (A. F. R. Wollaston and A. S. Meek).

***Morphopsis albertisi mambarensis* subsp. nov.**

♀. Differs in the very dark dusky colour above and very dark outer half of hindwing below. This ♀ appears to be the largest of all the ♀♀ of the *albertisi* forms.

Length of forewing: 59.5 mm. Expanse: 126.5 mm.

Hab. Mambare River, N.E. New Guinea, 1 ♀, 5000 ft., March 1906 (A. S. Meek).

***Morphopsis albertisi kumusii* subsp. nov.**

♂♀. Differ in the small size, very bright rufous colour, in the small ocellus on hindwing above, and the very large orange postocular patch of forewing.

Length of forewing: ♀, *a. albertisi*, 55 mm. Expanse: 117 mm.

” ” ” ♀, *a. kumusii*, 49 mm. ” 104 mm.

Hab. Kumusi River, N.E. New Guinea, 3 ♂♂, 1 ♀, August 1907 (low elevation) (A. S. Meek).

The following key to the subspecies of *M. albertisi* will, I trust, be of use :

- | | | |
|----|---|--|
| 1. | Subterminal band of hindwing very strongly dentate and orange in colour | 2. |
| 2. | | Oblique pale band of forewing wider |
| | 3. | |
| 4. | | Postocular patch on forewing conspicuous |
| | 5. | |
| 6. | | Larger, much darker, and duskier |
| | 6. | |

Morphopsis biakensis Joicey & Talbot

(Pl. IV. ff. 3, 4)

The Tring Museum has the following specimens of this species :

1 ♂, 1 ♀, Suer, Mafor Island, May and June 1897 (W. Doherty); 5 ♂♂, Kapaur, December 1896 (low country) (W. Doherty); 2 ♂♂, Humboldt Bay, September—October 1892 (W. Doherty); 1 ♂, N.W. Dutch New Guinea (H. Kühn).

This species differs at first sight from *M. albertisi* by its smaller and round hindwing, and the strongly lobed area of forewing below vein 1.

Taenaris

Here I have a number of new forms to describe and some remarks to make.

Taenaris diana bisae subsp. nov.

♂. Above differs from *d. diadema* Fruhst. in the brown above median and between costa and vein 4 being darker. Below there is little difference; 1 ♂ has an incomplete secondary ocellus above tornus of hindwing, and the second ♂ has no trace of this.

♀. Differs very considerably from ♀ *d. diadema*; the pale area is almost pure white, **not** suffused with cream yellow, and on both wings is much more sharply separated from the brown suffused portions of the wings; the outer edges being sharply defined. Below the anal ocellus of hindwing is round and single, and the pale areas also much whiter.

Hab. Pulo Bisa, N. of Obi Island, 2 ♂♂, 1 ♀, September 1897 (W. Doherty).

Taenaris dina insularis subsp. nov.

(Pl. III. ff. 1 ♂, 2 ♀)

Herr Fruhstorfer in *Seitz* informs us that up to the time of writing *dina* Stand. had only been found in what was then the German portion of N.E. New Guinea. The Tring Museum possesses a ♂ and ♀ from Salawatti, a ♂ (?) and a ♀ from the Snow Mountains which represent two new and distinct subspecies.

♂. Differs from *d. dina* above in having the white portions of the wings strongly suffused with buff, the brown of the costal and apical third of forewing paler, more liver-brown, and extending farther into cell and on to vein 3, and the discocellulars are brown, not white. The hindwings are entirely buffish white, with only a border of dark brown, and the dark patch surrounding the ocelli is smaller and darker, and is surrounded, except on the inner side, with a broad golden ring.

Below it differs in the white area of forewing being less pure and the apical brown area being more extended. On the hindwing it differs in the white being less pure, the apical ocellus larger, and in the space between median vein and abdominal margin above the ocellus being orange buff.

♀. Differs above in the whole hindwing being white, with only a marginal band of sooty brown, and the dark patch surrounding the double ocellus much more sharply defined. Below on hindwing the dark margin is narrower, the area above ocellus and below median vein is buff, **not** merely tinged with creamy buff, and the yellow band round the double ocellus encircles it much more, while the black outermost band is much narrower.

Hab. Salawatti, 1 ♂, 1 ♀ (H. Kühn) ; 1 ♂ (?) (H. Kühn) (labelled erroneously Sorong).

Taenaris dina sordidior subsp. nov.

♀. Differs from *d. dina* above in the dirty buffy white, **not** pure white, of forewing, the dark brown heavily-defined nervures and the brownish suffusion running in from apical and terminal areas. On hindwing the brown-grey outer area is less dense and paler, while the whole wing above median vein is whiter, though all white parts are much suffused with buff.

Hab. Snow Mountains and Coast of S.W. Dutch New Guinea, 1 ♀, near Oetakwa River, 3000 ft., December 1910 (A. S. Meek).

Taenaris microps Gr. Smith

Fruhstorfer suggests that this is either an aberration of *g. gorgophone* or a species having the same relationship to it as *dina* has to *dimona*. It is certainly to my mind a good species and **not** an aberration, but it is much nearer to *dimona* than to any of the forms of *gorgo*.

Taenaris bioculatus cameronensis subsp. nov.

♂. Above nearest to *b. charondos* Fruhst., but almost entirely suffused on both wings with sooty grey. Below pale areas on both wings duller and more suffused with grey.

Hab. Mount Cameron, Owen Stanley Range, 1 ♂, July—August 1896 (Anthony).

Taenaris catops rosseliana subsp. nov.

♂ ♀. Above very similar to *c. adriana* Fruhst. from Fergusson, but differs at first sight by the black on the outer portion of hindwing only extending just beyond vein 4, **not** to beyond vein 2. Below the much less extent of the black on both wings is at once conspicuous.

Hab. Rossel Island, Louisiade Islands, 4 ♂♂, 9 ♀♀, January 1898 (A. S. Meek) ; 6 ♂♂, 4 ♀♀, November 1915 (W. F. Eichorn).

Taenaris phorcas admiralitatis subsp. nov.

♂ ♀. Above differ from all other forms of *phorcas* in the strongly reduced white area of the hindwing, while on the forewing the white area is as extended as in *p. uranus* Staud. Below the white area on the hindwing is also much reduced.

Hab. Admiralty Islands, 7 ♂♂, 7 ♀♀, St. Gabriel Island, April 5-6, 1899, (Capt. Cayley Webster); 3 ♂♂, 5 ♀♀, Manus (Meek Expedition).

Taenaris onolaus Kirsch and **Taenaris honrathi** Staud.

Herr Fruhstorfer in *Seitz* unites these and a number of other forms as subspecies of one species *onolaus*. In my opinion this is not correct, and I believe that these two forms form two quite distinct species, each with a group of subspecies. The following is the synoptical table of the two species :

- Taenaris honrathi honrathi* Staud., Waigeu.
- Taenaris honrathi sekarensis* Staud., West New Guinea.
- Taenaris honrathi ritsemæ* Fruhst., Humboldt Bay.
- Taenaris honrathi rebeli* Fruhst., N.E. New Guinea.
- Taenaris onolaus onolaus* Kirsch, N.W. New Guinea.
- Taenaris onolaus ida* Honr., N.E. New Guinea.
- Taenaris onolaus saturatior* Fruhst., S.E. New Guinea.
- Taenaris onolaus montana* Stich., Upper and Middle Aroa River.

Taenaris scylla Staud.

This fine species was obtained on Biak Island as well as on Mysore (Korrido) by Messrs. A., C., and F. Pratt when collecting there in 1914 for Mr. Joicey.

Taenaris dioptrica orientalis subsp. nov.

♂. Nearest to *d. onesimides* Fruhst. Differs above in its paler and more yellow ground colour and in the much greater amount of brown-black between anal angle and vein 3. Below it differs in its paler forewings and much less extent of black on hindwings.

♀. Differs above in the much darker outer two-fifths of hindwing, and in the larger and blacker ocellus. Below on the forewing it differs in the large pale whitish patch between veins 1 and 4, and in the ocelli being larger, darker, and better defined.

Hab. N.E. New Guinea; 2 ♂♂, 6 ♀♀, Erima (Dr. Hagen), Astrolabe Bay and Constantinhafen (Wahnes).

Taenaris artemis queenslandica subsp. nov.

♂. Nearest to *a. sticheli* Fruhst. Differs from this form in the larger ocelli above, which are widely ringed with golden yellow. Below the ocelli are slightly larger and more sharply defined.

Messrs. Waterhouse and Lyell record *a. jamesi* Butl. in 9 ♂♂, 2 ♀♀, from Darnley Island. (Type locality Yule Island.)

Hab. North Queensland, 1 ♂.

Taenaris artemis tineutus Fruhst.

Herr Fruhstorfer in *Seitz* asserts, without having made any inquiries at Tring, that only three specimens of this very striking form are known, the type being in the British Museum from the Crowley collection. As a matter of fact there are in the Tring Museum 4 ♂♂ and 9 ♀♀, collected by A. S. Meek, March and April 1897, and the larger number of these have the costal area of forewing grey, **not** white, and the abdominal margin of hindwings also strongly suffused with black scales.

Taenaris meeki spec. nov.

(Pl. III. ff. 3 ♂, 7 ♀)

♂. Closely allied to *T. a. artemis* in the absence of the black scent-patch on abdominal area of hindwing; but differs at a glance by the much narrower and more produced forewings, the much more deeply concave hindmargin of the forewings, and in the much more defined ocellus, which is bright blue in the centre and broadly ringed with orange golden.

Forewing above basal half obliquely bluish mouse-grey, with white nervures, outer half white, apex broadly bluish mouse-grey.—*Hindwing* above basal three-fifths white, golden buff between veins 1 and 2, outer two-fifths bluish mouse-grey between costa and vein 2, beyond vein 2 to abdominal margin whitish grey; on this whitish grey area are bunches of cinnamon hairs. Terminal and abdominal margins blackish grey. Ocellus of hindwing above very blue in black centre, widely ringed with orange golden. Below the forewing is similar to above, but the grey is darker; the hindwing is all white suffused with grey in outer third and with buff between abdominal margin and vein 2.

♀. Larger. *Forewing* above with grey much darker, but otherwise coloured as in ♂.—*Hindwing* with the outer dark area blackish sooty brown-grey, and the abdominal area almost all sooty brown-grey, and the buff area paler; ocellus very large. Below in forewing the white area more diffused and not reaching termen, in hindwing the dark outer area reduced.

Length of forewing: ♂ 48 mm., ♀ 58 mm. Expanse: ♂ 102.5, ♀ 123 mm.

Hab. Snow Mountains, S.W. Dutch New Guinea; ♂, Upper Setekwa River, 2000–3000 ft., June–July 1910; ♀, Near Oetakwa River, 3500 ft., October–November 1910 (A. S. Meek).

Taenaris perplexus spec. nov.

This is a very puzzling species; it is nearest in appearance to *t. anella* Stich., and like that form and its typical form *tainia tainia* Fruhst. has the black scent-scale patch on abdominal area.

♂. *Forewing* above white, apex and area between vein 3 and inner margin, except middle third of inner margin, pale grey.—*Hindwing* above white, outer two-fifths above vein 2 deep grey, except between the reflected ocelli, where it is suffused with white; the ocelli show through from below, but are entirely absent above. Below on the forewing the white is much restricted, and on hindwing the whole central three-quarters is white; the grey on both wings is darker, and the ocelli as in *t. anella*.

♀. Above entirely white; forewing with apex and costal area brownish grey; hindwing, basal third washed with golden buff, outer margin broadly brownish grey.

Below: forewing, apical third dark brownish grey; hindwing, inner half white suffused with buff, outer half and costal area broadly dark sooty brownish grey.

Length of forewing: ♂ 44 mm.; ♀ 52 mm. Expanse: ♂ 94 mm.; ♀ 112 mm.

Hab. Triton Bay, S.W. New Guinea, ♂ (Webster), August 1896; ♀ (H. Kühn), July 23, 1896.

Taenaris rothschildi parallelus subsp. nov.

♂ ♀. This is a parallel form to *artemis ziada* Fruhst., and, apart from the patch of black scent-scales on abdominal area, only differs at first sight by the lack of the orange base of hindwing and the pale pure grey, not reddish brown-grey, of its colour. Pure grey above, apical half of forewing, except apex, pure white, abdominal area of hindwing in ♂ with patch of dark buff hairs, ocellus generally absent or ill defined. Below much darker than in *r. rothschildi*, but not so dark as in *r. merana*.

Hab. Misol, 13 ♂♂, 2 ♀♀ (Dr. Tauern); 5 ♂♂, 3 ♀♀, January 1899 (H. Kühn).

Taenaris myops miscus Fruhst.

Fruhstorfer states that only 1 ♂, the type from Normanby Island in the British Museum, is known. There are in the Tring Museum 6 ♂♂, 4 ♀♀, obtained by A. S. Meek on Goodenough Island, March—May 1913.

Taenaris myops misolensis subsp. nov.

♂. Above similar to *m. myops*, but the hindwing below is, except the base and the outer edge beyond apical ocellus from costa to vein 4, pure dull white.

♀. Has underside of hindwing also whiter, with no buff suffusion.

Hab. Misol, 2 ♂♂ (Dr. Tauern); 1 ♀, January 21, 1899 (H. Kühn).

Taenaris kirschi Staud. and **Taenaris mailua** Gr. Smith

Fruhstorfer in *Seitz* includes these and a number of similar forms as subspecies under *myops* Feld. I do not agree with this treatment, and as I have several new forms which demonstrate a much wider distribution for *kirschi* I am convinced that there are three species, of which the following table gives the synopsis:

- Taenaris myops myops* Feld., Aru Islands.
- Taenaris myops praxedes* Fruhst., Salawatti.
- Taenaris myops fergussonia* Fruhst., Fergusson Island.
- Taenaris myops miscus* Fruhst., Normanby and Goodenough Islands.
- Taenaris myops misolensis* Rothsch., Misol.
- Taenaris myops verbeeki* Fruhst., S.E. New Guinea.
- Taenaris kirschi kirschi* Staud., S.E. New Guinea.
- Taenaris kirschi occidentalis* Rothsch., Kapaur.
- Taenaris kirschi interfaunus* Rothsch., Humboldt Bay.
- Taenaris kirschi convergens* Rothsch., Fergusson Island.
- Taenaris mailua mailua* Gr. Smith, Mountains of S.E. New Guinea.
- Taenaris mailua littoralis* Rothsch., Coastal Region of S.E. New Guinea.
- Taenaris mailua rosseli* Fruhst., Rossel Island.

Taenaris kirschi occidentalis subsp. nov.

♂. Above differs from *k. kirschi* in being much darker and browner; the white on the forewing is more diffused and ill-defined, being also suffused with greyish brown; on the hindwing it differs in only having the basal third whitish and this much suffused. Below it is much darker, and the white is **not** saturated with orange buff.

♀. Above has much more white on forewing and much less on hindwing. Below it presents the same differences as the ♂ does.

Hab. Kapaur, 3 ♂♂, 1 ♀, December 1896—January 1897 (W. Doherty).

Taenaris kirschi interfaunus subsp. nov.

♂. Differs from *k. kirschi* and *k. occidentalis* above in the much greater extent of white on the forewing, and differs from *k. occidentalis* in being much whiter on the lower half of the dark outer two-thirds of hindwing and on abdominal area. A second ♂ has the dark areas silver-grey but distributed in the same proportions.

Hab. Humboldt Bay, 2 ♂♂, September—October 1892 (W. Doherty).

Taenaris kirschi convergens subsp. nov.

♂. Above differs from *k. kirschi* in the orange golden costal area of forewing and the almost obliterated white area of forewing. On the hindwing it has less white than *k. kirschi* but more than *k. occidentalis*. All the white is suffused with brownish. Below the white on both wings is much reduced, and the anal ocellus is very conspicuous from its very broad deep orange border.

Hab. Fergusson Island, 1 ♂, July—December 1894 (A. S. Meek).

Taenaris mailua littoralis subsp. nov.

♂♀. Differ above from *m. mailua* in being paler grey.

♀. Below is generally whiter on hindwing.

Hab. Milne Bay, 8 ♂♂, 6 ♀♀, November 1898 (A. S. Meek).

Morphotenaris

Here I have nothing to add, and only give drawings of two hitherto unfigured forms.

Morphotenaris schönbergi littoralis Rothsch.

(Pl. III. f. 4)

Morphotenaris schönbergi wollastoni Rothsch.

(Pl. IV. f. 5)

Stichophthalma

Here there are several points to mention.

Stichophthalma sparta Nicév.

(Pl. IV. f. 6. ♂)

Herr Fruhstorfer has placed this as a subspecies of *howqua*, which was entirely due to the ♂ being unknown. It is a quite distinct species allied to *louisa*.

♂. Basal two-fifths of forewing rufous-orange, with lines of underside showing through, outer three-fifths cream-colour, with a submarginal row of small arrow-shaped or chevron-shaped dark brown patches and a marginal band of long lunate spots or streaks.—Hindwing, basal two-thirds rufous-orange also, with the lines of the underside showing through, outer third buffish yellow with large black arrow-shaped chevrons. Below it is much yellower than *louisa*, and the lines are much straighter and less crenulated.

1 ♂, Kindah, Upper Burmah.

***Stichophthalma louisa siamensis* subsp. nov.**

♀. Differs from the other two races of *louisa* by the basal half of forewing and the whole of the hindwing above being brownish rust-red, and the arrow-shaped or chevron-shaped patches on both wings being much larger. Below it is much darker and more suffused with green.

Hab. Siam, 1 ♀.

***Stichophthalma fruhstorferi* Rüb.**

Fruhstorfer places this as a subspecies of *louisa*, but this turns out to be incorrect, as I have specimens from the same locality of *S. louisa mathilda* and *fruhstorferi*. The latter is a very distinct species, which is much nearer to *camadeva*, as the submarginal patches and violet tint on the hindwings show.

***Stichophthalma cambodia* Westw.**

Fruhstorfer suggests that this may be a subspecies of *louisa*. It is, however, quite a distinct species, and I have recently described a closely allied form from Siam, which flies together with my *louisa siamensis*, and which I have named *S. godfreyi*.

***Stichophthalma camadeva nagaensis* subsp. nov.**

♂. Above much paler than either *c. camadeva* or *c. camadevoides*, and at once conspicuous by its golden yellow costa and very small chevrons on the forewing. Below more uniform rufous, and at once distinguishable from the other two subspecies by all the transverse lines and bands being much straighter, less zigzag, and less crenulate.

Hab. Naga Hills, 1 ♂.

***Zeuxidia semperi excelsa* subsp. nov.**

♂. Distinguished at first sight from *s. semperi* and *s. therianaca* by its large size and very broad paler lavender band on forewing, and the outer paler lavender band of hindwing being throughout of uniform width. Below it is at once distinguished from both by the strong violet mauve suffusion over the whole surface of the wings.

Length of forewing: 61 mm. Expanse: 128 mm.

Hab. Negros, 1 ♂, low country, February 1896 (J. Whitehead).

Thauria

Here I can only repeat what I have said in the *Ann. Mag. Nat. Hist.* (8) 17. p. 475, 1916—viz., that *T. lathyi* is a distinct species, and not a local form of *aliris*. The Tring Museum possesses from the Tenasserim Valley, from Toungoo, Burmah, and from Perak specimens of true *Th. aliris pseudoliris* with very narrow yellow oblique bands on the forewings, which in the ♂ have large androconial hair-tufts in the cell of the hindwing, and other specimens with broader white bands to the forewings and **no** androconial hair-tufts in the cell of the hindwing. *Th. aliris intermedia* Crowley has very conspicuous androconial tufts. Below is the synoptical table of the two species.

Thauria aliris aliris Westw., Borneo.

Thauria aliris pseudoliris Butl., South and Central Burmah, Tenasserim, and Malay Peninsula.

Thauria aliris intermedia Crowley, N. Burmah.

Thauria lathyi lathyi Fruhst., Tonkin.

Thauria lathyi siamensis Rothsch., Siam.

Thauria lathyi amplifascia Rothsch., South and Central Burmah, Tenasserim, Malay Peninsula.

BRASSOLIDAE

This family has been of late years revised by Stichel and Fruhstorfer, but I have grave doubts as to whether it has been correctly treated. On the one hand the typical genus *Brassolis* consists of heavily built small or medium-sized insects with the general fascies of the moth family *Castniidae*, while their larvae resemble large Hesperid larvae minus the thin long neck, being smooth and cylindrical, with a largish and round horny head. On the other hand we have the genera *Dynastor*, *Opsiphanes*, *Dasyophthalma*, *Eryphanis*, *Caligo*, and *Narope*, which either have the general fascies of the *Satyridae* or of heavy-bodied *Nymphalidae*, while their larvae have horned heads like *Charaxes*, and long rather flat bodies with long forked tails like *Satyridae* larvae. Then there is *Penetes*, of which the larva is unknown, and appears in general fascies intermediate between *Opsiphanes* and *Brassolis*, but nearer the former.

I personally consider the genus *Brassolis* should alone be retained in the family *Brassolidae* and the rest form a new family (*Caligonidae*) of their own, which has been treated by Fruhstorfer as a subfamily only. Fruhstorfer, while stating that the larvae of *Dynastor* were undescribed, nevertheless puts it calmly into the section he calls subfamily *Brassolinae* without tail-forks. The truth is that the larvae have long tail-forks, and I figure that of *napoleon* and that of *darius* on Pl. III. f. 5 and Pl. VI. f. 13.

CALIGONIDAE

Dynastor napoleon Westw.

(Pl. III. f. 5 larva, f. 6 pupa)

Larva large and slug-like, bright grass-green with a number of short hairs; head rufous brown with two short spines on each side and a pair of much longer ones behind. Along the back are four lozenge-shaped or longish oval chestnut patches with a black central spot. The last segment ends in two very long tails.

Pupa resembles in shape a large pupa of *Opsiphanes*, greyish buff except on thorax, where it is mouse-grey, and a large grey-brown patch on wing-cases enclosing some white spots, a white oblong mark at base of antennae.

Described and figured from a sketch by E. Hartgen.

Food plants: Bromeliaceous plants, "Travata," January and February.

***Dynastor darius darius* Fabr.**

(Pl. VI. f. 13 larva, f. 11 pupa)

Larva much darker green than that of *napoleon*, less hairy, and with only one large and one smaller lozenge spot on the back, head dull brown, horns and tails much shorter.

Pupa deep grass-green with irregular black-and-white patches on wing-cases and at base of antennae.

Food plants: pineapple and other Bromeliads, "Gravata."

Described and figured from a sketch by E. Hartgen.

***Dynastor macrosiris strix* Bates and *D. macrosiris hannibal* Oberth.**

Of *m. strix* the Tring Museum has 1 ♀ from Merida, Venezuela (Briceno coll.). Of *m. hannibal* it has 1 ♂, Colombia! (Felder coll.) and 1 ♀, Sarabo, near Pasto, S. Colombia (W. Goodfellow).

Of *D. napoleon* there are in the Tring Museum 11 ♂♂, 9 ♀♀.

***Opsiphanes aorsa colombiana* subsp. nov.**

♂. Above differs from *a. hilanis* Stich. in the oblique band of the forewing being darker and brighter orange and considerably broader below vein 4. Below it is intermediate in colour and marking, but the postmedian angled cream band has the lower half broken into spots as in *a. hilanis*.

Hab. Colombia, 1 ♂, Bogota.

***Opsiphanes syme colombicola* subsp. nov.**

♂. Differs from *s. syme* and *s. fumosa* in being much greyer above, the basal two-thirds of forewing and the disc of hindwing having hardly any yellow suffusion. Below the ground colour of hindwing is also much greyer and duller.

Hab. Colombia, 1 ♂, Popoyan, Lehmann.

***Opsiphanes batea batea* Hbn.**

(Pl. V. f. 8 larva, f. 6 pupa)

Larva long, narrow, flat, and sluglike green; down centre of back runs a pinkish mauve line bordered on each side with white; head with two horns behind pinkish mauve; tail-forks medium pinkish mauve; legs, pro-legs, and underside pinkish mauve; legs tipped with black.

Pupa whitish grey streaked with darker grey, and with bright reddish pink lines except on the wing-cases.

Described and figured from a sketch by E. Hartgen.

Food plant: a species of palm.

Opsiphanes cassiae lucullus Fruhst.

(Pl. V. f. 7 larva, f. 5 pupa)

Larva long, narrow, cylindrical, and sluglike apple green, with whitish tinge including the medium tail-forks; head, with two pairs of horns, lavender grey.

Pupa bright green, with grey ridge to hind edge of wing-cases.

Food plant: banana.

Described and figured from a sketch by E. Hartgen.

Opsiphanes tamarindi latifascia subsp. nov.

♂. Similar to *t. incolumis* Stich., but differs at once by the oblique band of the forewing being much whiter and quite double as wide; the dark ground colour is darker and duskier. Below it is darker and the markings more strongly defined.

Hab. S.E. Peru, 1 ♂ Oroya, Inambari; 3000 ft., dry season, April 1901 (G. Ockenden).

Opsiphanes bogotanus bogotanus Dist.

(Pl. VI. f. 5 larva, f. 6 pupa)

Larva slug-shaped, long, rather flat. Above dull apple-green, with broad dorsal line of pale brick-red, the edges of which line are darker; head greenish brown, with three pairs of horns.

Pupa deep apple-green, with large golden spot on each side.

Food plant: banana.

San Antonio s. Tocota, 1500-1700 m. = 4960-5550 ft., Colombia.

Described and figured from one larva and two pupae sent by A. H. Fassl.

Opsiphanes bogotanus peruanus subsp. nov.

