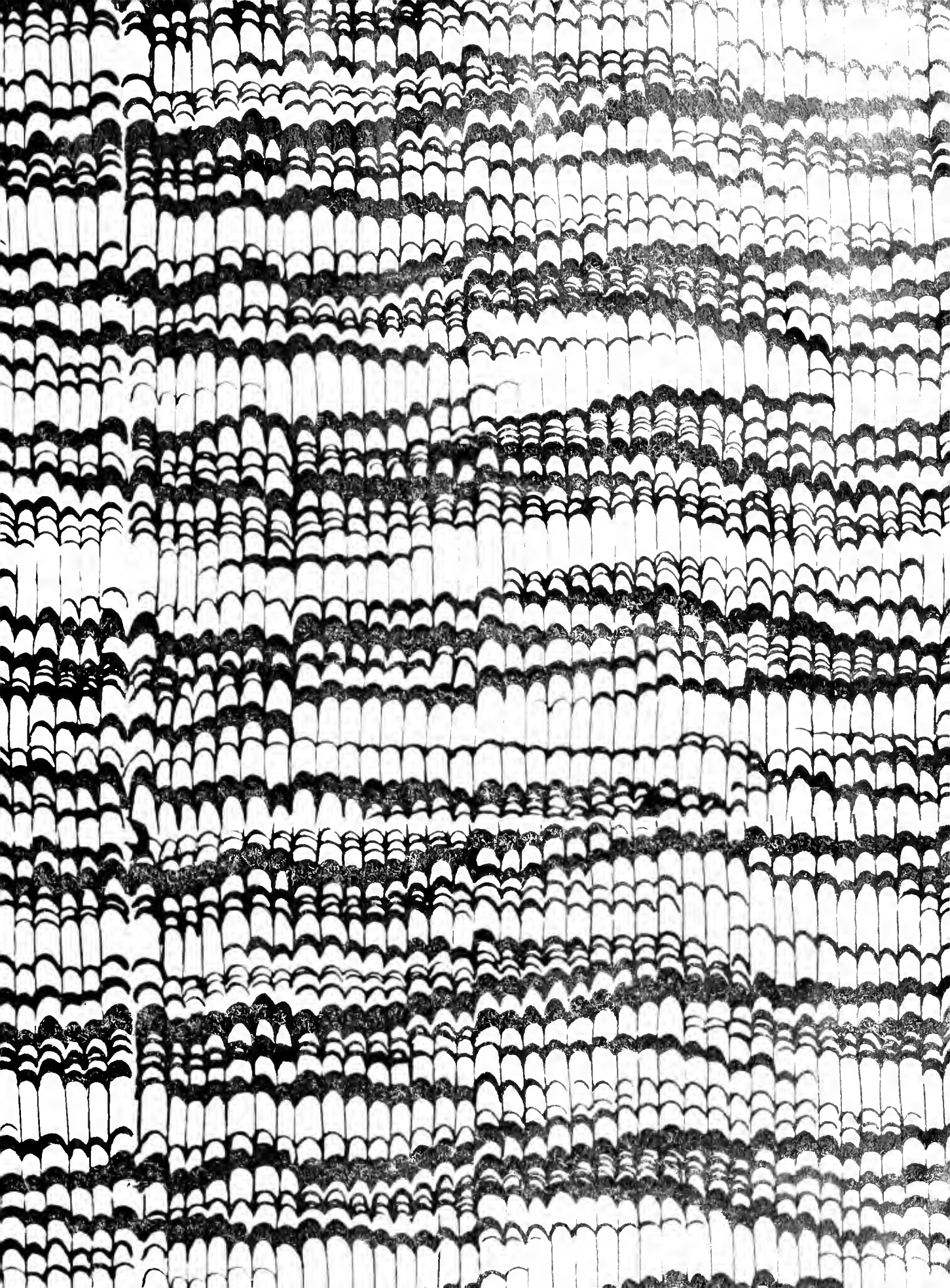






COLLECTION
OF
WILLIAM SCHAU
PRESENTED
TO THE
NATIONAL MUSEUM
MCMV



RHOPALOCERA EXOTICA,

BEING

ILLUSTRATIONS OF NEW, RARE, AND UNFIGURED SPECIES

OF

BUTTERFLIES.

BY

H. GROSE SMITH and W. F. KIRBY.

VOL. I.

WITH SIXTY HAND-COLOURED PLATES.

LONDON:

GURNEY & JACKSON, 1, PATERNOSTER ROW,

(SUCCESSORS TO MR. VAN VOORST.)

1887—1892.



LONDON:
WOODGALL AND KINDER, PRINTERS,
72, 10, 76, LONG ACRE, W.C.

PREFACE.

THE present work is designed to illustrate some of the rarer and more beautiful new species of butterflies which are continually being sent to Europe from all parts of the world by travellers and missionaries, as well as by professional collectors, and it may be regarded as supplementary to the late Mr. Hewitson's "Exotic Butterflies," and "Illustrations of Diurnal Lepidoptera." The materials for those Publications were chiefly derived from the Collections of Mr. Hewitson and of Mr. Wilson Saunders, Mr. Hewitson's Collection of Butterflies being now in the Natural History Museum at South Kensington, and that of Mr. Wilson Saunders having passed into the possession of Mr. H. Grose Smith, on the dispersal of Mr. Wilson Saunders' extensive Collections of all Orders of Insects.

The Insects figured and described in this volume are chiefly selected from the Collection of Mr. Grose Smith, and with very few exceptions have not been previously figured; there is reason for anticipating that a sufficient supply of new Species will continue to be received by Mr. Grose Smith to allow of the work being carried on for several more volumes.

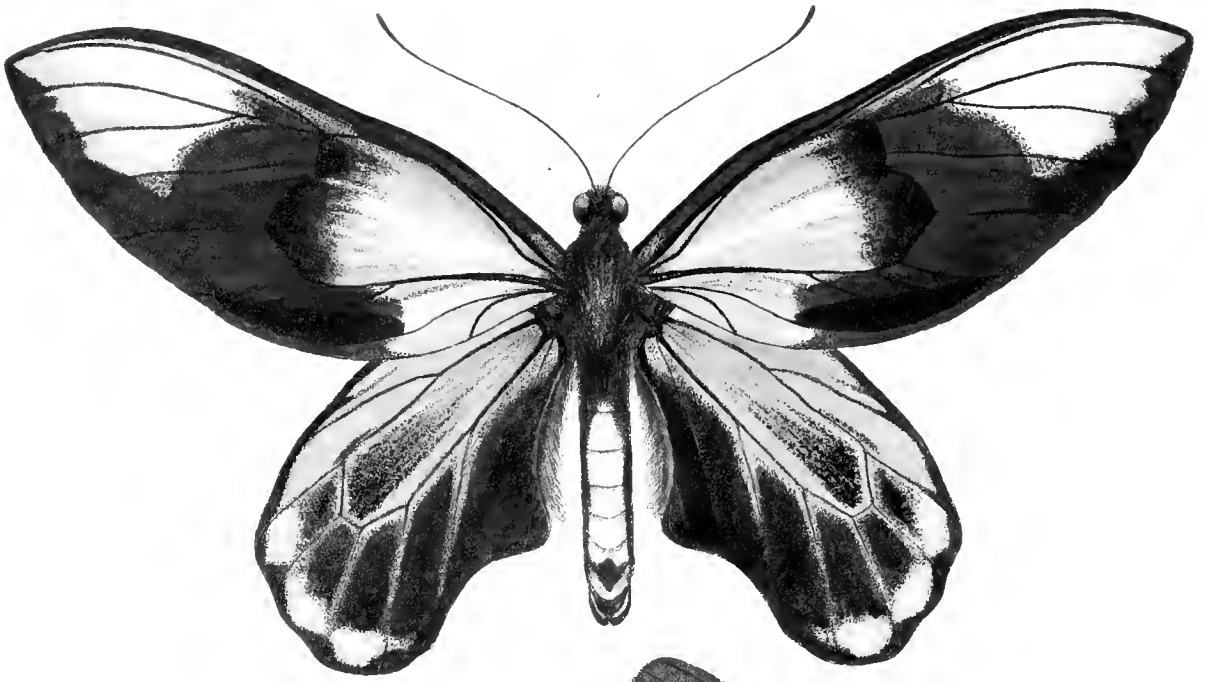
Special attention has been given to some groups of African *Lycanidae*, which have been comparatively neglected by previous authors. No doubt many new species of these and allied groups yet remain to be discovered.