♂ ♀. Differs above from the largest *b. bogotanus* in being darker, with hardly any red shade, and the oblique band on the forewing is whiter and much broader. Below the ground-colour is more uniform, and the dark suffusion between base of hindwing and ocellus is absent.

Hab. Peru, 9 ♂♂ Chanchamayo; 1 ♀ (Felder coll.), Peru.

Opsiphanes invirae remoliatus Fruhst.

(Pl. VI. f. 10 larva, f. 12 pupa)

Larva sluglike, thick in middle, tapering to both ends, bright green, median dorsal band and broad band below spiracles golden yellow; head with four short horns brownish pink, brighter red on back portion; tail-forks medium darker green.

Pupa light green, with golden spot on each side.

Food plant: *giriva* and palms.

Described and figured from a sketch by E. Hartgen.

Opsiphanes flemmingi spec. nov.

(Pl. V. f. 4)

♂. This is a most remarkable species; above it much resembles *berecynthia* Cr., but below it agrees only with *O. singularis* Weym. Above deep rufous chocolate brown; an ill-defined, much obliterated, curved, oblique band beyond cell of forewing

reaching from costa nearly to tornus ; three white spots, of which the third is largest just before apex ; a large black spot representing ocellus of underside just beyond oblique band. Hindwing without any markings, but two large patches of black androconia. Beneath rufous yellow, strongly vermiculated with black and grey ; the position of ocelli and other pattern best seen from figure.

Length of forewing : 54 mm. Expanse : 114.5 mm.

Hab. Rio Dourango, N.W. Ecuador, 1 ♂, 350 ft., June 1901 (Flemming and Miketta).

***Opsiphanes berecynthia buenavistae* subsp. nov.**

♂ ♀. Above much like the subspecies *b. berecynthia* Hopf. ; but curved orange band of forewing narrower and more angled. Below duller and greyer.

Hab. Bolivia, 6 ♂♂, 3 ♀♀, Buenavista, E. Bolivia, 750 m. = 2437 ft., August 1896—April 1897 (J. Steinbach), (type ♀) ; 1 ♀ Salampioni, 800 m. = 2600 ft. (Simons) ; 1 ♂, San Ernesto, 1000 m. = 3250 ft., September 1900 (Simons) ; 1 ♂, Mapiri District, 1895 ; 1 ♂, Sta Cruz de la Sierra, 1905–1906 ; 1 ♂, Prov. Sara, February 1904 (J. Steinbach).

***Opsiphanes josephus excisus* subsp. nov.**

♂. Differs above from *j. josephus* in the wider band and less falcate wing ; this orange band is much more excised on the inner side than in either *j. josephus* or *j. excultus*.

♀. Similar to ♂, but much larger, and has a rather broad orange margin to the hindwing above vein 4 ; the band on the forewing is so excised and reduced that it resembles a picture of a flash of forked lightning. Below both sexes are paler than in either of the other subspecies. I believe this is the first recorded ♂ of *josephus*.

Hab. Colombia Coast Region, 1 ♂, 1 ♀, Rio Dagua (W. Rosenberg).

Caligo

Here there are numerous remarks to make.

***Caligo teucer* Linn.**

Herr Stichel has wrongly united *minor* Kaye with his *t. insulanus*, which has caused Fruhstorfer to rename *minor* as *eurylochus phryasus*.

***Caligo ilioneus pampeiro* Fruhst.**

(Pl. V. f. 1)

Larva long, cylindrical, tapering sharply to both ends, brownish wood yellow tinged with pink, with a median dorsal very sharply defined black-brown line, and two lateral ones less straight, much less sharp, and paler, more greyish ; in between these three lines numerous cloudy and indistinct greyish streaks and lines ; the head buffish, with two black-brown bands on each side ; tail-forks moderate ; whole body, head, and tail covered with short buffish hairs ; on median line four or five short fleshy points.

Food plant : banana.

Described and figured from several larvae sent by F. Schimpf, San Bernadino, Paraguay.

Caligo prometheus epimetheus Feld.

(Pl. V. f. 2)

Larva dark grey-brown, similar to the last in shape, with three or four lighter maroon-pink angular bands on markings, and a median pale line on first three segments and along the sides on a level with the spiracles; head with eight horns and four black-brown bands; tail-forks large, whole larva covered densely with short hairs, five rather long fleshy tubercles on dorsum.

Length of full-grown ♀ larva: 130 mm. = 5.2 in.

Food plant: banana.

Rio Aqua, W. Colombia, 1600–1800 m.

Figured and described from a larva sent by A. H. Fassl.

Caligo eurylochus Cram. and **Caligo brasiliensis** Feld.

Both Herr Stichel and Herr Fruhstorfer unite these forms with seven others as subspecies of *eurylochus* Cram. In the course of arranging the *Caligos* in the Tring Museum I was first struck by the much finer vermiculation and pattern below of *eurylochus*, *livius*, and *pallidus*, as opposed to *brasiliensis*, *sulanus*, *galba*, *morpheus*, *caesia*, and *minor*. On separating out my series of each, I at once found that I had specimens of *morpheus* and *livius* from **Central Colombia**, *galba* and an unnamed form from Sta Marta, *caesia* and an unnamed form near *eurylochus* from Venezuela. This proves that *eurylochus* Cram. and *brasiliensis* Feld. are two distinct species, each with a series of subspecies. I give below a synoptical table.

Owing to Herr Stichel having wrongly identified Mr. Kaye's *eurylochus minor* with his *teucer insulanus*, Fruhstorfer was led to redescribe the Trinidad form of *brasiliensis* as *eurylochus phryasus*, which becomes a pure synonym, and the Trinidad insect must stand as *brasiliensis minor* Kaye.

Caligo eurylochus eurylochus Cram., Guianas.

Caligo eurylochus livius Staud., Central Colombia to S. Peru.

Caligo eurylochus pallidus Fruhst., Bolivia.

Caligo brasiliensis brasiliensis Feld., Espiritu Santo to North Argentina.

Caligo brasiliensis sulanus Fruhst., Central America.

Caligo brasiliensis galba Deyr., North Colombia.

Caligo brasiliensis morpheus Stich., Central Colombia.

Caligo brasiliensis caesia Stich., Venezuela.

Caligo brasiliensis minor Kaye, Trinidad.

Caligo brasiliensis brasiliensis Feld.

(Pl. V. f. 9 larva, f. 10 pupa)

Larva very large, cylindrical, tapering both ways, and flattened on the back, dirty grey-yellow, with darker spotted dorsal line and irregular black lateral oblique stripes sloping down posteriorly; head with eight horns dirty white, with black lines; on fifth to eighth segments are soft conical protuberances about 4 mm. long; tail-forks 9 mm. long.

Pupa yellowish wood-brown, with black and red-brown streaks and short black bristles. When first hatched the larva is dirty white, changing rapidly to green, with a forked dorsal dark band, which colour it retains till third moult,

Food plant : banana.

Described and figured from a sketch by E. Hartgen and the description in *Seitz*.

***Caligo idomineus* Linn.**

Fruhstorfer in *Seitz* and Herr Stichel place *superba* Staud. as a subspecies of *idomineus*, but as *praecana* Stich. occurs together with it, I am convinced it is just as good and distinct a species as *menoetius* Staud.

***Caligo menoetius* Staud.**

The Tring Museum, besides a ♂ and ♀ from Surinam received from Herr Fruhstorfer in exchange, has obtained recently through M. Le Moutt 3 ♂♂ from St. Jean de Maroni, French Guiana, of this rare insect.

***Caligo arisbe fulgens* subsp. nov.**

♂♀. Differ from *a. arisbe* in being above much brighter yellow, and the greyish yellow band in the centre of the outer black-brown fourth of forewing is much broader and very distinct.

Hab. Rio Janeiro and São Paulo, 3 ♂♂, 6 ♀♀.

***Caligo oberthuri oberthuri* Deyr.**

(Pl. V. f. 3)

Larva almost entirely brown-black, with several dorsal irregular light brown patches; tail-forks short, thick, and covered with stiff rufous hairs, the four fleshy thornlike dorsal appendages bent forward; head rufous brown, with black lines and with eight thorns.

Food-plant a low evergreen palm.

Described and figured from two larvae sent by A. H. Fassl from San Antonio, West Cordillera, Colombia, 2000–3000 m. = 6500–9000 ft.

BRASSOLIDAE

***Brassolis sophorae sophorae* Linn.**

(Pl. VI. f. 7 larva, f. 9 pupa)

Larva cylindrical, tapering towards head, mouse-grey with darker longitudinal lines and bands, the two subdorsal ones being very wide, while the dorsal and lateral ones are very narrow; but the one on the line of spiracles is again broader, but less sharply defined; head with two broad black bands.

Pupa reddish wood-brown, banded and spotted with dark brown and with a whitish irregular patch on the wing-cases.

Described and figured from a sketch by E. Hartgen.

Food-plant : palms, feeding gregariously.

***Brassolis sophorae vulpeculus* Stich.**

This form is not confined to Argentina and Paraguay, as Stichel and Fruhstorfer believed, but is found in all the arid and desert portions of Brazil as well, and it also occurs in British Guiana as a rare aberration,

I have 2 ♂♂ and 2 ♀♀ from Maranham, and 2 ♂♂ from Rio Demerara.

Larva similar to *s. sophorae*, but ground-colour much suffused with brownish yellow, and the bands are dark chocolate brown.

Described from larvae sent by J. Steinbach from Tucuman and by F. Schimpf from San Bernardino, Paraguay.

***Brassolis astyra astyra* Godt.**

(Pl. VI. f. 8)

Larva similar to *B. sophorae*, but thicker, much more suffused with dirty yellow, and the bands broken up into spots, while innumerable narrow dark transverse lines encircle the body from the head to anal segment.

Figured and described from two larvae from Rio.

***Brassolis astyra rufescens* subsp. nov.**

♀. Very large and the oblique band of forewing as wide as in ♀ *a. maritima* Stich., but rusty orange scarlet, not rusty orange.

Hab. Peru, 1 ♀, Huancabamba, Cerro de Pasco (C. Böttger).

***Brassolis isthmia* Bates and *granadensis* Stich.**

I cannot see anything more than two subspecies in these two—a northern and a southern subspecies of one species.

***Brassolis isthmia boliviana* subsp. nov.**

♂♀. Larger than either *isthmia isthmia* Bates or *isthmia granadensis* Stich.; differs above in the ♂ in the oblique band being much darker, orange rufous as in the ♀, and between veins 2 and 3 it is strongly produced; in the ♀ the black discocellular band is much larger than in either of the other forms. Below it is paler in both sexes.

Length of forewing; ♂ 46 mm., ♀ 62 mm. Expanse: ♂ 101 mm., ♀ 133 mm.

Hab. Bolivia, 1 ♂, Buenavista, E. Bolivia, 750 m. = 2437 ft., August 1906—April 1907; 1 ♀, Prov. Sara, Sta Cruz de la Sierra, April—May 1904 (J. Steinbach).

DISCOPHORIDAE

These insects, in my opinion, bear the same relationship to the *Amathusiidae* as the *Morphidae* do to the **Brassolidae**.

***Enispe euthymius intermedia* subsp. nov.**

This race is exactly intermediate between *e. euthymius* and *e. durania*, having the dark bands and spots more developed than the former, but not so much as in the latter.

Hab. Burma to the Malay Peninsula and Siam, 3 ♂♂, Bernadmayo and North Chin Hills, Tavoy (Bingham); 5 ♂♂, Perak; 1 ♂, Paughir, Shan States, 3000 ft.

MORPHIDAE

Here I have much to say, but in many cases the facts are so difficult to work out that I must leave some of my remarks for a future paper.

Morpho perseus richardus Fruhst.

(Pl. VI. f. 1)

Larva slug-like, narrowing rapidly towards head, thickly clothed with very short hair, and with rows of hair tufts along the back and sides, deep red with small black and yellowish buff patches.

Described and figured from a larva from Minas Geraes.

Morpho perseus iphiclus Feld.

(Pl. VI. f. 3 larva, f. 4 pupa)

I am unable to see any difference between Colombian *p. iphiclus* (type Felder coll.) and the series collected on the Cauca River by S. M. Klages.

Larva deep red with irregular cream-coloured bands.

Pupa with two short points on head bright grass-green.

Described and figured from larvae and pupae sent by S. M. Klages, Maripa, Cauca River.

Morpho patroclus phokylides Fruhst.

(Pl. VI. f. 2)

Larva orange buffy yellow, strigillated and streaked with deep red; on third, sixth, and seventh segments twin golden yellow patches edged with deep red, and on the fourth, fifth, seventh, and eighth segments is a large single golden yellow patch, also edged with red; tufts of hair pale crimson.

Figured and described from two beautifully preserved larvae sent by J. Steinbach, Buenavista, E. Bolivia, August 1906—April 1907.

Morpho sulkowskyi ockendeni subsp. nov.

♂. Differs from all other forms in the hindwing between costa and vein 3 being enormously produced.

♀. Differs from all other forms in the dark outer band-like margin of forewing being red as on the hindwing, not black or dark brown.

Hab. S.E. Peru, Carabaya (G. Ockenden).

Morpho aurora interposita subsp. nov.

♂. Intermediate in colour between *aurora* and *aureola*, and still larger than *aurora*.

♀. Larger, paler, more the colour of *Morpho portis*, a large brown patch followed by a white on upper discocellulars, reaching far in and also beyond cell of forewing; marginal black-brown border twice as wide as in ♂, and containing two pinkish lines. Hindwing: outer fourth pinkish cinnamon brown with two irregular dark brown bands coalescing at nervures. Below as in ♂, but paler, and with a strong greenish opalescent wash.

Hab. S.E. Peru, La Oroya, Inambari, and Santo Domingo, Carabaya, 28 ♂♂, 1 ♀, 3100–4500 ft., 1901–1905 (G. Ockenden).

Morpho adonis Cram., **Morpho adonis major** Lathy, **Morpho marcus** Schaller,
Morpho eugenia Deyr., and **Morpho uraneis** Bates

Here we find a most awful confusion. Herr Fruhstorfer has stated that *eugenia* Deyr. is the same as *adonis* Cram., while he keeps *uraneis* Bates as a separate species, and he places *marcus* Schaller as the ♀ of *adonis* Cram. The truth is that *eugenia* Deyr. is **not** the same as *adonis* Cram., but is an insect with much shorter, blunter, and broader wings, and much more silvery blue colour; in fact, it bears the same relationship to the Guiana *adonis* Cram. as *uraneis* Bates does to *adonis major* Lathy from the Peruvian Amazon, which latter is not mentioned by Fruhstorfer. Now as to *M. marcus* Schaller: this has been held by most entomologists, including Herr Fruhstorfer, to be the ♀ of *adonis* Cram., and it is certainly taken in the same localities with it. However, the only recorded specimen taken in copulation with a ♂, and now in the collection of Mr. Ch. Oberthür, was undoubtedly taken in copulation with a ♂ *eugenia* Deyr., and **not** with an *adonis* Cram. ♂. I have two fine ♀♀ of *M. uraneis* Bates, as well as three ♂♂, and they are exactly similar to *M. marcus* Schaller, only nearly double the size, and have perfectly rounded hindwings, with no sign of the tail-like anal appendage always present in all Guiana ♀♀ = *marcus* Schaller, which have been figured or which I have seen—*i.e.* two in Tring, several in the British Museum, one in Mr. Kaye's collection, the ones figured by Schaller and Oberthür, and the photographs I have of eight in the collection of Mademoiselle de Florrack of Paris. In the collection of the late Mr. Adams, now in the British Museum, are the types of Mr. Lathy's *M. adonis major*, two ♂♂, one ♀, collected in Peru by Messrs. H. and C. Watkins. The ♀ resembles my two ♀♀ of *uraneis* Bates, and is probably a small ♀ of that species, especially from the fact that Mr. Maxwell Stuart, when he took mine on the Rio Cachiaco, collected also a number of ♂♂ of *adonis major*. In view of the fact that the only proof we have by actual capture in copulation gives us *marcus* paired with *eugenia*, I am inclined to believe that we do not know the true female of *adonis*. If this is really the case, then *marcus* antedates *eugenia* by some eighty or more years, and we have the following two species to tabulate.

Morpho marcus marcus Schaller, Guiana.

Morpho marcus uraneis Bates, Peru and Peruvian Amazons.

Morpho adonis adonis Cram., Guianas.

Morpho adonis major Lathy, Peru and Peruvian Amazons.

Mr. Kaye has advanced the theory that *eugenia* is the dry-season form of *adonis*. I cannot at present agree to this, as Mr. Le Moutt has received considerable series of both taken at the same time, and I have 11 ♂♂ of *adonis major* captured by Mr. Maxwell Stuart at the same time and place on the Rio Cachiaco as the *uraneis* mentioned above. I fear, however, this confusion will not be finally cleared up till *adonis* ♀ has been bred or taken in copulation with an undoubted ♂.

Morpho cypris schausi subsp. nov.

♂. Above has the wide white band of *c. bugaba* Staud. from Chiriqui, but is as large as the largest typical *c. cypris*. Below has even larger ocelli than *c. cypris*, **not** the tiny ones of *c. bugaba*.

Hab. Costa Rica, 1 ♂, Carillo (W. Schaus).

Morpho alexandrowna Druce

This form has absolutely nothing to do with *M. godarti*, as Fruhstorfer puts it, hinting that it may be the ♂ of *alexandra* Hew. It is the Central and Southern Peruvian race of *menelaus* Linn., with the dark border slightly less pronounced than in *melacheilus* Stand.

Morpho alexandra Hew.

This insect has been rightly placed by Fruhstorfer under *godarti*. I have been able to definitely discover, with the help of Mr. Watson of Manchester, that the type is no longer in existence, but there is no doubt that it was a specimen of the S.E. Peruvian race of *godarti* Guér. The Tring Museum possesses 22 ♂♂ and 1 ♀ from the Carabaya and Rio Inambari districts from G. Ockenden, and 1 ♀ from Yahuar Mayo from H. and C. Watkins.

[Hartgen's unpublished sketches mentioned in the preceding pages are contained in the Tring Museum Library.]

THE NAME OF THE CENTRAL EUROPEAN CORMORANT.

BY DR. ERNST HARTERT.

Antea, pp. 293-5, I discussed the names of the two subspecies of large European Cormorants, and came to the conclusion that Brehm's name *arboreus* was doubtful, and that *subcormoranus* (of the same date) was preferable. This discussion is now unnecessary, because the name *subcormoranus* was published already seven years before that of *arboreus*—viz. in Brehm's *Ornis* i. p. 42 (1824—"Holland"), and is therefore alone valid by priority.

This name is one of many of Brehm's names which were published years before the dates under which they have hitherto been quoted in literature. A full list of all these earlier dates will be published in the *Novitates Zoologicae* for 1917.

ON THE LEPIDOPTERA IN THE TRING MUSEUM SENT
BY MR. A. S. MEEK FROM THE ADMIRALTY ISLANDS,
DAMPIER AND VULCAN ISLANDS.

BY LORD ROTHSCHILD, F.R.S., PH.D.

(Continued from vol. xxii, p. 402, 1915)

HETEROCERA

AMATIDAE

184. **Ceryx guttulosa** (Walk.)

Syntomis guttulosa Walker, *List Lep. Ins. Brit. Mus.* xxxi. p. 73 (1864) (Aru).

1 ♂, 5 ♀ ♀, Vulcan Island.

185. **Ceryx puncta** (Druce)

Agophthora puncta Druce, *Ann. Mag. Nat. Hist.* (7) i. p. 147 (1898) (Humboldt Bay).

2 ♂ ♂, Vulcan Island.

186. **Euchromia oenone** Butl.

Euchromia oenone Butler, *Journ. Linn. Soc. Lond. Zool.* xii. p. 365 (1876) (Solomon Islands).

2 ♂ ♂, 6 ♀ ♀, Manus, Admiralty Islands.

187. **Euchromia aemulina** Butl.

Euchromia aemulina Butler, *Proc. Zool. Soc. Lond.* 1877, p. 473 (New Guinea).

2 ♀ ♀, Vulcan Island.

188. **Euchromia aemulina minuta** subsp. nov.

♀. Differs from ♀ *ae. aemulina* in being much smaller, and the hyaline patch at base of hindwing is much larger.

Length of forewing : ♀ *aemulina aemulina*, 22—23 mm.

” ” ♀ *aemulina minuta*, 16·5—19 mm.

1 ♀, Dampier Island ; 1 ♀, Manus, Admiralty Islands.

189. **Euchromia lurlina lurlina** Butl.

Euchromia lurlina Butler, *Trans. Entom. Soc. Lond.* 1888, p. 110 (Thursday Island).

4 ♂ ♂, 4 ♀ ♀, Vulcan Island.

190. **Euchromia lurlina intensa** subsp. nov.

♀. Differs at first sight from *l. lurlina* by its much more intense coloration.

The tegulae are black, **not** orange ; the band on first segment of abdomen is orange, **not** pale cream-buff ; and the band on fourth abdominal segment is orange

rufous, **not** orange yellow ; while all the hyaline patches on both wings are much smaller, the one at base of hindwing having almost vanished.

1 ♀, Dampier Island.

191. **Euchromia iria** (Boisd.)

Glaucopis irius Boisduval, *Voy. Astrolabe, Léop.* p. 192, pl. 5. f. 8 (1832) (Moluccas).

1 ♂, 1 ♀, Vulcan Island.

192. **Euchromia creusa superposita** subsp. nov.

Differs from the rest of the *creusa* forms by the first abdominal segment being yellow and the second buff with a blue band superimposed on it, almost as in *iria*.

1 ♂, 4 ♀ ♀, Manus, Admiralty Islands.

ARCTIADAE

Nolinae

193. **Pisara hyalospila** Hmps. n.

Pisara hyalospila Hampson, *Cat. Lepid. Phal. Brit. Mus. Suppl. i.* p. 389. f. 54 (1914) (Queensland).

7 ♂ ♂, Dampier Island.

194. **Celama internella** (Walk.)

Pisara internella Walker, *List Lepid. Ins. Brit. Mus.* xxxi. p. 245 (1864) (Sarawak).

1 ♂, Manus, Admiralty Islands.

195. **Celama thyridota** Hmps. n.

Celama thyridota Hampson, *Cat. Lepid. Phal. Brit. Mus. Suppl. i.* p. 390. f. 55 (1914) (Brisbane).

1 ♂, 2 ♀ ♀, Vulcan Island ; 1 ♀, Dampier Island ; 2 ♂ ♂, 1 ♀, Manus, Admiralty Islands.

196. **Celama fasciata** (Walk.)

Minnagara fasciata Walker, *List Lepid. Ins. Brit. Mus.* xxxv. p. 1903 (1866) (Sula).

1 ♂, Manus, Admiralty Islands.

197. **Celama interrupta** sp. nov.

♂. Antennae brownish white ; head white ; thorax white, freckled and suffused with grey ; abdomen white suffused with pale grey.

Forewing white, three large cuneate brown spots reaching from costa almost to median vein across cell ; below the two outer of these spots run from median vein to inner margin interrupted sooty transverse bands ; in outer two-fifths of wing two sinuate sooty brown lines, fringe suffused with sooty scales.—*Hindwing* silvery grey.

Length of forewing : 8 mm. Expanse : 18 mm.

1 ♂, Vulcan Island.

198. *Celama nebulosa* sp. nov.

♀. Antennae and head white; thorax whitish grey; abdomen grey.

Forewing greyish white, a series of brownish spots in costal area, the three nearest base being largest; basal half sparingly irrorated with yellowish brown, outer half densely clouded with yellowish brown, a submarginal line of leaden spots.—*Hindwing* whitish grey, darker in outer fifth.

Length of forewing: 6–8 mm. Expanse: 14–18 mm.

2 ♀♀, Vulcan Island; 1 ♀, Dampier Island. (Type Vulcan.)

199. *Celama flavomarginata* sp. nov.

♂. Antennae yellowish; head, thorax, and first two segments of abdomen white; rest of abdomen greyish.

Forewing white; costa and broad terminal band brownish yellow; costa and fringe variegated somewhat with white; antemedian and postmedian interrupted bands brownish yellow.—*Hindwing* white, termen greyish.

Length of forewing: 7 mm. Expanse: 16 mm.

1 ♂, Vulcan Island.

200. *Celama bilineola* sp. nov.

♀. Antennae amber-brown; head, thorax, and abdomen greyish white clouded with grey.

Forewing white; base, an antemedian and two postmedian irregular cloud-bands yellowish wood-grey; in the antemedian and in the first postmedian cloud-band is a sinuate brown line; a terminal line yellowish brown.—*Hindwing* white; a grey terminal line.

Length of forewing: 8 mm. Expanse: 18 mm.

1 ♀, Dampier Island.

201. *Celama taeniata* (Snell.)

Nola taeniata Snellen, *Tijd. v. Entom.* xviii. p. 65. pl. 6. f. 1 (1875) (Celebes).

1 ♂, 1 ♀, Dampier Island.

202. *Celama pumila* (Snell.)

Nola pumila Snellen, *Tijd. v. Entom.* xviii. p. 68. pl. 6. f. 4 (1875) (Celebes).

1 ♂, Vulcan Island.

203. *Celama cristicostata* sp. nov.

♂. Antennae amber-brown; palpi, head and tegulae white; rest of thorax whitish densely speckled with wood-brown; abdomen whitish wood-grey.

Forewing white; in basal two-fifths of costal area some liver-brown patches, on outer half of costa a white tuft or crest, whole wing clouded with large patches of orange liver-brown, and with several sinuate indistinct lines of dark brown partly coalescent dots, a white subterminal line.—*Hindwing* whitish grey.