The Plates comprised in the first portion of this Volume were drawn by Mrs. Monteiro, and we regret that she was compelled by the failure of her health to relinquish the task, which has since been continued by Miss Horman Fisher.

The greatest care will continue to be used, with the object of ensuring the accuracy of the Figures and Descriptions in the forthcoming Parts of this work, and it is trusted that they will be fully equal to the first volume both in interest and execution.

H. GROSE SMITH.
W. F. KIRBY.

LONDON,
April, 1892.



LEPIDOPTERA
: ORNITHOPTERA : AETHEA

PAPILIONIDÆ.—PAPILIONINÆ.

ORNITHOPTERA. I.

I.—ORNITHOPTERA VICTORIÆ. Figs. 1, 2.

Ornithoptera Victoria, Gray, *Proc. Zool. Soc.*, 1856, p. 7, pl. xxxix. ; Henley Grose Smith, *Ann. Nat. Hist.*, (5) xix., p. 445 (1887).

Male. **UPPERSIDE.** Anterior wings velvety black, the basal three-fourths of the cell, and two-thirds of the space beneath the cell to the inner margin, golden green. Towards the apex is another large patch of golden green, triangular, the base of the triangle being just below the first discocellular nervule; between the basal and apical patch of colour is a brownish-black sericeous space. Posterior wings velvety black; the space between the costa and the cell, the basal part of the cell, and the basal part of the median nervules, green; three submarginal oval golden-green spots between the nervules, the first being situate below the second subcostal nervule, each of the two lower spots being centred with a bright orange ovate spot; the rest of the wings, except the fold, more or less irrorated with green; the abdominal fold only extends down two-thirds of the wings, causing the appearance of an excavation at the anal angle of the wing.

Both wings are comparatively narrow; the cell on the upper wings is very broad, and on the lower wings is elongated.

UNDERSIDE, both wings golden green; anterior wings, costa and nervures, black; an irregular black patch towards the upper part of the end of the cell, and beyond it, with a few scattered green scales and four submarginal lunular black spots between the nervules; the space above the inner margin almost as far as the cell devoid of scales, and brownish-grey. Posterior wings with elongated or ovate black spots at the ends of the nervures, and two orange spots near the margin as on the upper side.

Anterior margin and nervures narrowly black.

Head, thorax, and antennæ, black. Abdomen, ochraceous; a row of black spots on each side.

Expanse of wings, $6\frac{1}{5}$ th inches.

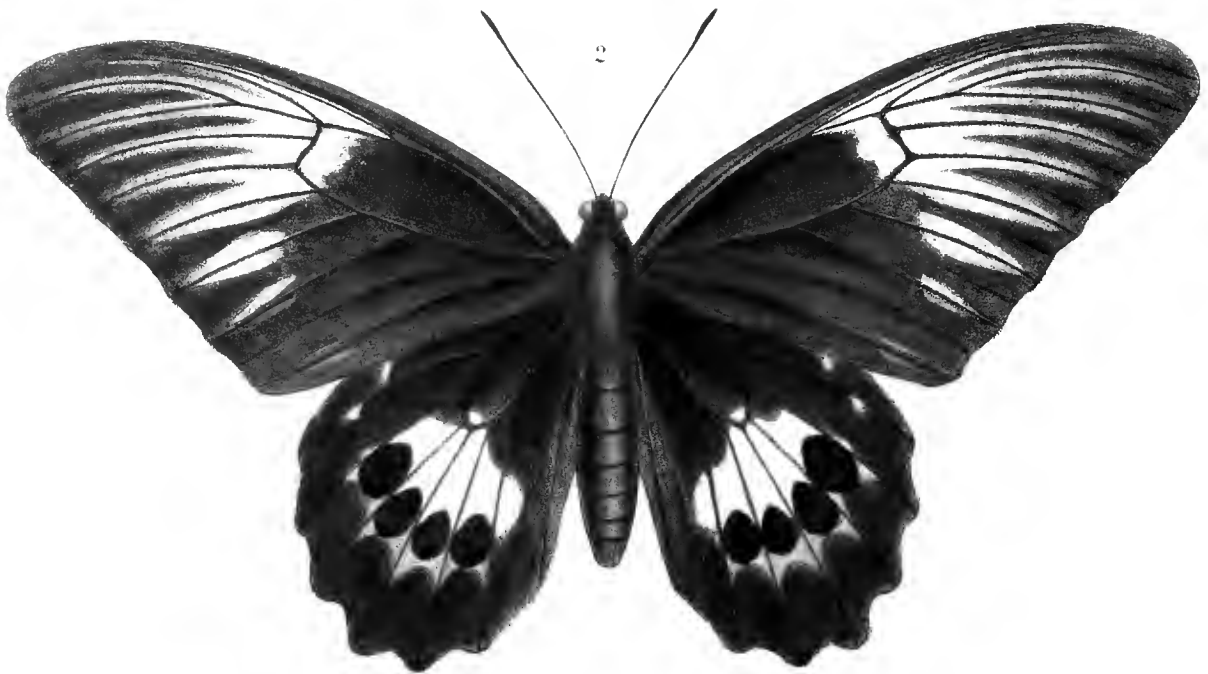
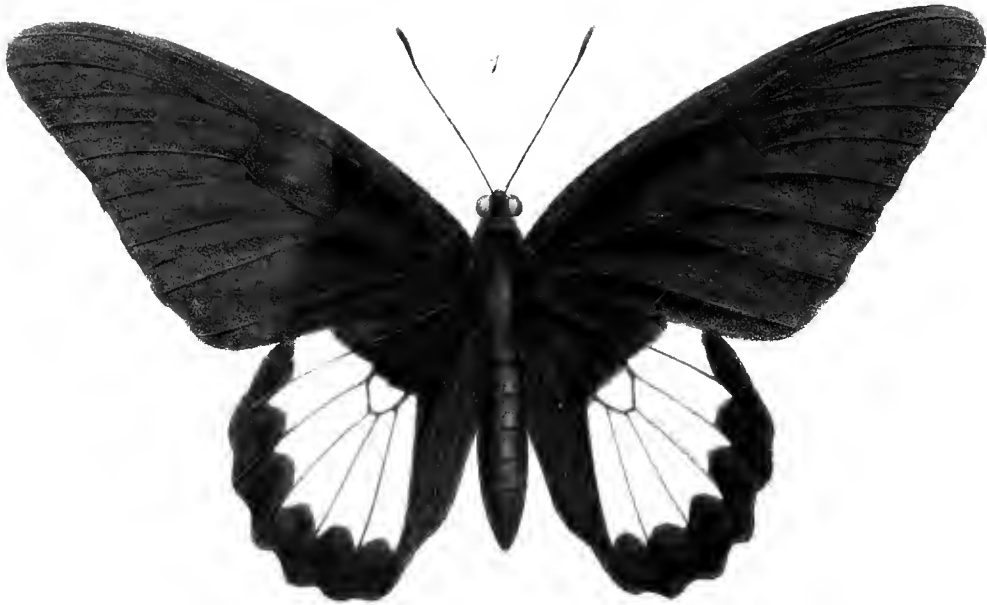
Two males of this extraordinary and gorgeous insect have recently been sent to England by Mr. Woodford, one of which is here figured, and the other is in the Collection of Messrs. Goldman and Salvin.