Length of forewing: 7.5 mm. Expanse: 17 mm.

1 ♂, Vulcan Island.

204. *Celama murina* sp. nov.

♀. Antennae mouse-grey; head, thorax, and abdomen silvery slate-grey washed with mouse-grey.

Forewing mouse-grey clouded with paler grey; four transverse indistinct and ill-defined sinuate bands of dark brown-grey, the second from the base being double the width of the others.—*Hindwing* partially semivitreous and pale mouse-grey.

Length of forewing: 11 mm. Expanse: 25 mm.

1 ♀, Dampier Island.

205. *Roeselia nigrobasalis* sp. nov.

♂. Antennae brown, pectinated; head and tegulae pale cinnamon; rest of thorax brown-black; abdomen dark wood-grey.

Forewing: basal half somewhat obliquely dull black, edged outwardly with rufous cinnamon; outer half dirty white, densely suffused and overlaid with rufous cinnamon.—*Hindwing* pale mouse-grey.

Length of forewing: 9.5 mm. Expanse: 21 mm.

1 ♂, Dampier Island.

206. *Eurynola mesoleuca* (Lower)

Corula? mesoleuca Lower, *Trans. Roy. Soc. S. Austr.* xxvii. p. 39. (1903) (Queensland).

6 ♂♂, 1 ♀, Manus, Admiralty Islands.

207. *Eurynola gigantea* sp. nov.

♀. Differs from ♀ *mesoleuca* in being much larger, in the white, **not** brown thorax, in having costal half of basal seventh of forewing brown-black, in having an antemedian transverse line of brown-black sharply angled distad, in the white area of forewing being much reduced, and in the post-discal transverse line being much more deeply dentate.

Length of forewing: *mesoleuca* 14 mm., *gigantea* 17.5 mm.

Expanse: *mesoleuca* 32 mm., *gigantea* 40 mm.

2 ♀♀, Dampier Island.

208. *Eurynola hemizona* (Hmps.)

Roeselia hemizona Hampson, *Ann. Mag. Nat. Hist.* (8) viii p. 400 (1911) (Fak Fak).

4 ♂♂, Dampier Island.

Lithosiinae209. *Graphosia polylophota griseola* subsp. nov.

♂. Differs from *p. polylophota* in being paler buff washed over with cinereous grey.
1 ♂, Vulcan Island.

210. *Graphosia simplex* sp. nov.

♂. Structurally and in shape identical with *polylophota*, but uniform pale buff all over; a tuft of dark brown androconial hairs on costal edge of hindwing.

Length of forewing: 12 mm. Expanse: 27 mm.

1 ♂, Dampier Island.

211. *Lambula agraphia* Hmps.

Lambula agraphia Hampson, *Cat. Lepid. Phal. Brit. Mus.* ii. Addenda p. 558. No. 173b. pl. xxxv. f. 17 (1900) Milne Bay).

10 ♂♂, Dampier Island; 1 ♂, Vulcan Island.

212. *Lambula contigua* sp. nov.

♀. Closely allied to *pristina* Walk. Differs in the forewing being much broader and in the colour being clear yellowish buff, **not** greyish buff.

Length of forewing: 12 mm. Expanse: 27 mm.

1 ♀, Dampier Island.

213. *Lambula hypopolius* sp. nov.

♂♀. Antennae, head and thorax pale buffish grey; abdomen pale mouse-grey.

Forewing pale buffish grey.—*Hindwing* pale mouse-grey.

Length of forewing: 10 mm. Expanse: 23 mm.

1 ♂, 1 ♀, Dampier Island.

214. *Lambula plumicornis* sp. nov.

♂. Antennae plumose amber-buff; head and thorax pale brownish buff; abdomen pale testaceous grey.

Forewing pale buff with some indistinct brown spots round margins and costa; a brown dot in cell and a black-brown spot at end of cell; the veins stand out strongly, giving the intranervular spaces a ribbed or corrugated appearance.—*Hindwing* brownish mouse-grey.

Length of forewing: 10 mm. Expanse: 24 mm.

1 ♂, Manus, Admiralty Islands.

215. *Scoliacma brunnea* Druce.

Scoliacma brunnea Druce, *Ann. Mag. Nat. Hist.* (7) iv. p. 201 (1899) (Port Moresby).

1 ♂, 2 ♀♀, Dampier Island.

216. *Scoliacma pactolias* Meyr.

Scoliacma pactolias Meyrick, *Proc. Linn. Soc. N.S.W.* (2) i. p. 696 (1886) (Melbourne).

1 ♀, Dampier Island.

217. *Scoliacma flavifrons* sp. nov.

♀. Antennae dark brown; head, tegulae and base of patagia buffy yellow, rest of thorax dark grey, hindmost part tinged with yellow; abdomen dark grey, sides and anal tuft yellow.

Forewing pale testaceous grey, base and costa yellowish.—*Hindwing* greyish buff.

♂. Similar, but much smaller.

Length of forewing: ♂ 12, ♀ 15 mm. Expanse: ♂ 28, ♀ 34 mm.

1 ♂, 2 ♀♀, Vulcan Island. (♂ Type.)

218. *Scoliacma flavifrons minor* subsp. nov.

♀. Similar to *f. flavifrons*, but much smaller and costa brighter and more extended yellow.

Length of forewing: 12 mm. Expanse: 28 mm.

1 ♀, Dampier Island.

219. *Scoliacma asuroides* sp. nov.

♂. Antennae yellow, distal two-fifths dark brown; head and thorax golden-buffish yellow; abdomen grey, anal half suffused with buff, anal tuft buff.

Forewing golden-buffish yellow.—*Hindwing* buff.

♀. Similar.

Length of forewing: 11 mm. Expanse 25 mm.

3 ♂♂, 4 ♀♀, Vulcan Island.

220. *Nishada impervia* (Walk.)

Lithosia impervia Walker, *List Lepid. Ins. Brit. Mus.* xxxi. p. 230 (1864) (Ceram).

3 ♂♂, Dampier Island.

221. *Ilema elophus* sp. nov.

♂. Antennae black-brown; head sooty grey; thorax purplish cinnamon brown, margins of tegulae and bases of patagia yellowish; abdomen yellowish cinnamon grey, anal tuft orange buff.

Forewing cinnamon-grey; costa and termen dark buff.—*Hindwing* pale cinnamon-grey washed with bright buff, margins clearer buff.

♀. Has head and tegulae orange; forewing much darker and hindwing buff.

Length of forewing: ♂ 16, ♀ 17 mm. Expanse: ♂ 37, ♀ 39 mm.

4 ♂♂, 2 ♀♀, Vulcan Island.

222. *Ilema aurora* sp. nov.

♀. Antennae dark brown; head orange; thorax grey, tinged with pinkish lavender; abdomen buff, suffused with grey on basal half.

Forewing pale grey, slightly suffused with pinkish lavender; costa orange, terminal fringe yellowish buff.—*Hindwing* buff.

Length of forewing: 17 mm. Expanse: 39 mm.

1 ♀, Vulcan Island.

223. *Ilema bipunctata* (Walk.)

Lithosia bipunctata Walker, *List Lepid. Ins. Brit. Mus.* xxxv. p. 1884 (1866) (New Guinea).

4 ♂♂, 5 ♀♀, Dampier Island.

224. *Ilema dorsalis* (Walk.)

Lithosia dorsalis Walker, *List Lepid. Ins. Brit. Mus.* xxxv. p. 1883 (1866) (Sula).

1 ♂, Dampier Island.

225. *Ilema ekeikei* B. Baker

Ilema ekeikei Bethune Baker, *Nov. Zool.* xi. p. 419. pl. V. f. 16 (1904) (British New Guinea).

2 ♀ ♀, Dampier Island.

226. *Ilema amaurus* sp. nov.

♂. Antennae brown; head and tegulae orange-buff, rest of thorax dull brownish grey tinged with buff; abdomen buff, suffused with grey basally.

Forewing: costal third orange-buff, rest mauve-grey suffused with buff.—

Hindwing buff.

Length of forewing: 11 mm. Expanse: 25 mm.

1 ♂, Manus, Admiralty Islands.

227. *Manoba taeniatus* sp. nov.

♀. Antennae grey; head and thorax silver-grey; abdomen dark grey.

Forewing silver-grey; two or three indistinct brownish dots in basal third, an oblique antemedian broad dark grey band, three dark brown spots, two obsolete greyish brown lines, and a terminal row of dark grey dots in outer half of wing.—

Hindwing pale mouse-grey.

Length of forewing: 7 mm. Expanse: 16 mm.

1 ♀, Dampier Island.

228. *Garudinodes trizona* Hmps. n.

Garudinodes trizona Hampson, *Ann. Mag. Nat. Hist.* (8) viii. p. 403 (1911) (Ron Island).

1 ♂, Dampier Island.

229. *Padenodes cuprizona* Hmps. n.

Padenodes cuprizona Hampson, *Cat. Lepid. Phal. Brit. Mus.* Suppl. i. p. 567. No. 546a. fig. 158 (1914) (Setekwa River).

1 ♂, Vulcan Island.

230. *Macaduma reducta* Rothsch.

Macaduma rufocostalis reducta Rothschild, *Nov. Zool.* xix. p. 236 (1912) (Fergusson Island).

1 ♀, Dampier Island; 2 ♀ ♀, Vulcan Island.

231. *Macaduma subfoliacea* sp. nov.

♂. Near to *foliacea* but much darker, and lacks the transverse medial line; differs from *nigripuncta* Hampson in the basal third of hindwing being pale yellowish brown-grey, **not**, as in that species, uniform fuscous brown like rest of wing.

Length of forewing: 11 mm. Expanse: 25 mm.

5 ♂ ♂, Vulcan Island.

232. *Macaduma subfoliacea postflavida* subsp. nov.

♂ ♀. Differ from *s. subfoliacea* in the colour of the hindwings. ♂-hindwings are greyish buff with darker fringes; ♀-hindwings are buffish grey.

8 ♂ ♂, 5 ♀ ♀, Dampier Island.

233. *Macaduma nigripuncta* Hmps. n.

Macaduma nigripuncta Hampson, *Cat. Lepid. Phal. Brit. Mus.* ii. Addenda p. 560. No. 561a. pl. xxv. f. 7. (1900) (Milne Bay).

1 ♂, Dampier Island.

234. *Narasodes rufocostalis* (Rothsch.)

Macaduma rufocostalis Rothschild, *Nov. Zool.* xix. p. 236 (1912) (Biagi, Mambare River).

2 ♀ ♀, Vulcan Island.

Anaphleps gen. nov.

Differs from all other genera of *Lithosiniæ* in having vein 2 of forewing absent and in having veins 3 and 4 and 6 and 7 of hindwing stalked, while veins 2, 5, and 8 of hindwing are missing. Scent-organ on forewing consisting of a large semicircular lappet produced from costa and folded back on to disc of wing on the upperside.

235. *Anaphleps angustipennis* sp. nov.

♂. Antennæ brown; head and tegulae gallstone-yellow, washed with grey, rest of thorax purplish cinnamon-brown; abdomen, basal half buff, anal half brownish grey, anal tuft orange-buff.

Forewing very narrow purplish cinnamon-brown; scent-organ purplish sooty black, broadly edged with golden yellow.—*Hindwing*: basal three-fifths obliquely buff; distal two-fifths purplish cinnamon-brown.

Length of forewing: 9 mm.; breadth: 4 mm. Expanse: 20 mm.

1 ♂, Vulcan Island.

236. *Darantasia caerulescens extensa* subsp. nov.

♂ ♀. Differs from *c. caerulescens* in having the orange subapical patch on the forewing and the orange area of the hindwings larger and more extended.

4 ♂ ♂, 4 ♀ ♀, Dampier Island.

237. *Stenoscaptia latifascia* sp. nov.

♂. Antennæ purplish brown; head yellow; tegulae and patagia yellow, the latter washed with pale purple, rest of thorax pale purple; abdomen greyish purple, anal tuft buff.

Forewing pale purple; an oblique very broad median band yellow, narrowing from costa to inner margin, a terminal yellow band from apex to vein 1.—*Hindwing* pale buffish grey, outer fourth darker grey.

Length of forewing: 8 mm. Expanse: 18 mm.

1 ♂, Vulcan Island.

238. *Stenoscaptia dichromus* sp. nov.

♂. Antennæ amber-brown; head and tegulae golden yellow, rest of thorax chestnut; abdomen cinnamon-grey.

Forewing golden yellow; base and outer third chestnut.—*Hindwing*: costal third obliquely white, with large patch of black androconia, rest of wing pale cinnamon.

♀. Differs in having the tegulae chestnut and hindwings cinnamon-brown all over.

4 ♂♂, 3 ♀♀, Dampier Island.

239. *Caprimima elegans mendax* Rothsch.

Caprimima albicollis mendax Rothschild, *Nov. Zool.* viii. p. 419 (1901) (Humboldt Bay).

1 ♂, Dampier Island.

240. *Utriculifera aplaga* Hampsn.

Utriculifera aplaga Hampson, *Cat. Lepid. Phal. Brit. Mus.* ii. Addenda, p. 561. no. 610a. pl. xxxv. f. 3 (1900) (Milne Bay).

2 ♂♂, Manus, Admiralty Islands.

241. *Utriculifera leucogrammus* sp. nov.

♂. Antennae and frons cinnamon-grey; vertex of head and thorax black; abdomen wood-grey.

Forewing cinnamon grey-brown; base and three dots on costa black, an oblique postdiscal line whitish, apical third obliquely darker cinnamon-brown. — *Hindwing*, grey-buff or buffish-grey fringe and termen darker.

Length of forewing: 6 mm. Expanse: 14 mm.

1 ♂, Manus, Admiralty Islands.

242. *Utriculifera tetrastigmata* sp. nov.

♂. Uniform yellowish or creamy grey; abdomen and hindwings slightly less yellowish. Two black dots on median fold of each forewing.

Length of forewing: 7 mm. Expanse: 16 mm.

2 ♂♂, Dampier Island.

243. *Chionaema tricolor dampierensis* subsp. nov.

♂♀. Distinguished from *t. tricolor* by the orange not black patagia, in the much paler reddish orange of forewing and the broader black terminal band between apex and vein 3.

4 ♂♂, 4 ♀♀, Dampier Island.

244. *Chionaema dinava vulcanica* subsp. nov.

♀. Differs from *d. dinava* in having a scarlet patch on thorax and a wider marginal black band which gradually becomes narrower along inner margin, and the abdominal area yellow, not black.

1 ♀, Vulcan Island.

245. *Chionaema orcheia* sp. nov.

♂. Antennae fuscous brown; head and tegulae fuscous brown-grey, patagia and rest of thorax more yellowish; abdomen yellowish wood-grey, basal two segments whitish.

Forewing cinnamon cream-buff, becoming more milk-white towards termen; a

median patch on costa and on inner margin joined by two parallel median lines chocolate-brown, a postdiscal broad chocolate patch from vein 5 to inner margin, a terminal row of brown patches; one-fourth from apex there is an indentation and constriction at costa, beyond which to the median brown patch is a scent-organ covered with long, shaggy, androconial hair.—*Hindwing*: basal two-fifths dirty greyish white, outer three-fifths brown-grey.

♀. Differs in having the median costal patch much larger and the one on inner margin absent, the postdiscal brown band is complete to costa, and the hindwings are uniform brown-grey.

Length of forewing: ♂ 12.5, ♀ 14 mm. Expanse: ♂ 29, ♀ 32 mm.

4 ♂♂, 4 ♀♀, Dampier Island.

246. *Chionaema melanochlorus* sp. nov.

♂. Antennae, head, and thorax bronzy brown; abdomen sooty grey, anal tuft orange-buff.

Forewing bronzy olive-brown, with three or four indistinct transverse sooty black bands, scent-organ banded black and buff.—*Hindwing*: basal half whitish, outer half brown-grey.

♀. Entirely dark sooty grey, washed with bronze on outer third of forewing; a median black stigma.

Length of forewing: ♂ 15, ♀ 13 mm. Expanse: ♂ 34, ♀ 30 mm.

1 ♂, 1 ♀, Dampier Island.

247. *Tricholepis postdivisa* sp. nov.

♂. This species is close to *sinapis* Rothsch. and *ochracea* Rothsch., but the wings are longer and narrower.

Antennae black except first joint; head fulvous orange-yellow, vertex and collar dark brown; thorax fulvous orange; abdomen black, median two-thirds of dorsum fulvous orange-yellow.

Forewing fulvous orange yellow, a somewhat broad costal and terminal border black; distal half of inner margin narrowly black.—*Hindwing*: costal two-fifths fulvous orange-yellow, rest black.

♀. Has much narrower black margins to forewings, and the hindwings are entirely fulvous orange-yellow with narrow black margins, and the whole abdomen fulvous orange-yellow; 1 ♀ has the lower third of hindwing black.

Length of forewing: ♂ ♀ 11 mm. Expanse: 24 mm.

4 ♂♂, 3 ♀♀, Dampier Island.

248. *Asura pallida* Rothsch.

Asura pallida Rothschild, *Nov. Zool.* xx. p. 209 (1913) (Dorey).

3 ♂♂, Dampier Island.

249. *Asura citrinopunctata* Rothsch.

Asura citrinopunctata Rothschild, *Nov. Zool.* xx. p. 206 (1913) (Kumusi River).

2 ♂♂, 1 ♀, Vulcan Island.

250. *Asura suavis* (Pag.)

Calligenia suavis Pagenstecher, *Jahrb. Nass. Ver. Naturk.* xxxix. p. 126 (1886) (Aru Islands).

1 ♀, Vulcan Island.

251. *Asura reticulata* (Feld.)

Cyme reticulata Felder, *Sitz. Akad. Wiss. Wien.* xliii. p. 36 (1861) (Amboina).

2 ♂♂, 5 ♀♀, Dampier Island.

252. *Asura manusi* sp. nov.

♂. Antennae black, basal two segments scarlet, apical sixth umber brown; head and thorax golden yellow, tegulae and patagia slightly edged with scarlet, rest faintly tinged with red; abdomen salmon-pink.

Forewing blackish slate, a large basal patch, a costal patch, and a very large medial oblique patch reaching from costa to just beyond vein 2 golden yellow surrounded by red hair-lines, a medial spot below vein 2 golden yellow edged with red and joined to large medial patch by red hair-line, an antemedial patch below median fold yellow suffused with scarlet; a postmedian curved band of coalescent cone-shaped spots yellow strongly suffused with scarlet, an irregular scarlet sub-terminal band.—*Hindwing* buff suffused with pink, strongest near margins; termen and fringe blackish slate.

♀. Rather variable in size of spots and bands on forewing; differs from ♂ in the thorax and head being orange to deep scarlet and the markings on forewing also scarlet, though 2 ♀♀ show some yellow, and 1 ♀ has forewings almost entirely slate-colour owing to the absence of the medial and antemedial markings.

Length of forewing: ♂ 12, ♀ 13–15.5 mm. Expanse: ♂ 27, ♀ 30–35 mm.

5 ♂♂, 10 ♀♀, Manus, Admiralty Islands.

253. *Asura reversa* sp. nov.

♂. At first sight very close to preceding species, but distinguished at once by the absence in both sexes of the broad slate-coloured terminal band on the underside of the forewings, and by the presence in the ♂ of a slaty band on the underside of the abdomen before the claspers. Antennae black-brown, basal three segments scarlet; head and thorax orange-scarlet; abdomen salmon-pink.

Forewing yellow, strongly suffused with scarlet, except in basal fifth and above vein 2 to below subcostal between medial and postmedial bands, antemedial, post-medial, and medial curved bands joined by longitudinal bars slate-coloured, an irregular zigzag subterminal band also slate-coloured.—*Hindwing* buff, suffused with pale crimson in abdominal and submarginal portions, fringe deep buff.

♀. Similar.

Length of forewing: ♂ 11.5–13, ♀ 12–15 mm. Expanse: ♂ 26–29, ♀ 28–34 mm.

3 ♂♂, 6 ♀♀, Manus, Admiralty Islands.

254. *Asura reversa dampierensis* subsp. nov.

♂♀. Differ from *r. reversa* in the ground-colour of forewing being entirely crimson scarlet and in the slate-coloured bands being much more irregular.

4 ♂♂, 4 ♀♀, Dampier Island.

255. *Asura bipartita* sp. nov.

♂ ♀. Orange-yellow, outer two-fifths of both wings dark slate-grey.
Length of forewing: ♂ 10, ♀ 13 mm. Expanse: ♂ 23, ♀ 30 mm.
4 ♂♂, 4 ♀♀, Dampier Island.

256. *Asura dirhabdus* sp. nov.

♂. Antennae, head, and thorax buffish orange; abdomen buff.
Forewing buffish orange, antemedial and postmedial broad irregular bands sooty black.—*Hindwing* bright buff.

♀. Differs in the black bands of forewing being joined by a black line along vein 1.

Length of forewing: ♂ 9–11, ♀ 13 mm. Expanse: ♂ 21–25, ♀ 29 mm.
5 ♂♂, 3 ♀♀, Dampier Island.

257. *Asura dirhabdus postfasciatus* subsp. nov.

♂. Differs from *d. dirhabdus* in the black transverse bands on forewing being much more irregular and in their being joined along vein 1 as in the ♀. On the hindwing it differs in having a broad postmedial sooty shadow-band.

♀. Has this band much more distinct, and the bands of forewing differing as in the ♂.

3 ♂♂, 4 ♀♀, Manus, Admiralty Islands.

258. *Asura mylea* sp. nov.

♀. Antennae amber-yellow; head, tegulae, and patagia golden orange; rest of thorax and abdomen greyish yellow.

Forewing golden orange, with four irregular sinuous and zigzag cinnamon-grey bands.—*Hindwing* semivitreous buff.

Length of forewing: 13.5 mm. Expanse: 31 mm.
1 ♀, Dampier Island.

259. *Philenora sordidior* (Rothsch.)

Eugoa mediopuncta sordidior Rothschild, *Nov. Zool.* xx, p. 222 (1913) (Kumusi River).

5 ♂♂, 4 ♀♀, Manus, Admiralty Islands.

260. *Philenora hypopolius* sp. nov.

♀. Antennae brown-grey; head and thorax silver grey; abdomen pale mouse-grey.

Forewing whitish cream-grey; a curved and angled antemedial line, a median stigma, a broad postmedial band forked below vein 2, a broken subterminal band and a terminal line pale chocolate-brown.—*Hindwing*: basal half and a terminal band greyish white, rest mouse-grey.

♂. Much smaller.

Length of forewing: ♀ 12, ♂ 6.5 mm. Expanse: ♀ 27, ♂ 15 mm.
1 ♂, 1 ♀, Dampier Island.

261. *Philenora murina* sp. nov.

♀. Antennae, head, thorax, and abdomen mouse-grey.

Forewing mouse-grey; some subbasal spots and a broad medial band dark brown, a postmedial costal spot, a zigzag oblique band from apex to medial band, a row of subterminal dots on lower half of wing, and a row of terminal dots paler brown.—*Hindwing* mouse-grey, basal half suffused whitish. A second ♀ has the medial band of the same paler brown as the postmedial markings.

Length of forewing: 10–11 mm. Expanse: 23–25 mm.

2 ♀♀, Manus, Admiralty Islands.

262. *Philenora ypsilon* sp. nov.

♀. Antennae yellowish; head and thorax creamy white; brownish grey-buff.

Forewing pale cream-buff; outer fourth brown-buff, strongly sprinkled with black scales, a brown discal *T* the right or inner arm less strongly marked.—*Hindwing* fulvous buff.

Length of forewing: 10 mm. Expanse: 23 mm.

1 ♀, Dampier Island.

263. *Schistophleps plagosus* sp. nov.

♂. Antennae amber-yellow; head and thorax white; abdomen whitish, anal tuft cream-buff.

Forewing cream-white; a large irregular grey patch on disc strongly constricted medially, above the constricted centre a black dot, two costal and a curved subapicoterminal band of spots wax-yellow.—*Hindwing* semivitreous pure white.

Length of forewing: 9 mm. Expanse: 20 mm.

1 ♂, Dampier Island.

264. *Schistophleps manusi* sp. nov.

♂♀. Uniform cream-white; costal, basal and inner areas of forewing with dense thickened patches of buff scales, disc of forewing with some irregular faint grey patches; hindwing semihyaline white.

Length of forewing: 7 mm. Expanse: 16 mm.

6 ♂♂, 2 ♀♀, Manus, Admiralty Islands.

265. *Schistophleps irregularis* sp. nov.

♂. Body and antennae cream-white; wings semihyaline white, forewing with broad greyish yellow antemedian, median and postmedian bands coalescing into one large patch on lower portion of wing, an irregular greyish yellow curved apical band.

Length of forewing: 8 mm. Expanse: 18 mm.

1 ♂, Manus, Admiralty Islands.

266. *Eriomastyx flavofasciata* sp. nov.

♀. Hyaline white; the body and antennae white; the wings sprinkled with short white hairs; on the forewings is a subbasal band of gallstone-orange and an antemedian and median band of the same colour somewhat broken into spots and

joined below subcostal, a submarginal and marginal band of gallstone-orange patches, similar patches along costa; nervures beyond middle of wing orange-yellow.

Length of forewing: 12 mm. Expanse: 26.5 mm.

1 ♀, Dampier Island.

267. *Eriomastyx lacteata* sp. nov.

♂. Body and wings pale creamy buff, the latter very thinly scaled. On forewing an antemedian and median band of golden-orange spots, the latter forked from middle of cell to costa; a submarginal and marginal row of similar smaller spots.

Length of forewing: 9 mm. Expanse: 20 mm.

1 ♂, Vulcan Island.