Mr. Woodford captured them in the Island of Malayta, one of the Salomon Islands, with several females, flying at the tops of trees, where he was obliged to shoot them.

A specimen of the female has been in the British Museum for upwards of thirty years, and is described, and the upperside figured, in the "Proceedings of the Zoological Society," 1856. An underside of the female is here figured for the first time.

In the Collection of Heuley Grose Smith.

The male somewhat resembles *O. Tithonus*, De Haan, but is still more remarkable in form and markings.



1 ORNITHOPTERA RIEDELI, ♂
2 " " " ♀

PAPILIONIDÆ. PAPILIONINÆ.

ORNITHOPTERA. II.

II.—ORNITHOPTERA RIEDELI. FIGS. 1, 2.

Ornithoptera Riedeli, Kirsch, "Proceedings of the Zoological Society of London," 1885, p. 275, pl. 19, figs. 1, 2.

Exp. $5\frac{1}{4}$ to $6\frac{1}{4}$ inches.

Male. UPPERSIDE silky-black, posterior wings with a deep golden-yellow band, running from the costa nearly to the inner margin, and divided into seven spots by the nervures, one of which is placed within the extremity of the cell. Of the remaining six, that on the costa is obliquely narrowed on each side in front; spots two and three are twice as long as this, and of about equal length; each of the others is rather longer than that before it, and all, except the costal spot, are deeply concave on the outside between the nervures. The fold is very conspicuous, and is filled with long grey wool, and the inner margin is fringed with long black hair.

UNDERSIDE similar, but the anterior wings are of a less deep black, and towards the hind margin the black nervures are broadly bordered on both sides with grey scaling. Incisions slightly marked with grey.

Body black, collar narrowly red, the sides of the thorax mostly bordered with red below the wings; abdomen banded with yellow beneath, and with slight traces of reddish markings on the sides.

Female. UPPERSIDE. Anterior wings brownish-black. The extremity of the cell is filled up by a greyish-white blotch, and the spaces between the nervures above and beyond are likewise greyish-white. Towards the apex of the wing these bifurcate, forming a series of whitish borders to the black nervures, the series of which is continued along the inner margin; but shades into grey on the outer side, both towards the apex and towards the inner margin. Fringes almost continuously grey.

Posterior wings with the yellow band less golden than in the male, and much narrower; the spot at the extremity of the cell very small, the spot nearest the costa very small or obsolete (sometimes present on one side only).

and the spot nearest the inner margin grey. Between the band and the hind margin is a rather irregular row of yellow spots, extending from the costa almost to the inner margin. Towards the costa the spots are wide apart, but towards the inner margin they are duller-coloured, and partially connected into an irregular festooned band between the nervures. Incisions grey.

UNDERSIDE similar. Posterior wings with the last spot yellow, and the outer series of yellow spots and markings larger, yellower, and on the lower half of the wing more connected, so as to give the appearance of a wide yellow band with a series of oval and mostly connected black spots on its outer side.

Body black, collar red, sides of the thorax very distinctly marked with red below the wings, abdomen reddish on the sides (and perhaps wholly red above in fresh specimens), its undersurface with the sides bordered with golden-yellow; the hinder segments broadly bordered with yellow behind; and the subterminal segment intersected by a yellow stripe.

Hab. Timor Laut (Riedel).

In the Collections of the Dresden Museum and of Henley Grose Smith.