268. *Chamaita fasciata* sp. nov.

♂♀. Creamy buff, hindwings whiter; on forewing five irregular sinuous oblique gallstone-orange bands.

Length of forewing: 8 mm. Expanse: 18 mm.

2 ♂♂, 2 ♀♀, Dampier Island.

269. *Chamaita semifasciata* sp. nov.

♀. Head and body cream-white; wings semihyaline white; forewing crossed by four irregular oblique gallstone-orange bands which become obsolete below median vein.

Length of forewing: 9.5 mm. Expanse: 21 mm.

1 ♀, Dampier Island.

270. *Lambula dampierensis* sp. nov.

♂. Antennae bronzy brown; head and thorax rufous orange; abdomen sooty purple-brown, two patches on sides of first and anal segments, and anal tuft dull orange.

Forewing brownish mauve-violet, suffused in streaks with purplish steel-blue; a triangular golden-orange spot in cell and a similar line below median vein from base of wing almost to termen.—*Hindwing* golden yellow, bordered with sooty black as wide as one-third of wing.

♀. Similar, but without orange spot and line on forewing.

Length of forewing: ♂ 12, ♀ 10 mm. Expanse: ♂ 27, ♀ 23 mm.

6 ♂♂, 2 ♀♀, Dampier Island.

271. *Scoliacma conspersa* sp. nov.

♀. Antennae pale brown; head, thorax, and abdomen sooty wood-brown.

Forewing wood-brown, sprinkled all over with rufous-brown.—*Hindwing* brownish grey.

Length of forewing 11 mm. Expanse: 25 mm.

3 ♀♀, Dampier Island.

Arctianae

272. *Diacrisia ougarra germanica* Rothsch.

Diacrisia ougarra germanica Rothschild, *Nov. Zool.* xvii. p. 146. No. 988a (1910) (Sattelberg).

2 ♂♂, Dampier Island.

273. *Diacrisia turbida montana* Rothsch.

Diacrisia turbida montana Rothschild, *Nov. Zool.* xvii. p. 145. No. 987c (1910) (S.E. New Guinea).

3 ♂♂, 5 ♀♀, Vulcan Island.

274. *Diacrisia niceta semirosea* (Butl.)

Arctia semirosea Butler, *Ann. Mag. Nat. Hist.* (5) xix. p. 217 (1887) (Solomon Islands).

1 ♂, 5 ♀♀, Dampier Island.

275. *Diacrisia niceta pallida* subsp. nov.

♂. Similar to *niceta papuana* Rothsch., but forewing much paler cinnamon cream-colour.

7 ♂♂, Vulcan Island.

276. *Amsacta marginata punctipennis* (Butl.)

Arctia punctipennis Butler, *Ann. Mag. Nat. Hist.* (4) xviii. p. 126 (1876) (Cape York).

The single specimen has the red costa of forewing and the red of the abdomen replaced by yellow.

1 ♂, Vulcan Island.

277. *Rhodogastria timolis tenebrosa* subsp. nov.

♂. Much darker than *t. timolis*, strongly suffused with sooty brown.

♀. Differs from *t. timolis* in the darker forewings.

3 ♂♂, 3 ♀♀, Vulcan Island.

278. *Rhodogastria communis minor* subsp. nov.

♂♀. Very much smaller and duskier than *c. communis* Walk. from Buru, and the ♂ has the whole abdomen a dull brick-red.

Length of forewing: ♂ 25, ♀ 31 mm. Expanse: ♂ 55.5, ♀ 68 mm.

3 ♂♂, 3 ♀♀, Vulcan Island.

279. *Rhodogastria crokeri papuana* subsp. nov.

♂♀. This belongs to the New Guinea race of the species *c. crokeri* McLeay, having been described from Queensland. It differs from *c. crokeri* in its dark slaty brown-grey ground-colour, **not** grey-brown with a cinnamon tinge, and in there being less red at base of the antennae.

2 ♂♂, 1 ♀, Vulcan Island.

280. *Utetheisa pulchelloides* Hampsn.

Utetheisa pulchelloides Hampson, *Ann. Mag. Nat. Hist.* (7) xix. p. 239 (1907) (Praslin, Seychelles).

4 ♂♂, 4 ♀♀, Dampier Island; 4 ♂♂, 4 ♀♀, Vulcan Island.

AGARISTIDAE

281. *Ophthalmis lineea lineea* (Cram.)

Phalaena lineea Cramer, *Pap. Exot.* iii. Part xix. p. 61. pl. cccxxviii. f. B (1779) (Surinam !!).

The specimens from Dampier Island show only a very little spot of rufous at the apex of forewing, and the rufous band of hindwing is very narrow; but 1 ♂ is less different from typical examples.

3 ♂♂, 3 ♀♀, Dampier Island.

282. *Ophthalmis lineea admiralitatis* subsp. nov.

♂♀. Differs from *l. bismarcki* in both sexes in having no rufous tip to the forewings, only a white fringe at apex, and in the rufous band of the hindwings being still broader, occupying in the ♀ more than half the wing.

4 ♂♂, 4 ♀♀, Manus, Admiralty Islands.

283. *Damias varia educta* (Walk.)

Burgena educta Walker, *List Lepid. Ins. Brit. Mus.* xxxi. p. 56 (1864) (Gilolo, etc.).

2 ♂♂, 1 ♀, Dampier Island.

284. *Immetalia saturata longipalpis* (Kirsch)

Eusemia longipalpis Kirsch, *Mitth. Mus. Dresd.* i. p. 130. t. 7. f. 12 (1877) (New Guinea).

The single specimen is a white ♀.

1 ♀, Dampier Island.

285. *Argyrolepidia aequalis aequalis* (Walk.)

Agarista aequalis Walker, *List Lepid. Ins. Brit. Mus.* xxxi. p. 47 (1864) (Aru).

1 ♀, Dampier Island.

(To be continued.)

ONE OF THE RAREST BIRDS.

BY ERNST HARTERT, PH.D.

(Plate I.)

NO bird can very well be rarer than if only one specimen of it is known, and that is the case with *Callaeops periophthalmica*. The history of it is as follows :

When the late John Whitehead, during his memorable exploration of the highlands of Luzon, was in Manila, he saw the bird in the place of a bird-stuffer, and finally acquired it. These are Whitehead's own words (*Ibis* 1899, p. 108):

"The unique specimen of this interesting Paradise Flycatcher was purchased by me in Manila. It had been shot by an Indian, and left with the bird-stuffer, unclaimed for years. I had expressed the desire to purchase this bird, but could not prevail upon the Indian to part with it, until one afternoon, much to my delight, the man brought it to me, and I purchased it. The soft parts were stated by my hunter (who skinned the bird) to have been pale blue, as in *Zeocephus rufus*, which is probably quite correct."

The specimen was afterwards described and made the type of a new genus by Mr. W. R. Ogilvie-Grant. It remained in Whitehead's collection, and was bought with the latter, after the owner's untimely death, by Lord Rothschild.

The original diagnosis (*Bull. B. O. Club* iv. p. xviii) reads as follows :

" *Callaeops* gen. nov.

"Genus simile generi '*Arses*' dicto, carunculam ophthalmicam exhibens, sed cristâ longâ lanceolatâ, caudâ cuneatâ et pedibus debilibus distinguendum.

"Typus est

Callaeops periophthalmica spec. nov.

"Omnino nigra: pectore mediano abdomineque albis: subcaudalibus et axillaribus albo marginatis. Long. tot. 8·5 poll., alae 3·5, caudae 4·5, tarsi 0·6.

"Hab. in insulâ Philippinensi 'Luzon' dicta."

Hardly anything can be added to this diagnosis, except what the author himself added in the *Ibis* 1895, p. 253, viz. that the "general colour is deep black with a slight purplish gloss, especially on the back and breast, and that (according to information of the native skinner) the wattle surrounding the eye, the bill and feet were pale blue." The thighs are black. The wing is, as I measure it, 91, tail 106, outermost rectrices 35 mm. shorter.

What is now the real systematic position of *Callaeops*? Mr. Ogilvie-Grant compared it only with *Arses* (a group of "*Monarcha*"), as quoted above. Whitehead (*Ibis* 1899, pp. 108, 109) made the following remarks :

"That this genus finds its nearest allies in *Arses* is, I think, open to doubt. It more resembles *Terpsiphone*, from which genus it differs in wanting a lengthened pair of centre tail-feathers, which are found only on apparently very old males. The genus *Terpsiphone* is found as a migrant as far north as Japan, and will doubtless some day be recorded from Formosa, while *Arses* is an Australian and Papuan genus. The crest is also like that of *Terpsiphone*, and not the short velvety-pile-like plumes of *Arses*."

There is much truth in what Whitehead said, but not all his comparisons are correct, as he evidently knew only some of the Eastern forms of the genus, which have a crest somewhat similar to that of *Callaeops*. All species, which have been included in *Tchitrea*, however, have not such a crest of greatly lengthened feathers, and the feathers of the forehead, though longer than in *Arses* (*Monarcha*), are almost as "velvety-pile-like" in some of the African species. Also the central rectrices are not always so enormously lengthened as in the Indian and most African species, and in the adult males of *Tchitrea tricolor* the tail is almost exactly as in the type of *Callaeops periophthalmica*, which would thus only differ from all forms of *Tchitrea* in having the ring or "wattle" of bare skin round the eyes.

It is curious that the next geographical neighbour has not been compared by Ogilvie-Grant and Whitehead, viz. *Xeocephus* (*Zeocephus* auct., but spelt with an X by Bonaparte!) *rufus*. This bird with its striking rufous-red plumage all over inhabits the Philippine Islands, and it is strange that it should not have been compared before all others inhabiting the Indo-Malayan, African, and Papuan zoogeographical subregions, for it is the real nearest relative. Not only has it a tail like that of *Callaeops*, though sometimes longer, a crest, though much less long and less full, but it has the naked ring round the eye! This latter is rather obscure in *X. cyanescens* from Palawan, but very conspicuous in adult males of *X. rufus rufus* from Luzon, but it is wider under the eye (narrower above), while in *Callaeops* it is equally wide all round. There is therefore very little structural difference between *Xeocephus* and *Callaeops*, and only the smaller bill and full long-feathered occipital crest of the latter can be an excuse for its generic separation from *Xeocephus*.

It is very strange that *Callaeops periophthalmica* has remained unique to this day. It must have been shot not very far from Manila, and the efforts of the industrious American ornithologists who have been working for years in the Philippine Islands should have brought it to light again ere this. It may be a rare bird, but we can hardly suspect that it has become extinct. There is another peculiar bird, supposed to have lived on the island of Panay, Philippines, which is apparently extinct; that is Sonnerat's "Veuve de l'isle Panay," named *Emberiza panayensis* by Gmelin in 1789, and three years before *Emberiza signata* by Scopoli. I very much doubt, however, if this bird ever lived in the Philippines, and am inclined to think it must be one of the many birds which formerly inhabited Mauritius—a suggestion already mentioned by Reichenow, who fully treated the history of "*Emberiza signata*" Scopoli, in the "*Verh. V. Intern. Ornith.-Kongress*," pp. 971-974, and figured the specimen in the Berlin Museum which is supposed to be that lost bird. There is no other Philippine bird of which we know that it is extinct.

The literature of *Callaeops periophthalmica* is as follows :

Callaeops periophthalmica Ogilvie-Grant, *Bull. B.O. Club*, iv. p. xviii (January 1895—Luzon. Original Latin description); id., *Ibis* 1895, p. 253 (English description); id., *t.c.* p. 275 (Reprint from *Bull. B.O. Club*); Whitehead, *Ibis* 1899, p. 108; Sharpe, *Hand-list B.* iii. p. 263 (1901); McGregor and Worcester, *Hand-list B. Philippine Is.*, p. 94 (1906); McGregor, *Manual Phil. B.*, ii. p. 464 (1910).

NOTES ON THE LITTLE BUSTARD.

BY ERNST HARTERT.

(Plate II.)

THERE is hardly a more interesting small family of birds than that of the Bustards, and the delicate markings of their plumage make them exceedingly beautiful. Specially interesting among the palaeartic species is the Little Bustard, *Otis tetrax*, for several reasons.

A.—STRUCTURE OF WING

The wing of the female shows nothing out of the common. The first primary is much shorter than the second and in length between the fifth and sixth; the second and third are about equal and longest. The second, third, fourth, fifth and sixth primaries have the outer webs wider at the base, the narrowing beginning suddenly in front of the primary coverts (see second and third primaries in the wing of the male on plate); but on the fifth and sixth it is not so sudden and a little more towards the tip.

The wing of the adult male is quite different. The first three primaries are like those of the female, but the fourth is quite singular; it is about $2\frac{1}{2}$ cm. shorter than the third and about 2 cm. shorter than the fourth; the outer web is, about the middle, so much narrowed out that it is in one place only 1–2 mm. wide, but it soon widens again; the inner web is narrowed on its basal half and becomes suddenly wider about its middle, while for about 18 mm. from the tip it is narrowed out again (see plate). Therefore, when the wing is spread out in flight, a small gap would most likely appear on the basal part of the fourth primary, and this would cause the piping note which, according to observers, is heard with every beat of the wings during flight. Whatever may be the object of this curiously shaped fourth primary, it is interesting to know it, and I have not found any mention of it in any book, not even in Naumann.

B.—MOULTS

In its annual moults the Little Bustard differs from the other palaeartic species, though agreeing with the Indian *Sypheotis aurita*, the so-called Florican. There is a useful material of Little Bustards in the Tring and British Museums, and Mr. W. H. St. Quintin, who has kept these and other Bustards in his aviaries for many years, has made careful observations, and in most explicit letters to me kindly confirmed and supplemented the conclusions I arrived at from the study of skins. The Houbara Bustards do not show any material seasonal changes, apparently having their extraordinary neck-frill all the year round. The Great Bustard loses its moustache, the hairy feathers of the pouch, and the chestnut feathers on the chest after the breeding season; there are then only blue-grey feathers on these parts, but in the early winter the nuptial dress begins to be gradually assumed, and the moustache, chestnut chest-band, etc., are complete

before the spring approaches. The male of the Little Bustard is strikingly different in winter and summer. In the winter it looks on the upperside almost like the female, though the markings, especially on the wing-coverts, are finer. The breast and abdomen, however, are quite white, without the black bars which are found on the chest and sides of the female, there being only a small patch on each side of the chest of sandy yellowish brown feathers with narrow wavy cross-lines. This dress is assumed during the total moult after the breeding season. In the spring, in March and April, a second but only partial moult takes place. Neither wings nor tail are affected by this, but the whole head and neck, and probably part of the back (? or the whole of it), moult, and thus the lavender-grey, black-and-white colouring of the nuptial dress are assumed. The adult female is alike at all seasons, having only one post-nuptial moult in summer and early autumn. The young birds of both sexes are like the adult female, except that the outer webs of the first primary and the primary coverts have pale rusty markings.

C.—GEOGRAPHICAL FORMS

The distribution of the Little Bustard is a very wide one, extending from Marocco and Spain to Western Siberia and East Turkestan. If a bird is thus widely spread, we frequently, more often than not, find that two or more subspecies can be distinguished; but there are many cases in which there are no differences between the most eastern and most western birds. In the Little Bustard no attempt had hitherto been made to separate various forms, but I find that Eastern and Western birds are separable.

The Western birds are lighter on the upperside, more sandy and more reddish, especially on the upper wing-coverts; Eastern specimens darker, less sandy and less reddish, the markings as a rule somewhat coarser. Western birds are also generally slightly larger, the wings of the males measuring 250–258, of the females 250–263 mm.; Eastern birds: males 236–252, females 245–247 mm.

Unfortunately series from the breeding season are not available from many places, but as far as I can make out from the available skins, the Western race nests in Marocco, Algeria, Tunisia, Portugal, Spain, and the plains of Beauce, Champagne, Brie, and La Vendée in France, north to the districts between Troyes and Châlons-sur-Marne. In the *Zoologist* 1906, p. 66, Mr. Benson mentions birds which he saw near Brugg in the Aargau, Switzerland, and which he afterwards, when he looked at the specimens in the Strassburg Museum, identified as young Little Bustards. It can hardly be supposed that the species nested there, and its occurrence must have been accidental, if the birds were correctly identified. Doubtless the Bustards which appear from time to time in the Rhine districts, rather frequently during the last thirty years, must belong to the Western race.

The Eastern subspecies nests in West Siberia, eastwards to Kainsk in the Tomsk government, to the Saissan-Nor, Afghanistan and East Turkestan, westwards through Transcaspia, the South Russian steppes to the governments of Kiew, Poltawa, Podolsk, and perhaps Saratow, Samara, and Orenburg, to Greece, Rumania, the valley of the Danube to Austria. I suppose that also the Little Bustards which breed occasionally, though apparently irregularly, in Poland, probably in East and certainly once in West Prussia, in the Mark Brandenburg und Thuringia, as well as those in Sardinia, Sicily, and certainly those that nest in Puglie and Capitanata, near Foggia, in South Italy, belong to the Eastern race.

The oldest name of the Little Bustard is Linnaeus' "*Otis Tetrax*," *Syst. Nat.* ed. x. i. p. 154, 1857. Linné gave as the habitat: "Europa, imprimis in Gallia." He took his diagnosis from Albin, Bellonius, and Aldrovandi. The restricted terra typica is therefore: France. The Western subspecies must hence be called

***Otis tetrax tetrax* L.**

The Eastern subspecies has no available name. There are, in A. E. Brehm's "Verzeichniss der nachgelassenen Sammlung (meist) europäischer Vögel von Dr. Ch. L. Brehm," two nomina nuda, viz. *Otis tetrax orientalis* and *media*, which, according to specimens, were meant for Eastern birds. Of these I take up the first, and thus the Eastern Little Bustard will be known as

***Otis tetrax orientalis* Hart.**

Type: ♂ ad., Sarepta, May 1889. In the Tring Museum.

ON THE NAME OF THE "AUKLETS."

By ERNST HARTERT, PH.D.

FOR the Little Auks or "Auklets," for a long time known under the generic name *Simorhynchus*, the A.O.U. Check-List (Third Edition, 1910, p. 28) has adopted the name *Aethia*. This happens to be correct, but the reasons why the the A.O.U. Committee adopted it and its author are utterly wrong.

The Check-List quotes:

"*Aethia* 'Merr.' Dumont, *Dict. Sci. Nat.* (revised ed.) i. 1816, Suppl. 71. Type, by monotypy, *Alca cristatella* Pallas."

In the place indicated we find the following passage:

"*Aethia* ou *Aethya* (Orn.). Ce nom est employé par quelques naturalistes pour désigner les plongeurs, autrement appelés *mergi* et *uriae*. L'oiseau que Merrem désigne dans son Essai d'ornithologie, sous le nom d'*aethia cristatella*, est vraisemblablement l'espèce de pingouin que Pallas a décrite dans son Spicilegia sous celui d'*alca cristatella* (Ch. D.)."

It is astonishing that the name *Aethia* was accepted on these premises, as there is no certainty whatever that *Aethia* Merrem is Pallas' *cristatella*, because Merrem's article was not known to the A.O.U. Committee, and Dumont (Ch. D.) could not be considered as the author, as he says "vraisemblablement" the type was *alca cristatella* Pall., and "vraisemblablement" means of course probably.

But why was no search made for Merrem's name? Evidently Dumont had seen an "Essai d'ornithologie" by Merrem, and the first thought would naturally be, that by this "essai" was meant Blasius Merrem's well-known, though somewhat scarce, "*Versuch eines Grundnisses zur Allgemeinen Geschichte und natürlichen Eintheilung der Vögel*," Leipzig, 1788. This work, unfinished as it was, because too grandly planned, appeared in Latin and German. In the German edition appear only German vernacular names, in the Latin one, Latin ones only. In the second

chapter, called in the Latin edition "Tentamen Naturalis Systematis Avium," we find on page 7 :

Rostrum ascendens ; apicibus utriusque mandibulae, minime sursum flexae, sed ascendentis, altioribus oris angulis—*Aethia Tetracula*.

P. 13: *Crista revoluta* ; pennis cristae in basi erectis, inde rostrum versus valde incurvis—*Aethia Cristatella*.

P. 20: *Alae brevissimae* ; initium caudae attingentes, nec ultra tendentes—*Aethia Cristatella*.

I consider that these three items together form a better diagnosis than that of many other recognised genera. Moreover, there can be no doubt that the specific names used are Pallas' (an author specially mentioned as a model on p. 3 of the "prooemium"), and as both refer to the same species, the monotype of *Aethia* Merr. would be *A. cristatella* Pall.

The correct quotation would be :

Aethia Merrem, *Vers. Grundr. Allg. Gesch. u. nat. Eintheil d. Vög.* i.—Tentamen *Nat. Syst. Av.* pp. 7, 13, 20 (1788—mentioned *Tetracula* and *cristatella*, which names refer to the same species in different stages, therefore—monotype: *A. cristatella* Pall.).

I see no reason why Merrem's name should not be adopted, but if it should not be acceptable, we should have to revert to *Simorhynchus*, as *Aethia*, as of Dumont 1816, is quite impossible.

Authors fond of priority hunting, for which I have no time, might find another acceptable name in Merrem's work, but I do not think they will, as the other generic names used by the author seem to be all well known or, in one or two cases, not clearly enough diagnosed to be adopted. Had the work been finished, we should doubtless have known the meaning of all Merrem's names, also the specific ones, of which several are not clear, at least not to me.

THE DISTRIBUTION OF *COLUMBA GYMNOPHTHALMA*.

BY ERNST HARTERT, PH.D.

Antea, p. 87, I discussed the name and distribution of *Columba gymnophthalma*. While I still adhere to the fact, that Jacquin's name "*Col. corensis*" is not acceptable for this species, I must admit that any argument based on the non-occurrence of the species on the mainland of South America cannot hold, for the simple reason that it does occur not only in Venezuela, but also in Colombia. When I wrote my note, I was not aware that in the recent rich collections received in the United States from South America, this Pigeon is represented from various localities. Now Mr. W. E. Clyde Todd writes to me: "In our collection (*i.e.* the Carnegie Museum) there are two specimens from Tocuyo in Venezuela, and three from the Santa Marta district in Colombia. Besides these, I have examined a specimen from the latter locality and another from Baranquilla, in the collection of the American Museum of Natural History. These mainland specimens are in no wise different from a series from Curaçao with which I have been able to compare them." These occurrences were not known, as far as I am aware, when I wrote my article, which appeared in April. In a more recent letter, however, Mr. Todd tells me that they are recorded on p. 322 of the last volume (Part VII) of Ridgway's *Birds of North and Middle America*, which appeared in May. This valuable volume, which was issued May 5th, has just arrived at the Tring Museum (August 14th). I find that Mr. Ridgway agrees with me in rejecting the name *corensis* as doubtful, and that he accepts *gymnophthalma*; he calls the species *Crossophthalmus gymnophthalmos*, but hitherto he stands almost alone in the splitting up of the genus *Columba*. He gives the distribution as follows:

"Arid Caribbean coast of Venezuela (Porlamár, Tocuyo) and Colombia (Baranquilla, Taganga, Gaira and Donjaro, Santa Marta) and adjacent islands of Curaçao, Aruba, Bonaire, Margarita, and Blanquilla; St. Thomas, Greater Antilles (introduced?)."

Of all the mainland localities only one was formerly recorded, *i.e.* "Taganga, Santa Marta," which Allen made known in 1900; it was overlooked by Mr. Chubb and myself.

ON THE ORIENTAL ANTHRIBID GENUS *APOLECTA*.

BY KARL JORDAN, PH.D.

PASCOE based *Apolecta* on *parvulus* Thoms. (1857), placed with a question-mark under *Mecocerus*. All the species made known since, with the exception of *minor* Jord. (1895), agree so well with the genotype that there is no necessity for separating them in several genera. The species, however, described by me as *Apolecta minor* stands so much apart that I now propose a new genus for its reception. I feel the more justified in doing this as we have a second species belonging to this new genus.

Apolecta Pasc. (1859) is closely allied to the African genus *Anacerastes* Imh. (1842, genotype *lepidus* Imh.), but differs in many details, the two genera being most easily separated by the tenth segment of the antennae, which is quite short in *Anacerastes*, and at least one-third the length of the eleventh segment in *Apolecta*.

The species of *Apolecta* fall into several groups. Most of the species have a punctate pronotum, while in the others it is impunctate; in two species the intercoxal process of the mesosternum is raised into a rounded tubercle (*A. papuana* and *puncticollis*). The pygidium has in the ♀ of some species two apical pencils of hair which are curved upwards. In the ♂♂ of most species the first abdominal segment bears a central double tubercle; in *A. tonkiniana*, *furcata*, and others, segments 2, 3, and 4 also have such tubercles, while in *A. puncticollis* they are absent, and in *A. papuana* replaced by a round velvety spot recalling the sex-mark found in *Anacerastes*.

The mesosternum bears a transverse groove on the neck-like portion which is covered by the prothorax, this groove being absent or just indicated in *Anacerastes*.

1. *Apolecta andrewesi* spec. nov.

♂ ♀. Similis *A. nietneri* Lac. (1866), antennarum articulo 3^{io} albo-pubescente, elytrorumque maculis subbasali et antepicali obsolescentibus distinguenda.

Hab. South India: Nilgiri Hills (H. Leslie Andrewes), a series, also one ♂ in the Tring Museum from Coorg—type in coll. H. E. Andrewes.

Mr. H. L. Andrewes found the species in the Ochterlony Valley, at 3000 to 3500 ft., in June, July, and August, about decaying trees.