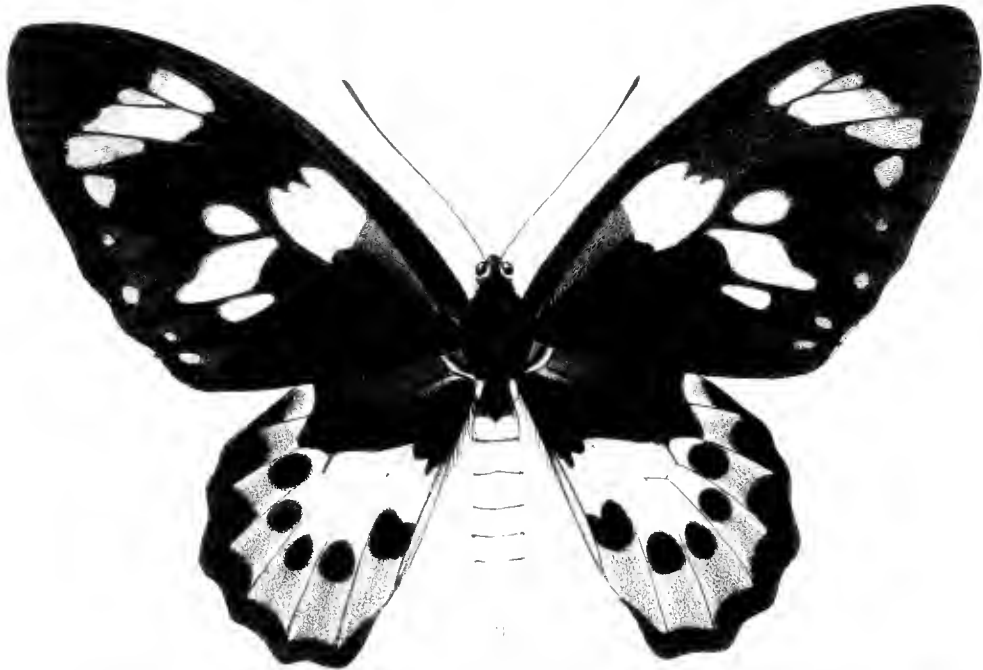
Most nearly allied to *O. Dorsius*, Gray, from Ceylon, but in *O. Riedeli* the yellow band is deep golden-yellow, not light yellow, and much broader, especially in the male, while in the female the submarginal markings on the hind wings are much more scanty and ill-defined, besides numerous other differences in contour and coloration.

The male of this species has been figured before, but on a much reduced scale; we therefore do not hesitate to commence our second volume with full-size figures of both sexes of this scarce and handsome butterfly.

ORNITHOPTERA. III.
SCHOENBERGIA.



1



2

1. Schoenbergia meridiani

2. Schoenbergia meridiani

1. SCHOENBERGIA. MERIDIANI. LEECH. ♂
2. " " " ♀

PAPILIONIDÆ.—PAPILIONINÆ.

ORNITHOPTERA. III.

SCHOENBERGIA.

III.—SCHOENBERGIA MERIDIONALIS. ♂. FIG. 1. ♀. FIG. 2.

Troides Paradiseus Meridionalis, Rothschild, "Novitates Zoologicae," Vol. IV., p. 180, ♀. "Novitates Zoologicae," Vol. VI., p. 429, ♂.

Exp. ♂. $4\frac{1}{2}$ inches. ♀. 5 inches.

Male. UPPER SIDE. "The forewing is narrower than in *S. Paradiseus*, Staudinger, its distal margin nearly straight; the anterior green streak is narrower, the posterior one wider, entering the cell and distally running up to the anterior one. On the UNDERSIDE the forewing has a broad black band, beginning at the costal margin before the middle of the cell, running to upper angle of cell and thence to the disc, being distally limited by veins R^1 and R^2 ; the yellowish-green scaling between these veins reduced to two small submarginal spots; the yellowish streaks between the subcostal also reduced, the apex of the wing being black, with an ill-defined green streak of dispersed scales between SC^3 and SC^4 and a few more green scales behind SC^4 .

"The hind wing of *Meridionalis* is more reduced in size than that of *Paradiseus*, narrower, the distal margin is gently concave, the tail is shorter, not gradually narrowing to the tip, but dilated before the apex, . . . the anal angle is not produced; the fringe of hairs upon the abdominal fold is much longer and not so dense. In neuration . . . the cell is much narrower in *Meridionalis*, R^3 and M^1 come from the cell, while in *Paradiseus* they are stalked together. The pattern of the wing is also very peculiar. The black distal border of *Paradiseus* is in *Meridionalis* indicated only at the extreme edge of the wing; veins all yellowish-green, a narrow outer border to wing and a broader streak from near base to tail in front of submedian fold also yellowish-green; abdominal area up to submedian fold black, with a yellowish-green streak at basal edge, and

another, more distal, streak of dispersed scales gradually disappearing distally ; the golden yellow area divided by the green veins ; cell all golden yellow."