The third segment of the antenna, with the exception of the apex, is covered with a white pubescence, which is not the case in *A. nietneri*, while, on the other hand, the fourth tarsal segment is almost entirely devoid of white pubescence. Apart from the pronotum being less densely punctured than in *A. nietneri*, there does not appear to be any structural difference from that Ceylonese species, which *andrewesi* evidently replaces in South India.

The colour of the upper surface is grey with a luteous tone. The blackish markings of the head consist of a narrow median stripe and a broad postocular area. The surface of the pronotum is divided up by four or five blackish lines which are irregular, broken, and so arranged as to form a kind of wide-meshed net. The

round black spot situated in *A. nietneri* on the basal callosity of each elytrum is absent in *A. andrewesi* or barely vestigial, and the subapical spot is replaced by a diffuse brown transverse band. The grey pubescence of the elytra occupies more space than the brown, the elytra of well-preserved specimens being grey irrorated with brown, with the natural interstice almost tessellated.

2. *Apolecta papuana virgata* subsp. nov.

♂ ♀. Occipite pronotoque vitta mediana nigra sat lata notatis.

Hab. Batjan; type in Mus. Brit.

The middle stripe of the head is dilated between the eyes. The sides of the pronotum are much less extended black than in *A. p. papuana* Jord. (1895), whereas the central area bears a broadish black stripe, which does not quite reach the carina, and is much narrower some distance before the centre. At each side of the central elevation there is in the depression an indefinite, elongate, black spot, which is connected with the central stripe. Laterally to the depressions the pronotum bears an elongate grey spot before the carina, and another near the apical margin. Metasternum and abdomen laterally variegated with blackish markings, the sides being almost uniformly clay-colour in *A. p. papuana*.

3. *Apolecta latipennis* spec. nov.

♀. *A. aspericollis* Kirsch (1875) vicina. Supra maculis luteis sat magnis plus minusve confluis tessellata, antennis corpore triplo longioribus, pronoto punctulato in medio haud calloso, elytris latis, valde depressis, ante apicem declivem transversim sat fortiter elevatis, metasterno toto punctis granulisque aspero distincta.

Long. (cap. excl.) 14 mm., lat. 5.8 mm.

Hab. Perak (W. Doherty), 1 ♀ ex coll. van de Poll.

Black; the clay-coloured pubescence of the upper surface broken up into spots by a black network, the clay spots on the whole larger than the black spaces between them. The pronotum not depressed and without the median callosity present in nearly all the other species, but the median line faintly elevate in the centre and feebly impressed posteriorly; the carinae similar to those of *A. javanica* Jord. (1894). Elytra broader even than in *A. javanica*, broadly depressed, and in front of the apical declivity much more elevate transverse than in any other species of the genus. Pygidium clay-colour, with the lateral margins and the median line black; apex very feebly impressed. Antenna about three times as long as the body.

Underside clay-colour at the sides, more grey centrally; metasternum densely granulate centrally, punctate-granulate laterally; last sternite long, rounded at the apex. Tibiae rufous, with black apices. Tarsi black, the greater part of the upperside of the first segment pubescent greyish white.

4. *Apolecta suda* spec. nov.

♀. Nigra; capite griseo bivittato; pronoto luteo-griseo pubescente, vittis tribus nigris, lateralibus interruptis, ornato, impunctato; elytris luteo-ochraceo subreticulatim maculatis; subtus sparsim grisescens, lateribus luteo-ochraceo maculata.

Long. (cap. excl.) 10 mm., lat. 4 mm.

Hab. Davao, Mindanao (Dr. Platen), 1 ♀ ex coll. van de Poll.

Allied to *A. maculata* Jord. (1895), but the lateral dorsal black stripe of the pronotum interrupted in the centre, the elytra less depressed at the suture, and their black markings more numerous and more confluent, there being no conspicuous oblique black half-moon before the declivous apex as in *maculata*. The meso-metasterna and the abdomen are laterally spotted with pale ochraceous.

5. *Apolecta vicina* spec. nov.

♂♀. Colore et statura *A. transverso* Oliv. (1795) persimilis; prothorace quinque vittis nigris ornato, tribus dorsalibus in medio interruptis vel constrictis, vitta mediana linea grisea diffusa longitudinaliter divisa, carina dorsali in medio basi approximata, pronoto longitudinaliter bi-impresso, in medio elevato, parte elevata impunctata; elytris sat subtiliter punctato-striatis, nigrolineolatis et irroratis, macula parva humerali rotundata, altera majore subrotunda postmediana inter strias 1^{am} et 5^{am} sita nigro-velutinis; meso- et metasternis sine punctis distinctis; tibiis intermediis (♂) non mucronatis; tuberculis geminatis segmenti abdominalis primi (♂) post medium sitis.

Hab. Sumatra: Si-Rambé, xii. 1890—iii. 1891 (E. Modigliani), 1 ♂ and 2 ♂♂. The pronotum is very distinctly impressed longitudinally, and the centre raised above the level of the impressions, there being no punctures on this elevated portion. The dorsal carina is so much curved backwards centrally that the sub-basal carinula is joined to it, whereas in *A. transversus* Oliv. (1795) = *gracillima* Pasc. (1859) the carina is farther from the basal edge and the carinula remains separate. Moreover, the pronotum of *A. transversus* is conspicuously punctate-granulate nearly all over and somewhat rugulose in places. The basal callosities of the elytra are very distinct in *vicina*, and the suture is depressed from the base to the apical declivity; on the limbal area the brown pubescence prevails; the postmedian velvety spot does not reach the suture, but the sutural interstice is more or less brown in this region.

6. *Apolecta gemina* spec. nov.

♂♀. Ab *A. vicina* prothorace trivittato, pronoto haud longitudinaliter impresso atque omnino sat sparsim minute granulato-punctato, elytris fortius striato-punctatis, pone basin multo minus elevatis, macula postmediana communi nigra ad suturam non interrupta distinguenda.

Hab. Perak, a pair, the ♂ collected by W. Doherty.

The prothoracic stripes are not interrupted. The pronotum is only depressed in front of the carina, the longitudinal depressions so conspicuous in *A. vicina* being absent. The small dispersed granules are distinct in the ♀, whereas in the ♂, whose pronotum is somewhat soiled, they are barely visible. The carina approaches the base as much as in *A. vicina*. The basal callosities of the elytra are not nearly so elevate as in *A. vicina*, the suture is less depressed, and the stripes of punctures are coarser. There is a rather large black elongate spot on the basal callosity, and between it and the postmedian patch several smaller spots, of which an elongate irregular spot near the suture is the largest. A round impressed spot at one-third of the lateral margin likewise black, as are also a shoulder spot and some spots in

the apical fourth. The postmedian patch is large, rounded in front, almost straight behind, sinuate in front on the suture, and produced some distance backwards behind. The midtibia of the ♂ has no apical tooth.

7. *Apolecta crux* spec. nov.

♀. Similis *A. geminae*, pronoto longitudinaliter levissime bi-impresso, vittis lateralibus interruptis, elytris subtilius punctato-striatis, ad suturam magis depressis, maculis dorsalibus minoribus, postmediana communi cruciformi.

Hab. Hili Madjedja, North Nias, October—December 1895 (I. Z. Kannegieter), 1 ♀, ex coll. van de Poll.

Perhaps a subspecies of *A. gemina*, and to some extent intermediate between that species and *A. vicina*. The prothorax agrees with that of *A. gemina* in having three vittae, but the lateral ones are interrupted; the depressions of the pronotum are less distinct than in *A. vicina*, and the puncturation is very inconspicuous. The postmedian sutural patch of the elytra is smaller than in the two previous species, and produced forward as well as backward on the suture, somewhat resembling a flying bird; there is a rounded spot at one-third of the lateral margin; the dorsal spots are all small.

Key to the species of *Apolecta*:

- A. Intercoxal process of mesosternum not convex in the centre.
 - a. Pronotum punctated, at least laterally.
 - a¹. Meso-metasterna distinctly punctated.
 - a². Elytra not broadly depressed from before middle, not elevate before apical declivity.
 - a³. Elytrum in middle at most with sharply defined rounded black spot.
 - a⁴. Central carina of frons strongly developed.
 - a⁵. Third segment of antenna white *A. andrewesi*.
 - b⁵. " " " not "
 - a⁶. Pronotum without straight black vittae; elytrum with round black median spot. *A. nietneri*.
 - b⁶. Pronotum with three black vittae *A. enganensis*.
 - b⁴. Central carina of frons feebly developed *A. paraplesia*.
 - b³. Elytra with black transverse postmedian band.
 - c⁴. Scutellum black *A. tonkiniana*.
 - d⁴. " gray *A. lewisi*.
 - b². Elytra broadly depressed from before middle and elevate in front of apical declivity.
 - c³. Elytra with dispersed white spots *A. javanica*.
 - d³. Elytra densely tessellated and marmorated with luteous, with diffuse black transverse band before apical declivity
 - *A. aspericollis*.
 - e³. Elytra densely spotted with ochraceous, without black transverse band *A. latipennis*.
 - f³. Elytra each with three black spots *A. guttifera*.

- b¹. Meso-metasterna without distinct punctures on the sides.
- e². Dorsal carina of pronotum entire.
- g³. Dorsal carinula joining the dorsal carina; midtibia not mucronate.
- e⁴. Black postmedian patch of elytra interrupted or constricted at the suture *A. vicina*.
- f⁴. This patch continuous across suture, produced backward in the sutural interstices *A. gemina*.
- g⁴. This patch produced forwards as well as backwards on the suture *A. crux*.
- h³. Dorsal carinula remaining separate from the dorsal carina, which does not approach the base so much as in the previous species; midtibia mucronate.
- h⁴. Spots of elytra small, with the exception of the postmedian patches, at most the subbasal spots fairly large
A. transversus.
- i⁴. Elytra with several fairly large spots before and behind the postmedian patches *A. parvulus*.
- d². Dorsal carina of pronotum interrupted in centre *A. diversa*.
- b. Pronotum impunctate.
- e². Metasternum impunctate.
- i³. Abdomen more extended black than luteous grey. *A. fucata*.
- j³. „ about as extended black as ochraceous at sides
A. suda.
- k³. „ more extended luteous grey or luteous than black.
- j⁴. Lateral black stripe of pronotum broad.
- c⁵. Elytrum with large oblique black half-moon at beginning of apical declivity *A. maculata*.
- d⁵. Elytra almost evenly marmorated and spotted with grey
A. samarana.
- k⁴. Lateral black stripe of pronotum reduced to one or two spots
A. fasciata.
- f². Metasternum punctate *A. depressipennis*.
- B. Intercostal process of mesosternum convex or tuberculiform.
- c. Pronotum slightly bi-impressed *A. puncticollis*.
- d. „ strongly „ *A. papuana*.

1. *Apolecta nietneri* Lac. (1866)

A. n. Lacordaire, *Gen. Coléopt.*, Atlas, p. 28. pl. 80. fig. 3. 3a, ♀ (1866) (Ceylon); Gemm. & Harold, *Cat. Col.* ix. p. 2739 (1872) (Ceylon); Jord., *Nov. Zool.* v. p. 237. sub no. 19 (1898); Bovie, *Ann. Soc. Ent. Belg.* 14. p. 317 (1905) (Ceylon).

Ceylon.

2. *Apolecta andrewesi* spec. nov.

Cf. p. 342.

South India.

3. *Apolecta enganensis* Jord. (1897)

A. e. Jordan, *An. Mus. Civ. Genoa* xxxviii. p. 640. no. 47 (1897) (Engano); Bovie, *l.c.*, p. 317 (1905) (Engano).

Engano.

4. *Apolecta tonkiniana* Jord. (1904)

A. t. Jordan, *Nov. Zool.* xi. p. 236. no. 18 (1904) (Tonkin); Bovie, *l.c.*, p. 318 (1905) (Tonkin).
Tonkin.

5. *Apolecta paraplesia* Jord. (1912)

A. p. Jordan, *l.c.*, xix. p. 145. no. 29 (1912) (Formosa).
Formosa.

6. *Apolecta lewisi* Sharp (1891)

A. l. Sharpe, *Trans. Ent. Soc. Lond.* p. 318 (1891) (Japan); Bovie, *l.c.*, p. 317 (1905) (Japan);
Jord., *Nov. Zool.* xix. p. 145. sub no. 29 (1912).
Japan.

7. *Apolecta javanica* Jord. (1894)

A. j. Jordan, *Nov. Zool.* i. p. 649. no. 96 (1894) (E. Java); Bovie, *l.c.*, p. 317 (1905) (Java).
A. javana Jordan, *Ent. Zeit. Stettin* lvi. p. 181. sub no. 68 (1895) (laps. cal.).
Java: South, West, and East.

8. *Apolecta aspericollis* Kirsch (1875)

A. a. Kirsch, *Mitth. Mus. Dresden* i. p. 55 (1875) (Malacca); Jord., *Ent. Zeit. Stettin* lvi. p. 179.
sub no. 66 (1895); id., *Nov. Zool.* v. p. 236. sub no. 18 (1898); Bovie, *l.c.*, p. 317 (1905)
(Malacca).
Malay Pen.; Singapore; Sumatra.

9. *Apolecta latipennis* spec. nov.

Cf. p. 343.
Perak.

10. *Apolecta vicina* spec. nov.

Apolecta gracillima, Jordan (nec Pascoe, err. determ.), *Ann. Mus. Civ. Genoa* xxxviii. p. 641. no. 49
(1897) (Sumatra).
Cf. p. 344.
Sumatra.

11. *Apolecta gemina* spec. nov.

Cf. p. 344.
Perak.

12. *Apolecta crux* spec. nov.

Cf. p. 345.
Nias.

13. *Apolecta transversus* Oliv. (1795)

Macrocephalus transversus Olivier, *Ent.* iv. 80. p. 10. tab. 1. figs. 12. a. b. (1795) (Ind. or.); Schönh.,
Gen. Spec. Curc. i. p. 184. no. 15 (1833) (incerti generis).
Nessiara transversa, Lacordaire, *Gen. Col.* vii. p. 338, footnote 1 (1866); Gemm. & Harold, *Cat. Col.*
ix. p. 2735 (1872) (Ind. or.); Jordan, *Nov. Zool.* i. p. 630 (1894); Bovie, *Ann. Soc. Ent. Belg.*
14. p. 257 (1905) (Ind. or.).
Apolecta gracillima Pascoe, *Ann. Mag. N. H.* (3). iv. p. 431 (1859) (Singapore); Jord., *Ent. Zeit.*
Stettin lvi. p. 180. sub no. 67 (1895); Bovie, *l.c.*, p. 317 (1905) (Singapore; Sumatra).
Apolecta transversa, Jordan, *Ent. Tijdschr.* lix. p. 162. no. 13 (1916) (Java; *gracillima* = *transversa*).
Perak; Sumatra; Borneo; Java.

14. *Apolecta parvulus* Thoms. (1857)

Mecocerus parvulus Thomson, *Arch. Ent.* i. p. 437 (1857) (Aru); Lacord., *Gen. Col.* vii. p. 555, footnote 3 (1866).

Apolecta parvula Pascoe, *Ann. Mag. N. H.* (3). v. p. 48. tab. 2 (1860); Gemm. & Harold, *Cat. Col.* ix. p. 2739 (1872) (Aru); Bovie, *l.c.*, p. 317 (1905) (Aru).

Aru; British New Guinea.

15. *Apolecta diversa* Jord. (1904)

A. d. Jordan, *Nov. Zool.* xi. p. 237. no. 19 (1904) (N. Borneo); Bovie, *l.c.*, p. 317 (1905) (Borneo).

North Borneo.

16. *Apolecta fucata* Pasc. (1860)

A. f. Pascoe, *Journ. Ent.* i. p. 329 (1860) (Ceram); Lacord., *Gen. Curc.* vii. p. 555, footnote 3 (1866) (Ceram); Gemm. & Harold, *Cat. Col.* ix. p. 2739 (1872) (Ceram); Bovie, *l.c.*, p. 317 (1905) (Ceram).

Ceram.

17. *Apolecta suda* spec. nov.

Cf. p. 343.

Mindanao.

18. *Apolecta maculata* Jord. (1895)

A. m. Jordan, *Ent. Zeit. Stettin* lvi. p. 264. no. 26 (1895) (Luzon); Bovie, *l.c.*, p. 317 (1905) (Philippines).

Luzon; Samar.

19. *Apolecta samarana* Jord. (1898)

A. s. Jordan, *Nov. Zool.* v. p. 373. no. 35 (1898) (Samar); Bovie, *l.c.*, p. 318 (1905) (Samar).

Samar.

20. *Apolecta fasciata* Jord. (1895)

A. f. Jordan, *Ent. Zeit. Stettin* lvi. p. 180. no. 68 (1895) (Luzon); Bovie, *l.c.*, p. 317 (1905) (Luzon).

Luzon.

21. *Apolecta depressipennis* Jord. (1895)

A. d. Jordan, *Ent. Zeit. Stettin* lvi. p. 179. no. 66 (1895) (Borneo); id., *l.c.*, p. 264. sub no. 26 (1895); Bovie, *l.c.*, p. 317 (1905) (Borneo).

Borneo: Brunei, Sarawak, Pontianak.

22. *Apolecta guttifera* Jord. (1897)

A. g. Jordan, *Ann. Mus. Civ. Genova* xxxviii. p. 641. no. 48 (1897) (Sumatra); Bovie, *l.c.*, p. 317 (1905) (Sumatra).

Sumatra.

23. *Apolecta papuana* Jord. (1898)

A. p. Jordan, *Nov. Zool.* v. p. 373. no. 36 (1898) (Brit. N. Guinea); Bovie, *l.c.*, p. 317 (1905) (New Guinea).

New Guinea; Northern Moluccas.

a. *A. papuana papuana* Jord. (1898)

A. p. Jordan, *l.c.*

New Guinea.

b. *A. papuana virgata* subsp. nov.

Cf. p. 343.

Batjan.

24. *Apolecta puncticollis* Jord. (1895)

A. p. Jordan, *Ent. Zeit. Stettin* lvi. p. 179. no. 67 (1895) (Borneo); Bovie, *l.c.*, p. 318 (1905) (Borneo).

Borneo; Perak.

APOLECTELLA gen. nov.

A genere *Apolecta* denominato oculis transversis grossius granulatis et magis elevatis, processu mesosternali brevi truncato distinguenda.

Genotypus: *A. minor* Jord. (1895, *Apolecta*).

This genus of small species stands in a similar relation to *Apolecta* as in the Aethiopian Region *Epicerastes* to *Anacerastes*.

1. *Apolectella minor* Jord. (1895)

Apolecta minor Jordan, *Ent. Zeit. Stettin* lvi. p. 181. no. 69 (1895) (Perak); Bovie, *l.c.*, p. 317 (1905) (Perak).

Perak; Singapore; Sarawak.

2. *Apolectella frontalis* spec. nov.

♀. Rufescens, pube grisea et brunnea variegata; fronte postice valde elevata antice planata.

Long. (cap. excl.): 4.4 mm.

Hab. South Palawan, one ♀.

The specimen is probably not quite mature, which would explain the pale rufescent colouring of the derm. In general aspect very close to *A. minor*, but the grey markings less prominent, the pronotum more evenly convex, the two elongate tubercles found in the third interspace of each elytrum of *A. minor* absent, and the tibiae without brown median spot. The eye is somewhat broader than in *A. minor*, and the frons posteriorly much more elevate, the frons and occiput, in a lateral view, almost forming a right angle.

ON THE SPECIES OF *SOMABRACHYS* IN THE TRING MUSEUM.

BY KARL JORDAN, Ph.D.

(With Plates VII. and VIII.)

WE have over 900 males of *Somabrachys* in the Tring Museum, besides some females and larvae. Most of the specimens are from various parts of Algeria, a few from Marocco, Tunisia, and Palestine. As the present state of Europe makes travelling outside England impossible for me, I have not been able to consult any Continental collections; and, to my great regret, Monsieur Charles Oberthür has been so seriously ill that he was prevented from sending me samples of his species. May the fates be kind to Entomology and accord him a complete recovery.

The specimens of *Somabrachys* have been separated into about twenty species and varieties. The coloration being very uniform, the determination of the species is a matter of difficulty according to Oberthür. I agree with him even if there are only half as many distinct species as have been described; and I do not expect that insectivorous enemies of *Somabrachys*, if any, are able to discriminate with such nicety that their destructive activities have played a rôle in building up the specific distinctions.

What are these distinctions? Some deviations in colouring, wing-shape, and size are in the main the only characteristics relied upon by the authors of the species, or, to be more correct, the authors of the names.

The first substantial advance in our knowledge of the species is due to H. Powell, who studied the caterpillars on the spot and bred many imagines. The results of his studies, which are laid down in Oberthür's *Études Lép. Comp.* v. i. pp. 227-282 (1911), bear testimony to his fine powers of observation.

Powell distinguishes **three** chief types of larvae:

Group A.—Larva with slits on *seven* abdominal segments.

Group B.—Larva with slits on *eight* abdominal segments; dorsal warts of abdomen slightly oblique, bearing four, rarely five, long hairs, except on segments viii, ix, and x (last three segments).

Group C.—Larva with slits on *eight* abdominal segments; dorsal warts of abdomen oblique and strongly transverse, bearing nine to twelve long hairs, except on segments viii, ix, and x.

The imagines I have before me also fall into three groups, which are so clearly defined that an error as to the position of a specimen, be it a ♂ or ♀, is hardly possible. The chief differences between these groups are found in the head, foreleg, abdomen, and wings. The ♂-genitalia also differ to some extent (cf. Plates VII and VIII). Having ♀♀ of one group only, we do not know if there is any specific distinction in the armature of the seventh and eighth abdominal sternites of that sex, but believe that little of diagnostic value is to be derived from those segments in the present case.

Group A.—Frons with subprismatical truncate process. Abdomen very densely spinulose on upperside. Forefemur slender, without apical tooth, subconvex on underside. R^1 of forewing (vein 6) from above angle of discocellulars. Tenth tergite (δ) clavate, with the apex truncate-sinuate.

Group B.—Frons with an irregular wart or scars only visible if the hair is removed. Spinules on upperside of abdomen less dense than in Group A. Forefemur stout, flattened beneath, without apical tooth. R^1 of forewing from below angle of discocellulars. Apex of tenth tergite (δ) pointed.

Group C.—Frons with raised lines or scars visible only if the hair is removed. Spinules of abdomen as in Group B. Forefemur stout, flattened beneath, with a tooth on innerside at apex. R^1 of forewing from angle of discocellulars. Apex of tenth tergite (δ) pointed.

After having studied Powell's work on the larvae and Oberthür's figures of imagines, I am convinced that my Groups A, B, and C of imagines coincide with Powell's Groups A, B, and C of larvae. This being so, there is no reasonable doubt that all the species described by Oberthür and others belong to one or the other of the three groups of imagines.

The task of placing the species and varieties hitherto published into their respective groups is most difficult for me. The descriptions are of little or no help,—and the figures? In many instances the artist, or the camera, has reproduced the characteristic distinctions in neurulation, of which the authors themselves were unaware; but as that is not universally the case, much is left to guessing. The types of nearly all the doubtful forms are in French collections. It should, therefore, not be difficult for a French entomologist with some knowledge of morphology to place the specimens correctly.

The first-described species, *aeagrota* and *infuscata* Klug (1832), are not doubtful to me. The position of R^1 in the forewing (vein 6) is indicated in the original figures. Enlarged drawings of the forewings,* which I owe to the kindness of the Director of the Berlin Museum, show that vein in the same positions (Plate VIII., figs. 16 and 17). According to the figures *aeagrota* belongs to Group A, and *infuscata* to Group B.

S. codeti Aust. (1880) is represented in the Tring Museum by the name-type and numerous other specimens. It belongs to Group A.

S. arcanaria Millière (1884) was described as a Geometrid, the description being accompanied by a very unsatisfactory figure. The original specimens (one δ in coll. Staudinger at Dresden, two $\delta\delta$ in coll. Millière in the Royal Museum at Sofia) are not accessible to me at present. If I may venture a guess, I refer the species to Group A. The specimens figured as *arcanaria* by Oberthür, *Lép. Comp.* v. pl. C (1911), apparently belong to the same group.

In 1908 Oberthür described two new species in *Bull. Soc. Ent. France*, p. 48:

S. powelli and *S. chretieni*. The former, which is figured in *Lép. Comp.* iii. pl. 21 (1909), gives me the impression of belonging to Group A. The figure of the second species, *chretieni*, appears in *Lép. Comp.* iv. pl. 36. Although vein R^1 of

* Although these drawings are meant to be "rough sketches" only, they are so instructive that I consider them superior to any of the published drawings, and I therefore do not hesitate in using them for illustrating the present paper.

the forewing is not drawn, I am convinced that the figure was taken from a specimen of Group C, *chretieni* Oberth. (1908) therefore being the first name applying to that group.

S. khenchelae Oberth. (1909) being based on a ♀, nothing can be said as yet about its position. The ♂ which Oberthür figures as *khenchelae* in 1910 is likewise doubtful, vein R¹ not being drawn. I am inclined to refer also this name to Group C. The photograph published by Oberthür, in *Lép. Comp.* v. 1. pl. A, appears to confirm my opinion.

S. mogadorensis Oberth. (1909) seems to me to belong to Group A, *S. albinnervis* Oberth. (1909) to Group C, and *S. unicolor* Oberth. (1909) to Group A. All three are figured in *Lép. Comp.* iii. pl. 21, but not described.

The description of *S. ragmata* Chrétien (1910) does not throw any light on the position of the species. Oberthür, however, in *Lép. Comp.* v. 1. pl. A, figures among *infuscata* a specimen he received from Chrétien as *ragmata*. The photograph of this example shows R¹ of the forewing to arise from above the angle of the discocellulars, which is especially evident on the left wing of the figure in our copy of the work. I place *ragmata*, therefore, in Group A.

In *Lép. Comp.* v. 1, p. 251, 296 to 300 (1911), a number of other names appear, evidently for the first time, the descriptions being accompanied by three photographic plates :

S. klugi Oberth. (1911), *manastabal* Oberth. (1911), *adherbal* Oberth. (1911), *hiempsal* Oberth. (1911), *maroccana* Oberth. (1911), and *holli* Oberth. (1911) are referable to Group A.

S. fumosa Oberth. (1911) probably belongs to Group C, and *S. kroumira* Oberth. (1911) to Group B. The specimens figured by Oberthür as *S. codeti* Austaut and as *S. codeti-atrinervis* Oberth. (described as *S. codeti* var. *atrinervis*) are referable to Group B, the neuriation standing out so well in most of the figures that the position of vein R¹ of the forewing below the angle of the discocellulars is very plain.

No further species of *Somabrachys* seem to have been described since 1911 ; at any rate, I have not found any descriptions in the literature which is available.

Presented in tabular form the names are distributed as follows, arranged in chronological order under each group :

GROUP A.	GROUP B.	GROUP C.
<i>aegrota</i> Klug (1832)	<i>infuscata</i> Klug (1832)	<i>chretieni</i> Oberth. (1908)
<i>codeti</i> Austant (1880)	? <i>kroumira</i> Oberth. (1911)	? <i>khenchelae</i> Oberth. (1909)
? <i>arcanaria</i> Millière (1884)	<i>codeti</i> var. <i>atrinervis</i> Oberth. (1911)	<i>albinervis</i> Oberth. (1909)
<i>powelli</i> Oberth. (1908)		? <i>fumosa</i> Oberth. (1911)
<i>mogadorensis</i> Oberth. (1909)		
<i>unicolor</i> Oberth. (1909)		
<i>ragmata</i> Chrétien (1910)		
<i>klugi</i> Oberth. (1911)		
<i>manastabal</i> Oberth. (1911)		
<i>adherbal</i> Oberth. (1911)		
<i>hiempsal</i> Oberth. (1911)		
<i>holli</i> Oberth. (1911)		
<i>maroccana</i> Oberth. (1911)		

Powell separates the larvae he has observed into five species, two belonging to Group A, two to Group B, and one to Group C.

Oberthür, on the other hand, relying on the facies of the imagines, believes that there are a large number of distinct species. He confesses, however, that he has many specimens which he cannot place with certainty.

When I took up the study of *Somabrachys* I fully expected to find that Oberthür was right. The differences in the shade of colour, in size, and in the outline of the forewing, and obvious distinctions in the neuration both on the fore- and hindwing, coupled with differences I noticed at once in the structure of the frons and the foreleg and in the spinosity of the abdomen, pointed to the existence of a large number of species. The more specimens I compared, however, the less evidence I found for the correctness of that view. This is what I observed :

GROUP A

We have 540 odd males and 19 females of this group from the following places : Palestine ; Ain-Draham, in Tunis ; Hussein Dey, Médéa, Les Glacières de Blida, Batna, Guelt-es-Stel, and Oran, all in Algeria ; and Mazagan on the Atlantic coast of Marocco.

This number is sufficiently large for the purpose of investigating the question whether Group A contains more than one species. Provided there are several species in this group, it would be a most singular coincidence if all our specimens, collected indiscriminately and coming from widely separate countries, represented but one of these species. I have studied the examples from different localities separately and conjointly, and have found nothing whatever to indicate that we have more than one species. This is no proof that Oberthür also has only one species of Group A ; but until sufficient evidence to the contrary is brought forward, I recommend to treat the string of names under Group A as synonyms of *S. aegrota* Klug (1832). The differences which Powell describes of his species No. 2 and No. 3 are not convincing. Of No. 2 he bred only two ♀♀, which he could not distinguish from ♀♀ of No. 3. The ♂♂ he obtained at the lamp in the same locality, and which he assumes to belong to No. 2 (and which are named by Oberthür *adherbal*) are said to be smaller and paler than No. 3 (= *manastabal* Oberth.) The dorsal abdominal warts of the larva of No. 2 are described as bearing 7 to 9 long whitish hairs, and there are two pale yellow dorsal stripes ; in No. 3 the warts have only 5 or 6 long whitish hairs, the general colour is greenish grey dorsally and laterally, and the yellowish dorsal lines are absent. We have two blown caterpillars of Group A, i.e. with seven glandular slits on the abdomen. The colour is reddish from the stigmata upwards ; there is a thin pale dorsal central line, but no pale lines connect the dorsal warts. These warts bear on the abdominal segments i to vii from 4 to 8 white hairs, the usual number being 5 or 6, 4 and 8 occurring once, 7 twice on the seven segments in question (28 warts) of the two specimens. The instability here observed in the number of white hairs shakes the value of the distinction described by Powell.

Our series of ♂♂ varies in the length of the forewing from 9 to 13·5 mm. The specimens from Guelt-es-Stel (nearly 500) measure from 9 to 12·5 mm., those from Mazagan in Marocco (only six) from 11·5 to 13·5 mm. The larger examples from the West Coast of Marocco agree in size with Oberthür's *mogadorensis* from Mogador ; *maroccana* Oberthür, also from Mogador, has the forewing only 10 mm. long. Our examples from Palestine (thirteen) measure 10 to 11 mm., those from Ain-Draham in Tunis (seven) from 10·5 to 12 mm., and the remaining

specimens from various Algerian localities from 10 to 12 mm. In the type-specimen of *codeti* the forewing is 10 mm. long.

Somabrachys appears to me to be a genus at which the causes of the variation in size could be tested without much difficulty. As a rule, succulence and abundance of food, and a moist atmosphere have a favourable influence on the growth of insects. Not only are the species of *Somabrachys* polyphagous, but the individual larva will accept different plants—for instance change from *Lychnis* to a thistle. The caterpillars are not at all rare in the environs of Alger, and as the female lays a large number of eggs in clusters, sufficient material for feeding experiments should easily be procurable.

The colouring is much affected by flight and exposure. Most of our specimens caught at the lamp are so worn that the wings have become semi-transparent and the thorax has assumed a very pale brown tint. The veins usually contrast with the interspaces as dark lines, which, however, are not so prominent as in Group B. The deeper or paler colouring is a very unsafe guide in separating Groups A, B and C, and I also cannot discover any structural difference between those specimens of Group A which are more uniformly deep brown, or pale brown, or dark-veined.

The antennae have longer branches in the present group than in B and C, which is especially noticeable if the last segments are compared. But the difference is not evident enough to be of much diagnostic value. Moreover, the branches are by no means constant in individuals of the same wing-size.

The structure of the head is characteristic. The frons is broader in the female than in the male, which is owing to the eyes of the female being narrower than in the other sex, but bears the same protuberances in both sexes. The central projection being very easy to see with a lens, it affords the best means of recognising a female as belonging to the present group. The triangular or trilobate apical surface of the frontal process is rarely concealed by the long hair of the head; if it should be the case, the hair need only be moved aside with the help of a pin or small brush in order to bring the structure into view. On the denuded head we observe three elevations between the antennae and the mouth-cavity (the mouth-organs are absent or vestigial) (Pl. VII, fig. 1). A low transverse ridge (C) placed in front of the antennae is an excrescence of the anterior edge of the suture (S) which separates the epicranium from the large sclerite which in Lepidoptera forms the face or frons and is homologous to the clipeus of other insects. Centrally from this sharp and low ridge forward a transversely rounded-convex swelling gradually rises to form a large truncate prominence (Pl. VII, fig. 1, P.c.), the frontal process. Below this process, i.e. towards the mouth, the frons still remains convex, being raised above the frontal edge of the eye, and ends at the mouth with a second projection, an enlargement of the anterior edge of the clipeus. This oral process (Pl. VII, fig. 1, P.o.) is a transverse narrow ridge which is almost vertical on the plane of the frons, being slightly bent upwards. It nearly reaches across the frons, being much broader than in Groups B and C, and is usually reversed cordiform, being somewhat widened apically, with the apical margin sinuate or bidentate. Fig. 2 represents a side view of the frons.

These three structures are variable individually, the most conspicuous of them, the frontal process, also presenting very strongly marked modifications in size and outline. As a rule the sides of the triangle are much longer than the base, but sometimes the surface of the process is equilateral, apart from the irregularities of

the edges. The upper (central) lobe projects more forward than the lateral lobes. Occasionally the process is distinctly asymmetrical. Figs. 1 and 6-9 give an idea of the individual variation of the process. Differences such as shown in figs. 8 and 9 might easily be mistaken for specific, if only a few specimens were examined. The intermediates and the general instability of the size and outline of the process, however, dispose of that opinion.

In the female the processes are broader than in the male, the posterior ridge is usually higher, and the margins of the antennal grooves are more strongly elevated.

The second character mentioned above in the diagnosis of Group A relates to the covering of the body. There are no scales on the body, only hairs and bristles. In the ♂ the hair is long, soft and somewhat silky, and beneath it the upperside of the abdomen is densely studded with numerous spine-like bristles, stiff, short and sharp, lying more or less flat on the segments. In the ♀ the covering of hair is much sparser, and the hairs are shorter and stiffer, resembling slender bristles also on the underside of the body; the short bristles of the abdominal tergites are rather more numerous than in the ♂. In Groups B and C the hairs and bristles are similar, but the bristles are fewer in number, the difference being very obvious if specimens are compared side by side. The development of such bristles in *Somabrachys* is explained by the habit of pupating in the ground. We find them in numerous moths which have the same habit. They represent an instructive case of convergent development, due to adaptation to similar circumstances of life. The peculiar structure of the foretibia which *Somabrachys* has in common with *Lemonia* is another instance of this kind of resemblance.

The legs of *Somabrachys* are almost alike in the sexes, with these exceptions: (1) that the legs of the male, especially the tarsi, have a covering of scales besides bristles, whereas in the female there are only bristles and hairs; (2) that the claw at the end of the foretibia and the corresponding apical tooth of the mid- and hindtibiae are larger; and (3) that the tarsi are rather stouter. The differences from Groups B and C are found in the foreleg. The claw of the foretibia is usually convex on the upperside in Group A (= *Somabrachys aegrota*), rarely being longitudinally flattened or grooved. The forefemur is considerably slenderer than in Groups B and C (Pl. VIII, fig. 21), and beneath less flattened, the subconvex under-surface being bounded on the innerside only apically by a rudiment of a ridge, and the bristles placed on this side of the femur being the same colour as, or only slightly darker than, the hairs on the outer surface of the foreleg.

The most easily perceived distinction between the groups, however, is the difference in the position of vein R^1 (= 6) of the forewing. This vein arises in group A invariably **above** the angle of the discocellulars (Pl. VIII, figs. 16 and 18), the distance of its point of origin from that angle being unstable, as it also is in Group B. It is singular that nobody has taken any notice of the neuration of the forewing. Differences in the veins of the hindwing have been mentioned in the original descriptions of *powelli* and *chretieni*, which, however, do not hold good.

The individual variability is very considerable. Studying a long series of specimens, one meets with remarkable deviations from the normal *Somabrachys* neuration, the deviations occurring either symmetrically on both the right and left wings, or only on one wing. There are four subcostal branches in *Somabrachys*, SC^2 being absent; in two of our specimens of Group A vein SC^4 is forked on the right wing, and in one specimen on the left wing. In the hindwing the first

radial ($R^1 = 6$) either arises from the cell or is stalked with the preceding vein ($= C + SC^2 = 7 + 8$), the stalk being usually short, but sometimes of considerable length. R^2 and R^3 are sometimes on a short stalk in the fore- or the hindwing. The most interesting aberration in our series of *S. aegrota* is a specimen in which R^1 and R^2 of the forewing are coincident on both the right and left forewing, there being one vein less than in normal specimens, and the vein representing $R^1 + R^2$ arises in the centre of the discocellulars at the point, or a very little below it, where the central cell-fold ends. In the right wing of this specimen an oblique vein runs from near the upper angle of the cell to $R^1 + R^2$, joining this vein at one-third. In the same wing the costa anastomoses with the first subcostal branch, while R^2 of the left hindwing is stalked with R^3 and becomes obsolete before reaching the margin.

The female is entirely wingless, and its thorax very short and modified. I expect that some differences between the groups A, B, and C will be found to exist in the thoracic sclerites.

The genital armature of the male is of a very simple kind, and of great similarity in all three groups, being most distinctive in Group A. I have not found any differences between large and small, pale and dark specimens, or between examples from different countries (Marocco and Palestine, for instance).

The tenth tergite terminates in a short process which is nearly straight in a lateral view, with the exception of the apex, which is slightly curved downwards. In a dorsal view (Pl. VIII, fig. 25) it appears club-shaped, being widened apically. The dorsal surface is longitudinally impressed, and the apical margin is rounded-emarginate, not being produced centrally into a point, as in Groups B and C (Pl. VIII, fig. 24, anal view). The flanks of the tenth tergite proximally to the free process extend downwards, meeting a transverse brown sclerite at some distance below the central process (Pl. VIII, fig. 26). This plate, which is studded with minute granules, is the modified terminal portion of the rectum. It is convex on the upperside and concave beneath, being more or less closely applied to the cylindrical penis-sheath. The latter, which slightly tapers apically, projects from a simple collar. The lateral claspers of the ninth segment are much longer than broad, being of nearly even width from the base to the strongly-rounded apex (Pl. VIII, fig. 26). The ventral margin of this valve is convex, the apex somewhat incrassate on the innerside, and the dorsal margin concave. On account of this shape, the valves do not touch one another dorsally except near the apex, the tenth tergite remaining visible in between them.

GROUP B

We have 340 males of this group, but no females. All are from Algeria: Alger, Blida, Batna, and Guelt-es-Stel. The forewing varies in length from 9.5 to 14.5 mm., the majority of specimens measuring from 11.5 to 13 mm. If not too much worn, both wings have prominent dark brown vein-streaks. The thorax varies from dark mummy-brown to pale wood-brown. The extreme individuals are rather different in aspect, but no line of demarcation can be drawn. The obvious conclusion is that our specimens represent one species only, which conclusion is confirmed by the study of the structure. The name of this species is *S. infuscata* Klug (1832).

The process placed at the lower edge of the frons (Pl. VII, figs. 3, 4) is

bidentate as in *S. aegrota*, but much narrower than in that species. The two prongs or teeth vary in length, and very rarely are obliterated. The frons, when denuded, usually shows a central depression surrounded by an irregular rim, which is exceedingly variable, but always low. The rim and the groove are occasionally barely traceable. As a rule the rim is anteriorly open, ending here at each side in a small tooth or tubercle. The groove encircled is often divided up by irregular transverse folds, and frequently extends backwards as a shallow, irregular channel or scar. There is no ridge at the suture between the antennae. The homology of this central structure with the process of *S. aegrota* is evident from figs. 2 and 4, and 3 and 6. The scar is more or less different in every specimen (cf. figs. 10-12).

The branches of the antennae, especially those of the distal segments, are shorter than in *S. aegrota* (= Group A), and the spiniform bristles on the upperside of the abdomen less numerous.

The anterior femur is considerably thicker (Pl. VIII, fig. 22) than in *S. aegrota*, and flatter beneath, an obtuse edge being formed where the under and inner lateral surfaces meet. The covering of stiff hairs on the innerside is usually blackish brown. The thorn at the apex of the foretibia is flattened above, or more or less impressed longitudinally.

Although vein R^1 of the forewing (Pl. VIII, figs. 17 and 19) always arises from **below** the angle of the discocellulars, it sometimes, but rarely, approaches this angle so closely that a specimen with R^1 in that position might easily be confused with Group C, if the wings alone were examined. The individual variability in venation is no less great than in the case of *S. aegrota*. I mention the following examples: (a) R^1 and R^2 of both forewings stalked; (b) R^1 of right forewing normal, distally obsolete in left forewing, with a short additional vein arising from the cell in front of R^1 of left forewing; (c) R^1 of left forewing entirely coincident with R^2 , while in right forewing these two veins are approximated apically; (d) R^1 completely coincident with R^2 in left forewing, in right forewing coincident only apically; (e) R^1 and R^2 in both forewings, and R^2 and R^3 in both hindwings coincident.

The lower branch of the cell-fold of the forewing is variable in position in all three groups.

The tenth abdominal tergite of the ♂ (we have no ♀♀) gradually tapers to a sharp point, which is curved downwards. The tenth sternite is more strongly granulose than in *S. aegrota*, and the side-claspers are much broader, touching one another dorsally when closed and thus concealing the tenth tergite (Pl. VIII, fig. 27).

GROUP C

This is evidently less common than the previous groups. We have 68 males from Ain-Draham in Northern Tunis, Batna and Guelt-es-Stel in Algeria. Oberthür records *chretieni* from near Seb dou, *khenchelae* from Khenchela, *albinervis* from Seb dou and Géryville, and the doubtful *fumosa* (i.e. doubtful to me) from Géryville. Our specimens represent one single species, the name of which is *S. chretieni*, if my identification of Oberthür's figures is correct.

S. chretieni varies much less in size than *S. aegrota* and *S. infuscata*, and is always large, the forewing measuring 12 to 14 mm. in our series. The wings are more uniformly brown than in *S. infuscata*, the veins being hardly darker than the ground. Oberthür's *albinervis* is presumably based on specimens in which the

veins are denuded and therefore appear whitish in certain aspects. *S. chretieni* can easily be distinguished from *S. aegrota* and *S. infuscata* by the forefemur and the neuration.

The process projecting from the lower margin of the frons (Pl. VII, fig. 5) is similar to that of *S. infuscata*, and, as in that species, sometimes is triangular, in which case the two apical prongs or teeth usually present are obliterated. The central scar of the frons is only visible if the hair is removed. It generally consists of a double or single very low ridge in the shape of a horseshoe open anteriorly; in some specimens the scar is represented by a double raised central line, in others the scar is distinct only at the interantennal suture. The individual variability is very considerable (cf. figs. 13-15). I do not think that Groups B and C present a reliable difference in the shape of the scar.

There is apparently also no difference between *S. chretieni* and *S. infuscata* in the spines of the abdominal tergites. The forefemur, however, which is flattened beneath as in *S. infuscata*, and bears at the innerside a ridge dividing the under surface from the lateral one, has at the apex towards the innerside ventrally a triangular, transversely placed tooth, which is variable in size, and absent from the other two species (Pl. VIII, fig. 23). The foretibia is slenderer than in *S. infuscata*, and the proximal portion from the knee-joint to the base of the apical claw is slightly longer. The stiff hairs on the inner surface of the forefemur are usually dark brown, sometimes pale.

The shape of the forewing varies inasmuch as the costal margin is either nearly straight or distally more distinctly curved forward. Vein R^1 (=6) always arises from the angle of the discocellulars, being a direct continuation of the vestigial cell-vein (Pl. VIII, fig. 20). In this character *S. chretieni* is more ancestral than the other species of *Somabrachys*. The variability in the neuration of our series is not considerable. The most noteworthy case is that of a specimen (from Guelt-es-Stel), in which R^1 of the left forewing sends out a branch which does not reach the margin; while in the right forewing R^1 is connected by an additional cross-vein with the lower cell-angle, and by another with the last subcostal vein.

The male genitalia are of no great help in distinguishing *S. chretieni* from *S. infuscata*. The apex of the tenth tergite is less suddenly bent downwards, and the apical point is longer (Pl. VIII, fig. 29, dorsal view); moreover, the clasper is longer and narrower, and its dorso-apical margin thicker (Pl. VIII, fig. 28). The upper surface of the tenth tergite is either convex, or longitudinally impressed.

To sum up, my conclusion is that we have only three species of *Somabrachys*. It remains to be seen whether Oberthür really has more species, which I doubt. Having ♀♀ of one species (*S. aegrota*) only, we **assume** for the present that the distinctions in the ♂♂ (apart from the wings and genitalia) of *S. infuscata* and *S. chretieni* apply likewise to the ♀♀. If the assumption is correct, the ♀ of *S. infuscata* can be recognised by the absence of a prominent central frontal process, and of an apical tooth on the forefemur, and the ♀ of *S. chretieni* by the possession of this femoral tooth.

ANTHRIBIDAE COLLECTED BY MONSIEUR I. VITALIS
DE SALVAZA IN FRENCH INDO-CHINA.

By KARL JORDAN, PH.D.

(With 4 text-figures.)

THE specimens of *Anthribidae* which Monsieur I. Vitalis de Salvaza obtained on his travels in Cambodja, Annam, and Tonkin were very kindly submitted by him to me with the request to work them out. Very little has been recorded from these countries besides the few species I have described in *Nov. Zool.* on various occasions. The present collection contains only nineteen species, which is undoubtedly a very small percentage of the species actually occurring. The total absence in this collection of representatives of *Acorynus* and *Litocerus* is remarkable, considering that these genera have an abundance of species in the Malayan countries, and are also well represented on Formosa. The collection is nevertheless a very welcome contribution to our knowledge of the distribution of the *Anthribidae*, and, moreover, contains several species which are undescribed. The types of these novelties are in the Tring Museum, and I take the opportunity of thanking Monsieur Vitalis de Salvaza once more for his generosity in presenting them to our collection in addition to other specimens.

1. *Phloeopemon acuticornis* Fabr. (1801)

Anthribus acuticornis Fabricius, *Syst. Eleuth.* 2, p. 405. no. 4 (1801) (Sumatra).

A fairly common Indo-Malayan species. Monsieur Vitalis obtained a series collected in various places in Annam and Tonkin, the species being met with by him in all months from May to August.

2. *Meganthribus harmandi harmandi* Lesne (1891)

Eugigas harmandi Lesne, *Bull. Soc. Ent. France*, p. 91 (1891) (Cochinchina; Cambodja).

A single ♀ from Sambor, Cambodja, September 1912.

3. *Mecotropis vitticollis tonkinianus* subsp. nov. (text-fig. 2)

♀. The median vitta of the pronotum is broader than in *M. v. vitticollis* Jord. (1895), from Assam, the two dorsal spots (one on each side) are united with it, and the dorsal lateral vitta is replaced by some spots. The greyish buff markings of the elytra are larger; there is in interspace 4 a short basal stripe, more or less joined to the sutural vitta, but no oblique line above the shoulder-angle; the apical patch is much larger, and the spots in the median area of the elytra are more numerous. The greyish-white median ring of the tibiae is broader; the meso-metasterna and the first abdominal segment are broadly black in the centre, and the mesosternal intercoxal process is much broader than in *M. v. vitticollis* (cf. text-figs. 1, *tonkinianus*; 2, *vitticollis*).

As in *M. v. vitticollis*, segments 6, 7, and 8 of the antenna are entirely white, 1 ♀ from Chapa, via Lao Kay, Upper Tonkin, April 1915.

4. *Mecocerus vitalis* spec. nov. (text-fig. 3)

♀. Similis *M. cylindrico* Jord. (1904), sed antennarum articulis 7° et 8° totis albis, tarsorum art. 2° toto nigro, prosterno ante coxas fossa transversa figurae 3 simili instructo.

Long. (cap. exc.): 16 mm.

Hab. Sambor, Cambodja, September 1912, 1 ♀.

Resembles *M. cylindricus* Jord. (1904), from Tonkin, but the antenna is somewhat thicker, and segments 7 and 8 are entirely pubescent-white, while in *M. cylindricus* the tip of the seventh, the entire eighth, and the base of the ninth are white. The sides of the pronotum are black, with a grey dot before the middle and another some distance in front of the carina. The grey markings of the elytra are edged with russet; the declivous apex is grey, with some russet and black

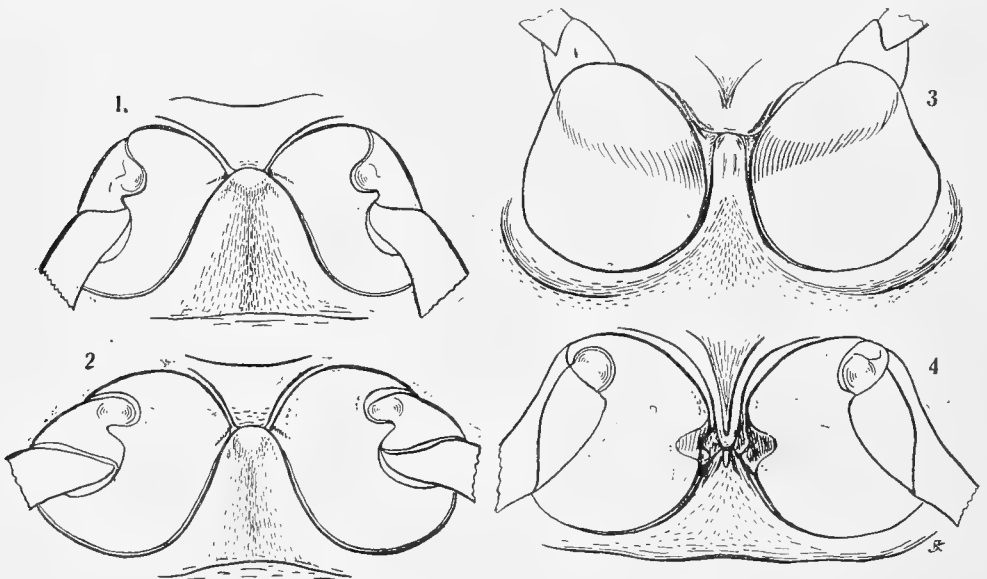


FIG. 1.—Mesosternum of *Mecotropis vitticollis tonkinianus*.
 " 2.—" " " " *vitticollis*.
 " 3.—Prosternum of *Mecotropis vitalis*.
 " 4.—" " " " *cylindricus*.

spots. The groove on the prosternum runs parallel with the margins of the coxal cavities, entering in between the coxa, and therefore resembling the figure 3. In *M. cylindricus* this groove is almost straight in front and much deeper (cf. text-figs. 3, *vitalis*; 4, *cylindricus*). The mesosternal process is rather narrower apically than in *M. cylindricus*, and the second basal segment is quite black.

Differs from *M. vitticollis* especially in segment 6 of the antenna being black, in the pronotum being somewhat depressed longitudinally on each side of the middle, the centre appearing somewhat raised and bearing a black spot in the grey median vitta.

5. *Mecocerus allectus indochinensis* subsp. nov.

♂ ♀. *M. a. maculato* Jord. (1894) simillimus, pronoto magis regulariter nigro-reticulato, elytris minutius nigro-tessellatis.

Hab. Toura Kom, Annam, July 1915 (type); Keng Trap, Annam, April 1915; Lao Kay, Upper Tonkin, July 1913; a small series of both sexes.

We also have a ♀ from Phac Sou, Annam (H. Fruhstorfer), November—December; and a number of specimens (♂ ♀) from Laos.

6. *Mecocerus asmenus* Jord. (1913)

Mecocerus asmenus Jordan, *Rec. Ind. Mus.* ix. p. 204. no. 7 (1913) (♂, Cachar; ♀, Sadiya).

1 ♀ from Keng Trap, Cuerao, Annam, August 1913.

We have also a ♂ from Hoa Binh, Tonkin.

These two specimens differ from the two Indian examples described by me, *l.c.*, in the dorso-lateral basal tawny spot of the pronotum not being continued forward across the carina.

7. *Physopterus oculatus* Jord. (1904)

Physopterus oculatus Jordan, *Nov. Zool.* p. 231. no. 4 (1904) (Tonkin, ♂ ♀).

1 ♂ from Keng Trap, Cuerao, Annam, August 1913; 2 ♀ ♀ from Chapa, Upper Tonkin, April 1912.

8. *Merarius davidis* Fairm. (1889)

Merarius davidis Fairmaire, *Ann. Soc. Ent. France*, p. 56 (1889) (Moupin).

1 ♀ from Chapa, Upper Tonkin, April 1912.

9. *Straboscopus tessellatus* Eyd. & Soul. (1839)

Stenocerus tessellatus Eydoux et Soulayet, *Rev. Zool.* p. 265 (1839) (Manila).

One small ♀ from Vientiane, Me-kong, May 1915.

This species and *S. riehli* Lac. (1866) resemble each other in colouring very closely. In *tessellatus*, however, the club of the antennae of both sexes is much more compact, segments 10 and 11 not being narrowed to a point at the base, as is the case in *riehli*; moreover, the mesosternal process of *tessellatus* is widened at the apex and the midcoxae are correspondingly notched, whereas in *riehli* the process is much more evenly rounded apically, and the midcoxae are without a notch.

10. *Xenocerus salamandrinus* nov. sp.

♂ ♀. Brunneo-niger, subtilissime cinereo pubescens, supra et infra maculis luteo-ochraceis nigro marginatis ornatus, antennis pedibusque rufescentibus, illarum segmentis 2^a–5^a (♂) vel 2^a–6^a (♀) pilosis.

Hab. Hoa Binh, Tonkin, 1 ♂ (type), received from Monsieur H. Donckier de Donzeel; 1 ♀ collected by I. Vitalis de Salvaza at Kompong Toul, Cambodja.

A very distinct species, in the structure of the antenna allied to *X. khasianus* Jord. (1895), *X. andamanensis* Jord. (1894), etc.

The tomentum of both the upper- and underside is so short that it does not conceal the colour of the derm. The ochreous buff markings, most of which are bordered with black, the others accompanied by a black spot, are distributed as follows: On the upperside of the head two stripes, another, shorter stripe beneath

the antennal groove; on the pronotum a row of three spots on each side, a small basal median spot and an indication of a spot at the apical margin in front of each row of spots; a spot occupying the scutellum; on the elytra an ovate spot on the suture before and a transverse one behind the middle, an elongate basal spot above the shoulder, a smaller some distance behind the shoulder, an antemedian spot in fifth interspace, an irregular one laterally of the transverse sutural mark, but a little farther forward, and a pair of spots before the apex of each elytrum; on the pygidium two stripes; an interrupted lateral stripe on the prosternum, two convergent stripes on the mesosternum and an interrupted apical transverse band on each side of the metasternum; a lateral row of spots on the abdomen; a spot on the coxae and trochanters and an apical one on the femora; tibiae and tarsi except apices likewise pale ochraceous; segments 7 and 8 of the antennae rufous, with pale ochraceous pubescence.

The groove of the head in between the antennae is rather large. The third segment of the antennae is short, 2, 4, 5 and 6 are compressed, and, like 3, bear a coat of black hair.

11. *Xylinades plagiatus* Jord. (1895)

Xylinades plagiatus Jordan, *Ent. Zeit. Stettin* lvi. p. 257. no. 17 (1895) (Assam, ♂ ♀).

Both sexes from: Vientiane, on the Mekong, May 1915; Toura Khom, Annam, July 1915.

12. *Xylinades aspericollis* Jord. (1895)

Xylinades aspericollis Jordan, *l.c.*, p. 258. no. 19 (1895) (Borneo).

1 ♀ from Toura Khom, Annam, July 1915. We also have a ♀ from Than-Moi, Tonkin, collected by H. Fruhstorfer during June—July. The species is known to me from Java, Nias, Sumatra, Malay Peninsula, Penang, and Borneo.

13. *Rawasia ritsemæ* Roel. (1880).

Rawasia ritsemæ Roelofs, *Notes Leyd. Mus.* ii. p. 204 (1880) (Sumatra).

2 ♂♂ from Chapa, Upper Tonkin, April 1912, and Toura Khom, Annam, July 1915.

The species is common in the Indo-Malayan countries.

14. *Dendrotrogus angustipennis* Jord. (1895).

Dendrotrogus angustipennis Jordan, *Ent. Zeit. Stettin* lvi. p. 191. no. 81 (1895) (Burma, ♂ ♀).

Both sexes from Vientiane, on the Mekong, May 1915, and Kompong Keday, Cambodja, April—May 1914.

15. *Eucorynus crassicornis* Fabr. (1801).

Anthrribus crassicornis Fabricius, *Syst. Eleuth.* 2. p. 407. no. 12 (1801) (Sumatra).

Numerous specimens of this widely distributed and common species from Kompong Keday, province of Kompong Thom, Cambodja, April—May 1914; Kompong Toul, Cambodja, June 1913; Keng Trap, Annam, April 1915; Pak Lay, June 1915; Vientiane, October 1914 and May 1915.

16. *Basitropis affinis* Jord. (1903).

Basitropis affinis Jordan, *Nov. Zool.* x. p. 432. no. 52 (1903) (Andamans, Sumatra, Celebes, ♂ ♀).

A pair from Kompong Toul, Cambodja, April—May 1914, and 1 ♂, 4 ♀ ♀ from Vientiane, May 1915.

17. *Basitropis nitidicutis* Jekel (1855).

Basitropis nitidicutis Jekel, *Ins. Saund.* 1. p. 92. tab. 2. fig. 2, 2a (1855) (Java ; India).

1 ♀ from Lao Kay, Upper Tonkin, July 1913.

18. *Basitropis persimilis* spec. nov.

♂ ♀. *B. nitidicuti* Jekel (1855) simillima, sed antenna clava angustiore, pygidio lanoso sine vitta brunnea mediana, tibiisque ante apicem immaculatis.

Hab. Vientiane, on the Mekong, May 1915 (type); Kompong Kedey, province of Kompong Thom, Cambodja, April—May 1914, a series. In the Tring Museum also from Malacca and Tenasserim.

As in *B. nitidicutis*, the rostrum is at least twice as broad as it is long, and bears a thin median carina, which is more or less irregular on account of the coarse puncturation, and extends well on to the broad frons. The antenna likewise resembles that of *nitidicutis*, the club consisting of four segments in the ♂, the preceding segments gradually decreasing in width; segment 8, however, is considerably smaller than 9, resembling the latter much less than it does in *nitidicutis*. The lateral carina of the prothorax is somewhat straighter if viewed from the side, and the pygidium, on account of the longer woolly hair with which it is covered, has the appearance of being more convex than in *nitidicutis*. In colour *persimilis* differs from *nitidicutis* especially in the absence of a brown median stripe or patch on the pygidium and of a brown subapical spot on the tibiae. The luteous grey spots and patches on the pronotum and elytra are in most specimens of *persimilis* smaller and better defined than in *nitidicutis*.

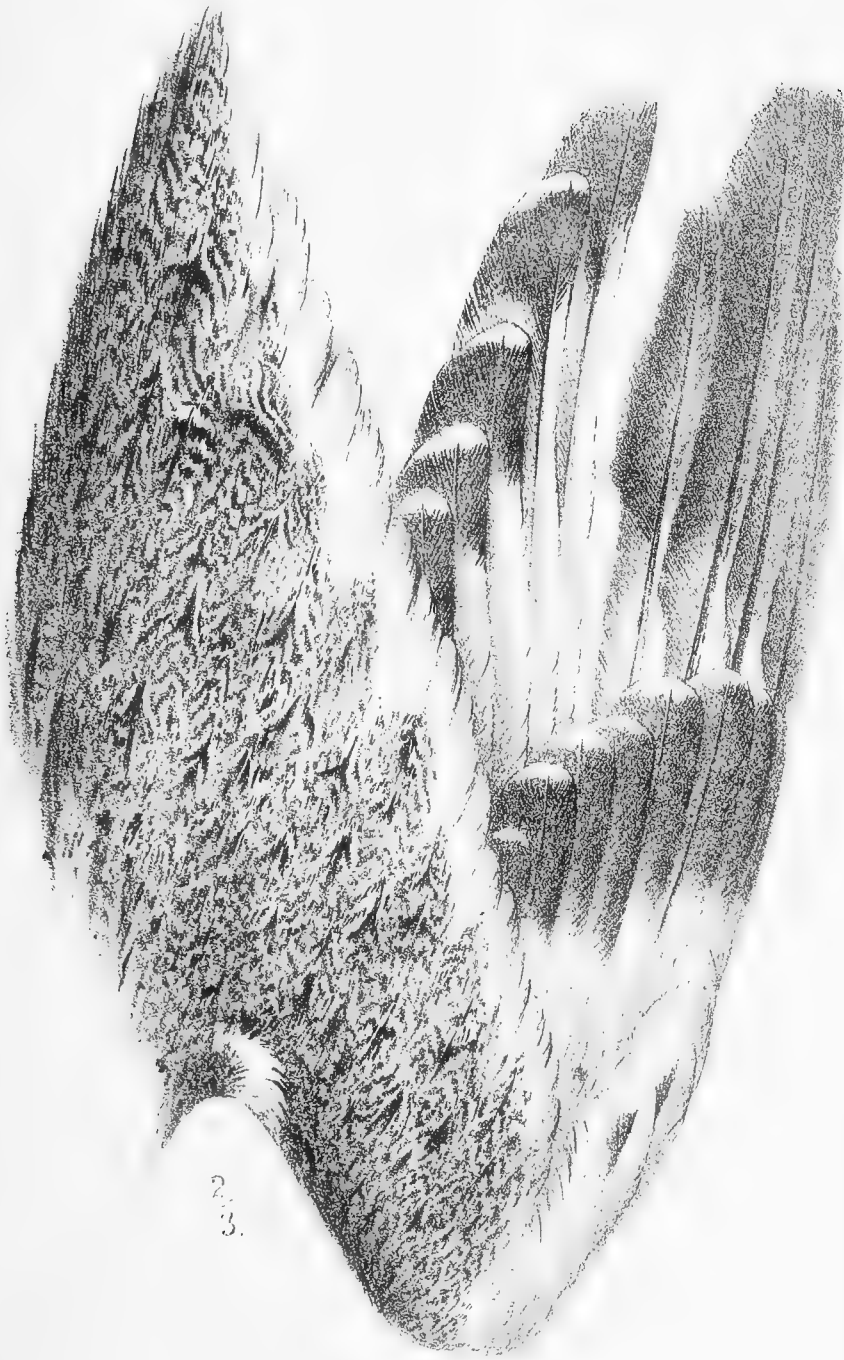
19. *Phloeobius pallipes* Jord. (1895).

Phloeobius pallipes Jordan, *Ent. Zeit. Stettin* lvi. p. 197. no. 90 (1895) (Perak ; Sumatra).

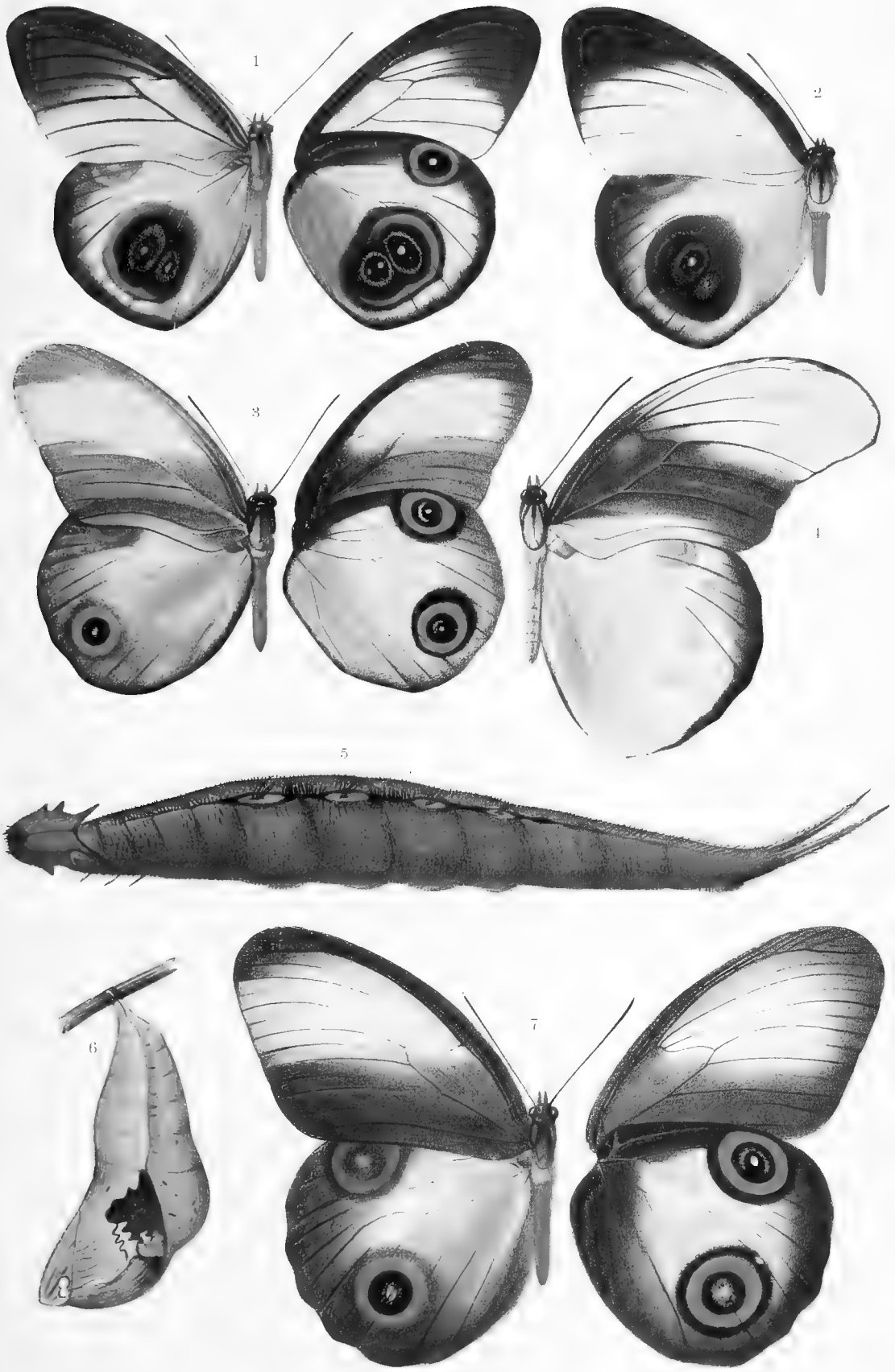
A small series containing both sexes, from Sambor, Cambodja, September 1912; Kompong Toul, Cambodja, June 1913; Vientiane, on the Mekong, June 1915; Chapa, via Lao Kay, Upper Tonkin, April 1912.

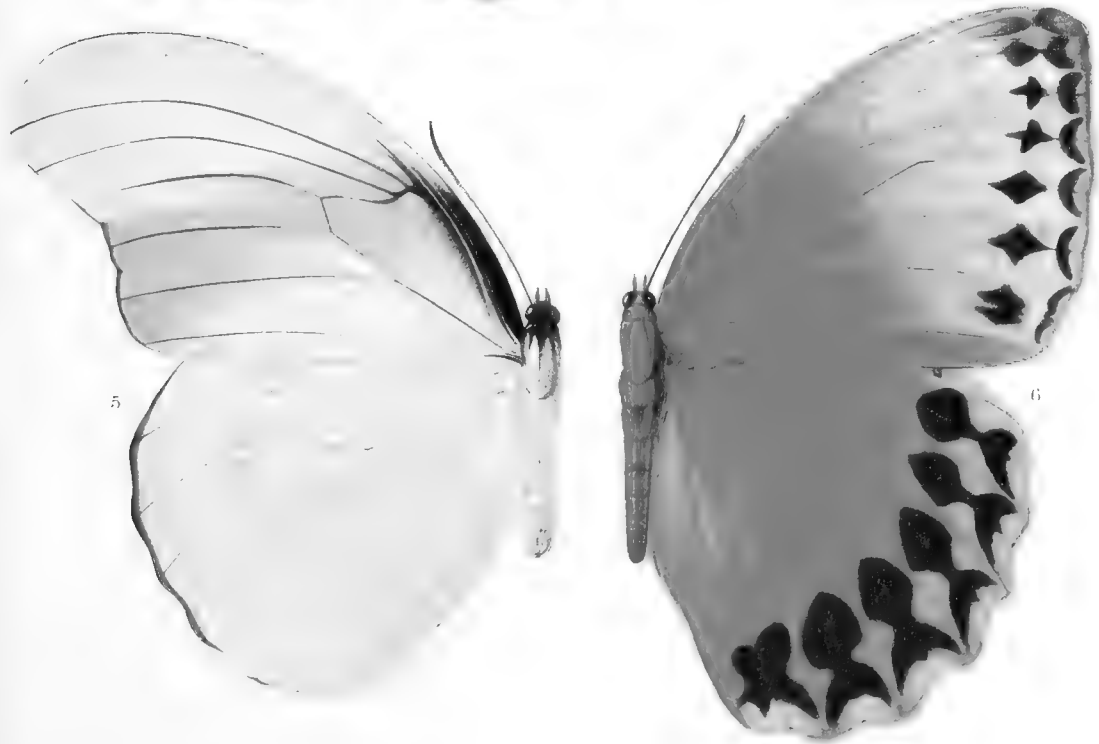
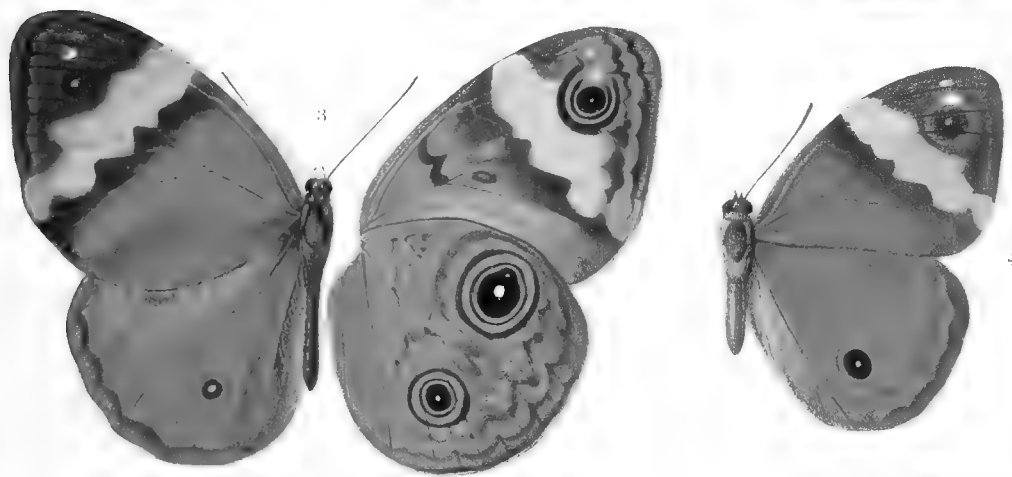
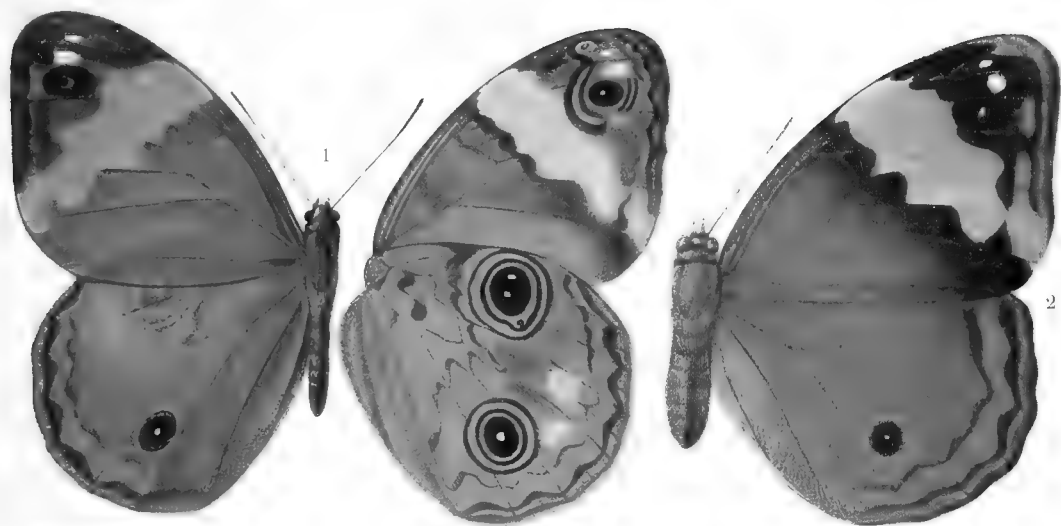


CALLÆOPS PERIOPHTHALMICA *Ogilvie-Grant.*



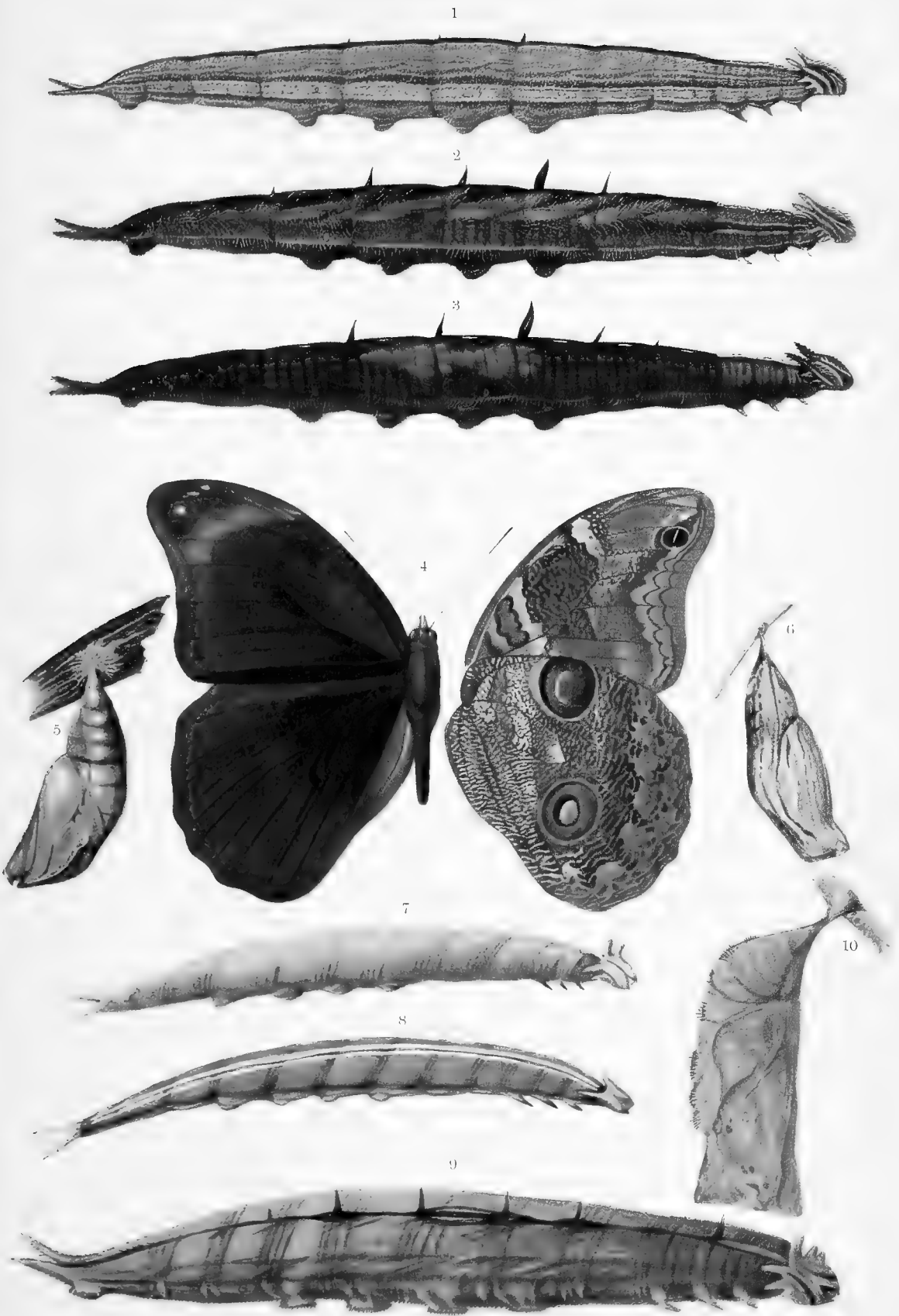
WING OF OTIS TETRAX ♂ AD.

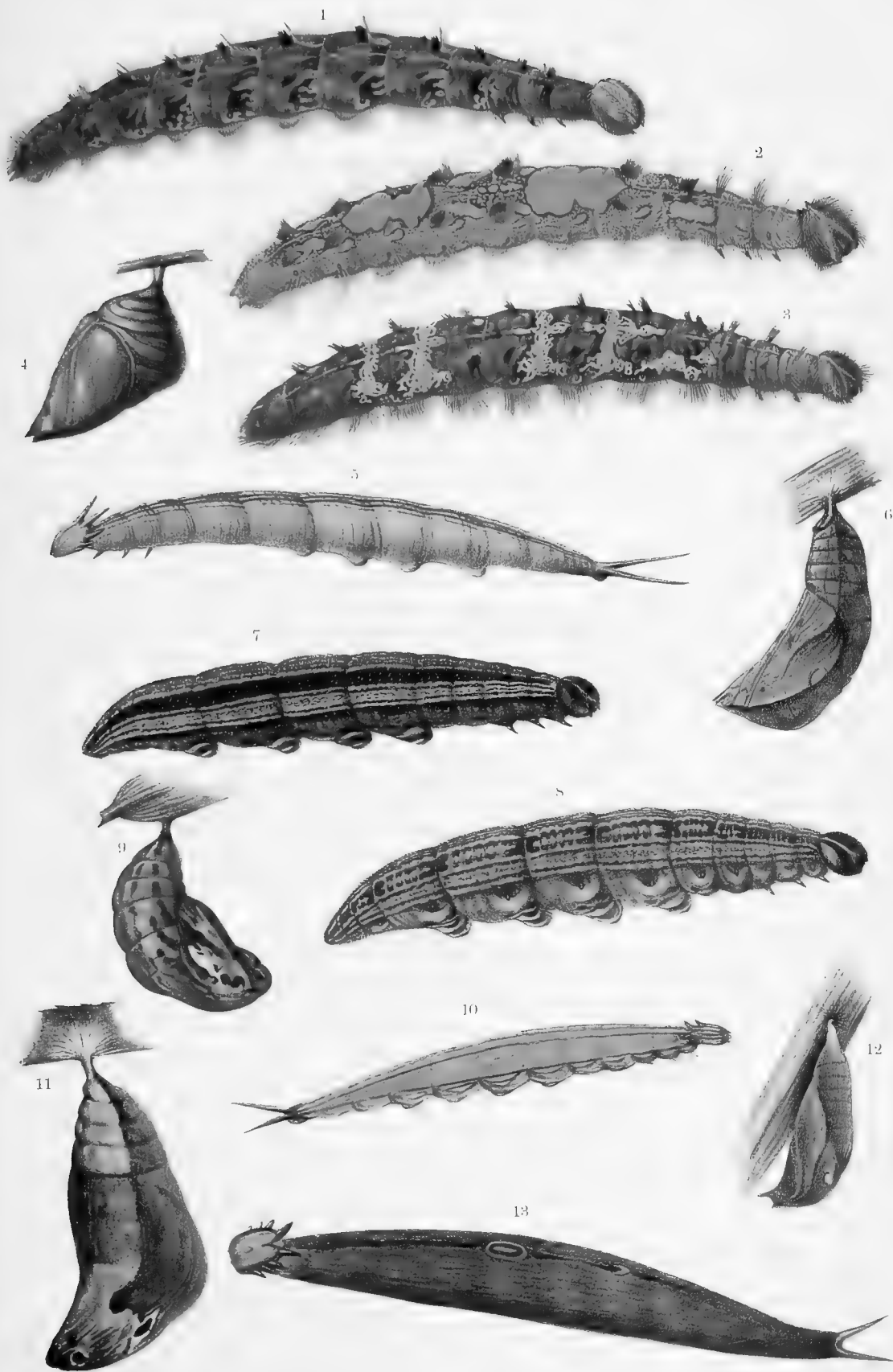




EXPLANATION OF PLATE V.

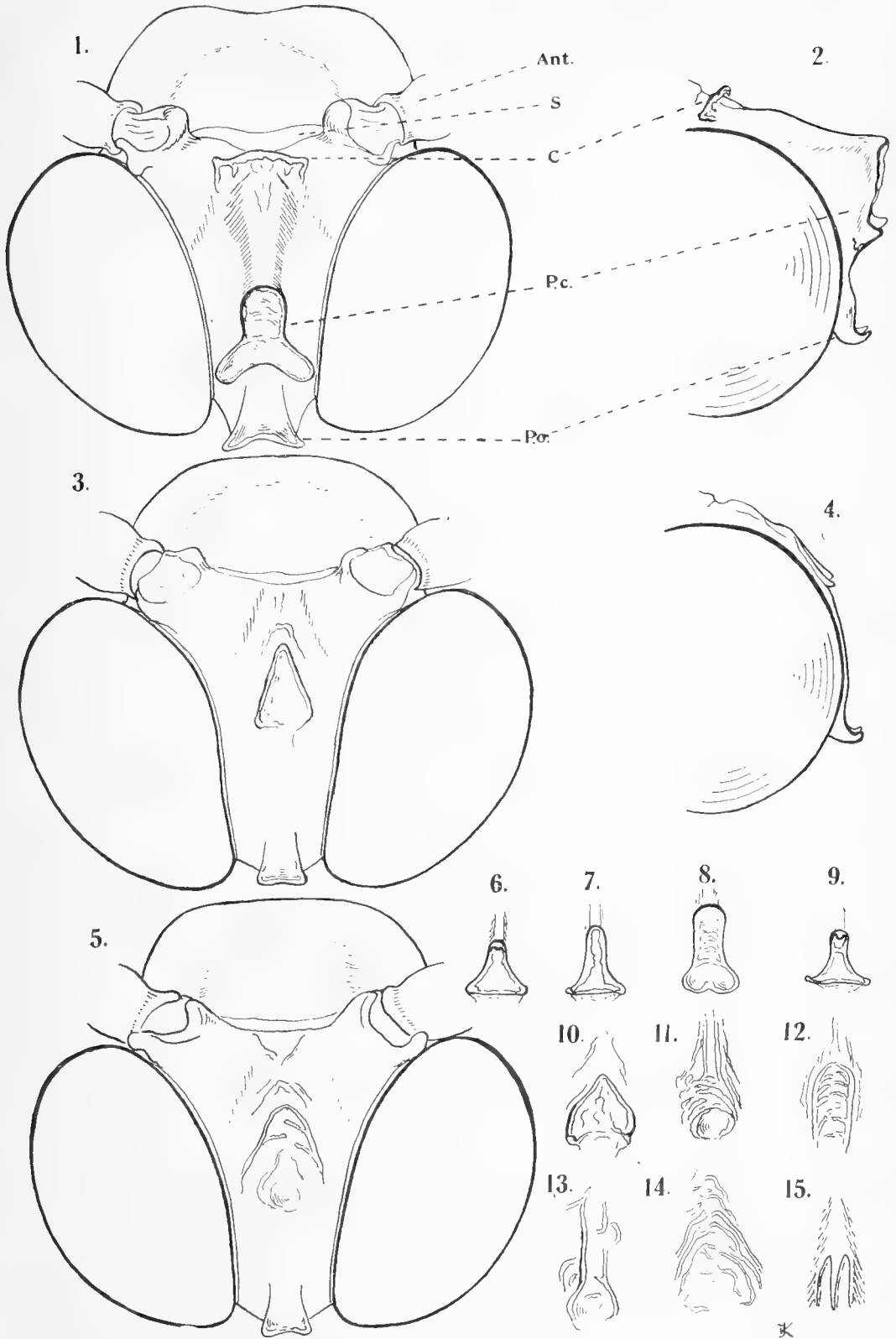
Fig. 1.	<i>Caligo ilioneus pampeiro</i>	larva	.	.	.	.	.	.	.	p. 312
„ 2.	„	<i>prometheus epimetheus</i>	larva	-	-	-	-	-	-	p. 313
„ 3.	„	<i>oberthuri oberthuri</i>	larva	.	.	.	.	.	.	p. 314
„ 4.	<i>Opsiphanes flemmingi</i>	♂	-	-	-	-	-	-	-	p. 311
„ 5.	„	<i>cassiae lucullus</i>	pupa	.	.	.	.	.	.	p. 311
„ 6.	„	<i>batea batea</i>	pupa	-	-	-	-	-	-	p. 310
„ 7.	„	<i>cassiae lucullus</i>	larva	.	.	.	.	.	.	p. 311
„ 8.	„	<i>batea batea</i>	larva	-	-	-	-	-	-	p. 310
„ 9.	<i>Caligo brasiliensis</i>	<i>brasiliensis</i>	larva	.	.	.	.	.	.	p. 313
„ 10.	„	„	pupa	-	-	-	-	-	-	p. 313





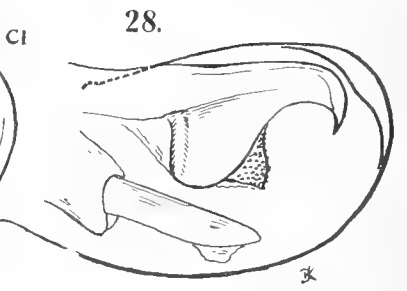
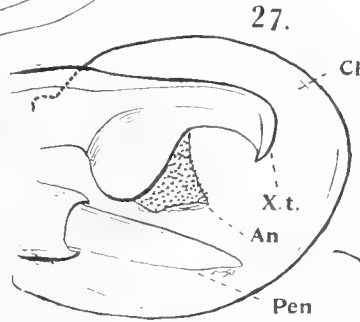
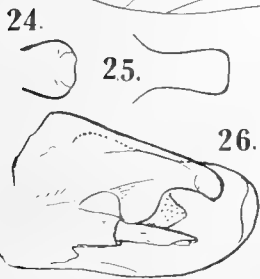
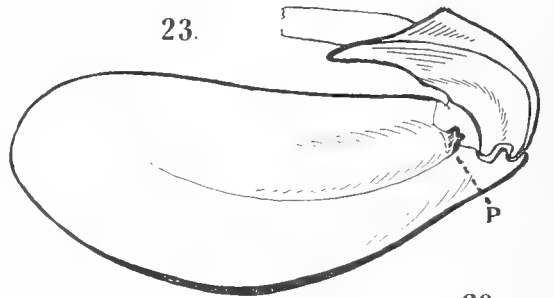
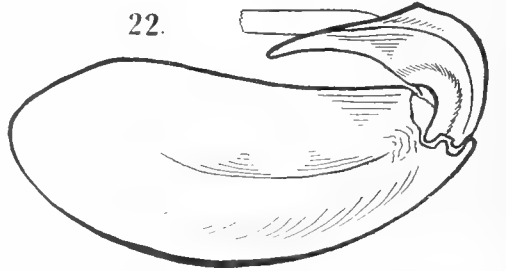
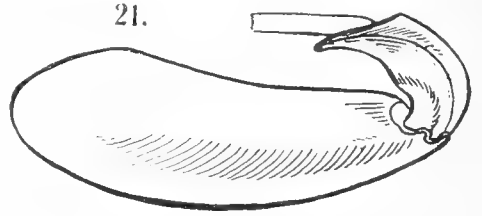
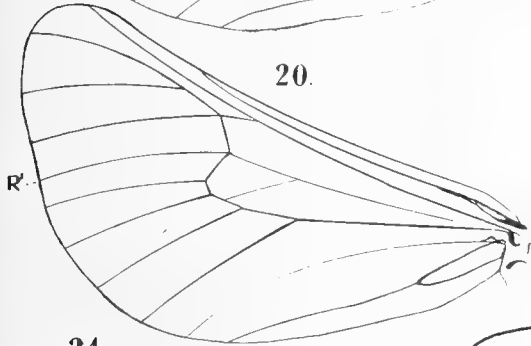
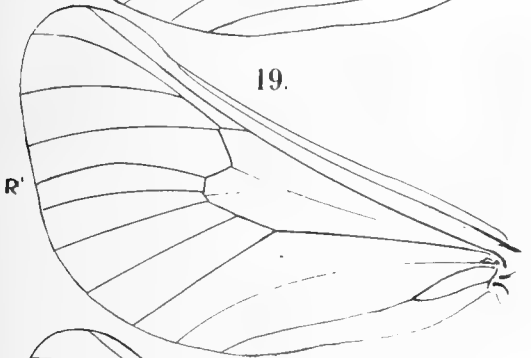
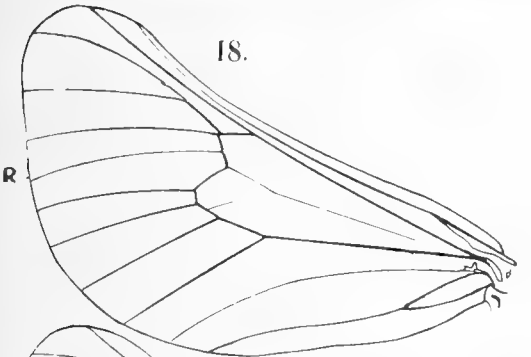
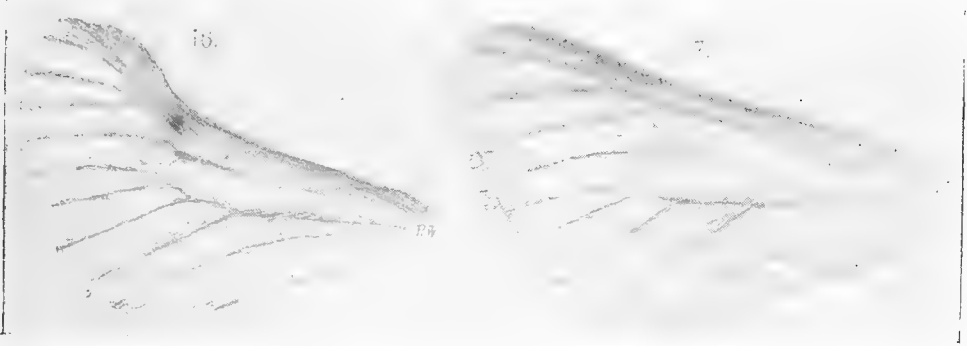
EXPLANATION OF PLATE VII.

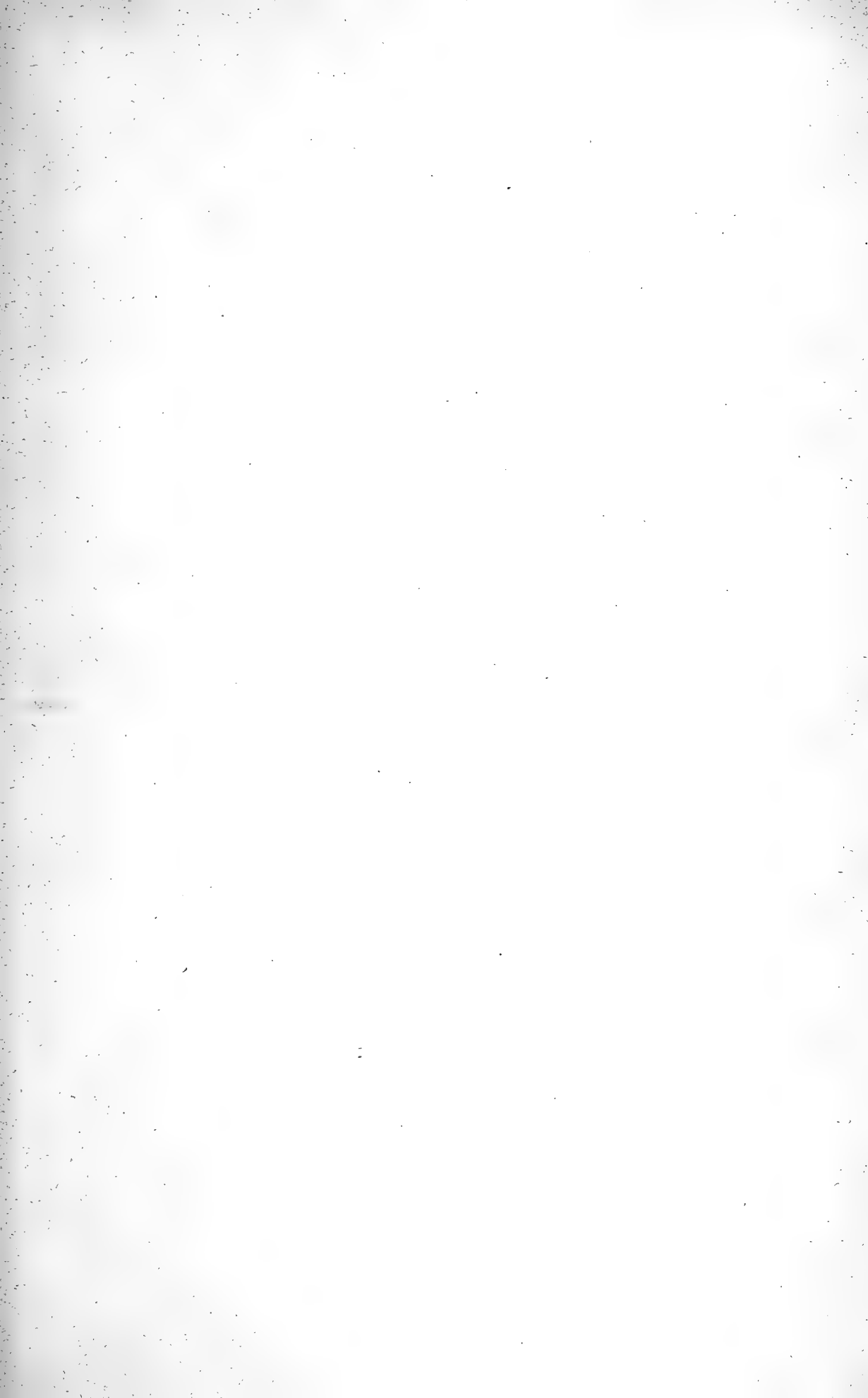
Fig. 1.	Head of <i>Somabrachys aegrota</i> , frontal aspect	. . . . .	p. 353
„ 2.	„ „ „ lateral „	- - - - -	p. 353
	Ant. = antenna ; S. = suture separating the frons (= clipeus) from the epicranium ; C. = ridge in front of the interantennal suture ; P.c. = central process ; P.o. = oral process.		
„ 3.	Head of <i>Somabrachys infuscata</i> , frontal aspect	. . . . .	p. 356
„ 4.	„ „ „ lateral „	- - - - -	p. 356
„ 5.	„ „ <i>chretieni</i> , frontal „	. . . . .	p. 357
„ 6.	Frontal process of <i>Somabrachys aegrota</i>	- - - - -	p. 353
„ 7.	„ „ „ „	. . . . .	p. 353
„ 8.	„ „ „ „	- - - - -	p. 353
„ 9.	„ „ „ „	. . . . .	p. 353
„ 10.	„ scar of „ <i>infuscata</i>	- - - - -	p. 356
„ 11.	„ „ „ „	. . . . .	p. 356
„ 12.	„ „ „ „	- - - - -	p. 356
„ 13.	„ „ „ <i>chretieni</i>	. . . . .	p. 357
„ 14.	„ „ „ „	- - - - -	p. 357
„ 15.	„ „ „ „	. . . . .	p. 357



EXPLANATION OF PLATE VIII.

Fig. 16.	Forewing of <i>Somabrachys aegrota</i> , type-specimen	. . .	p. 353
„ 17.	„ „ <i>infuscata</i> „ „	- - -	p. 356
„ 18.	„ „ <i>aegrota</i> . . . . .	. . . . .	p. 353
„ 19.	„ „ <i>infuscata</i> - - - - -	- - - - -	p. 356
„ 20.	„ „ <i>chretieni</i> . . . . .	. . . . .	p. 357
„ 21.	Fore femur and tibia of <i>Somabrachys aegrota</i>	- - - - -	p. 353
„ 22.	„ „ „ „ <i>infuscata</i> . . . . .	. . . . .	p. 356
„ 23.	„ „ „ „ <i>chretieni</i> - - - - -	- - - - -	p. 357
„ 24.	Apex of tenth abdominal tergite, anal view, of <i>Somabrachys aegrota</i> ♂	. . . . .	p. 353
„ 25.	Apex of tenth abdominal tergite of <i>Somabrachys aegrota</i> ♂, dorsal aspect	- - - - -	p. 353
„ 26.	Genitalia of <i>Somabrachys aegrota</i> ♂	. . . . .	p. 353
„ 27.	„ „ <i>infuscata</i> ♂ - - - - -	- - - - -	p. 356
	X.t = tenth tergite ; An. = anus ; Pen. = penis-sheath ; Cl. = clasper.		
„ 28.	Genitalia of <i>Somabrachys chretieni</i>	p. 357
„ 29.	Apex of tenth tergite of <i>Somabrachys chretieni</i>	- - - - -	p. 357





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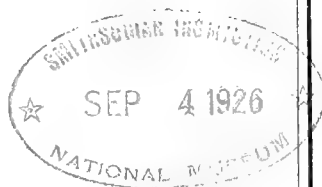
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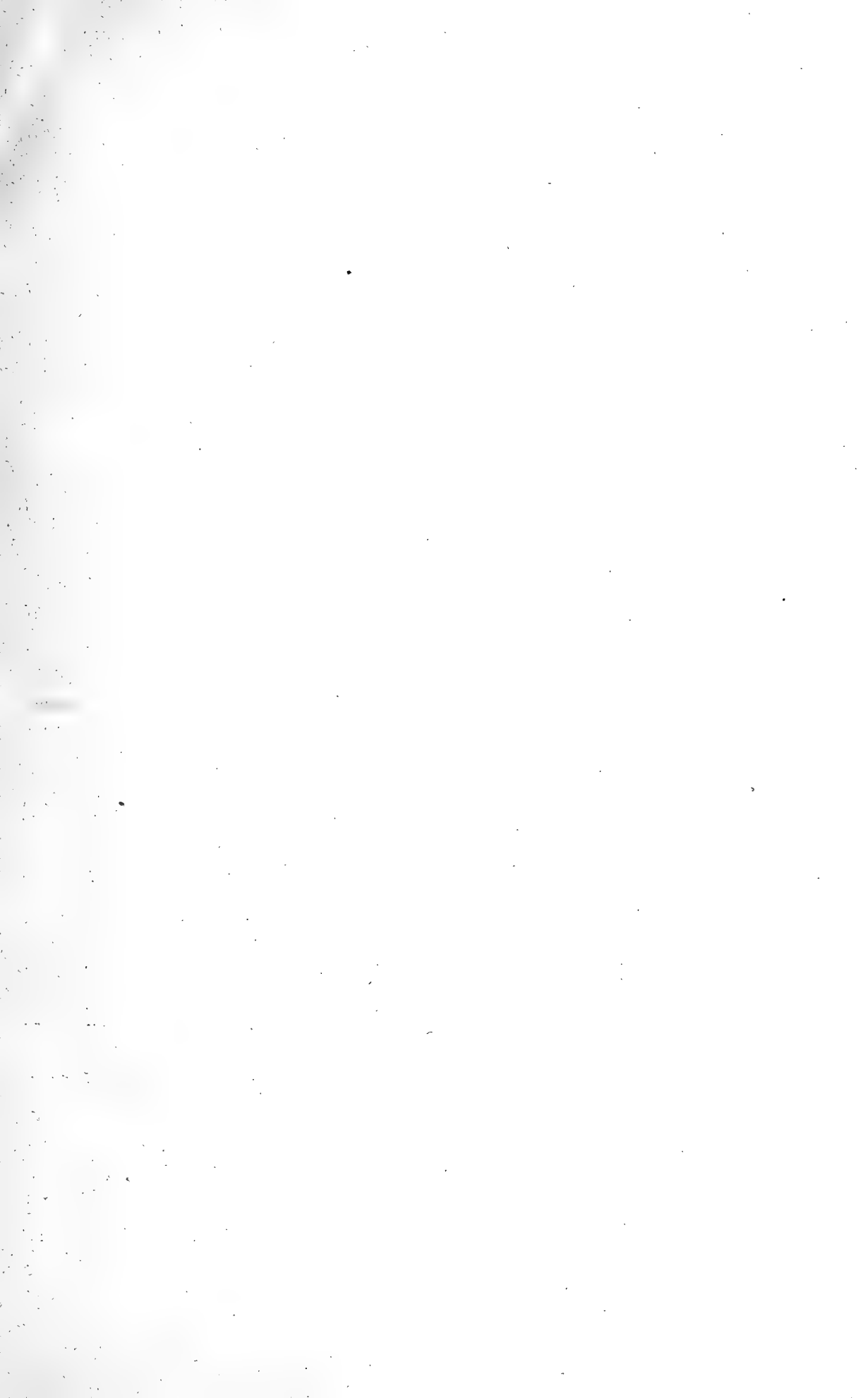
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