"Femora as in ♀ not striated with yellow, tibiæ broader than in *Paradiscus*."

"*Female*. The markings on the disc of both wings purer white, being less dusted over with black scales than in *Paradiscus Paradiscus*. The patch in the cell of forewing is nearly straight at the basal side, its basal edge being very feebly dentate, while at the apical side it bears one deep triangular notch. . . . There are three discal patches. . . . The light area of the hind wing is much extended . . . the apex of the cell bearing a large white patch which is obliquely cut off. The portion of the light area outside the discal black spots is brighter yellow than in *Paradiscus*, and so is the upperside of the abdomen."

Hab. British New Guinea. The male and one female were captured by Mr. A. S. Meek at Milne Bay, and the type female by Mr. Anthony in the Mailu district.

In the Collection of the Hon. Walter Rothschild. I am indebted to Mr. Rothschild for the privilege of publishing the Figures of this very remarkable and beautiful species, and also for the above extract from his descriptions of both sexes.



Graphium agestor (Linn.)

Graphium agestor (Linn.)

PAPILIONIDÆ.—PAPILIONINÆ.

ORNITHOPTERA. IV.

IV.—ORNITHOPTERA GOLIATH VAR. TITAN ♂.

Ornithoptera Arruana ab. *Goliath* ♀, Oberthür, "Et. d'Ent.," XII., p. 1, n. 2 (1888); "Et. d'Ent.," XIX., p. 1, t. 4, f. 19 (1894) (Waigen ?, Dorey ?).

Troides (Ornithoptera) Schonbergi, Röber, Ent. Nachr., XXII., p. 289 (1896).

Troides Supremus, Röber, Ent. Nachr., XXII., p. 292 (1896).

Troides Elisabethæ Regina, Horváth and Mocsáry, "Termes. Fuzetek," Vol. XXII., p. 114; Vol. XXIII., p. 161 (1900).

Ornithoptera Titan, H. Grose-Smith, "Annals and Magazine of Natural History," Ser. 7, Vol. VI., p. 389 (October, 1900).

Exp. $7\frac{3}{4}$ inches.

Male. UPPERSIDE. Anterior wings black, with a broad yellowish-green band extending along the costa and partly invading the cell, narrowest at the base, but becoming wider in the middle and tapering towards the apex, which it does not reach; on the disc from the base and thence below the median nervure to the inner margin is a yellowish-green triangular area, the apex of which is a little above the lowest discoidal nervule; this green area, between the median nervules, does not extend to the median nervure, nor does it reach the outer margin; there is no stigmatic band as in the *O. Priamus*, Linn., group. Posterior wings golden-yellow, with a black outer border, which is narrow along the costa and becomes wider at the apex; the outer edge of the yellow area is golden-green, which colour extends inwardly along the veins; beyond the yellow area, which extends rather beyond the lowest median nervule, to the inner margin the wings are jet-black, the abdominal fold, which is bordered basally by golden scales, being very wide; on the disc towards the apex in the yellow area between the veins are three large oval golden-green patches, in the upper part of each of which is a black spot.

UNDERSIDE. Anterior wings golden-green, the costal, outer, and inner margins broadly black, the veins black; on the disc between the veins is a row

of four rather narrow black lunules, with an indication of a fifth between the lowest median nervule and submedian nervule. Posterior wings golden-yellow, with a golden-green submarginal and inner-marginal area, the latter very wide; three large oval black spots on the disc, the uppermost subapical, the two others on either side of the discoidal nervule; outer margin narrowly black; abdominal fold pale buff, with long hairs of the same colour.

In shape the anterior wings are very broad, less produced at the apex than in the *O. Priamus* group; posterior wings convex and rather truncate at the anal angle. Antennæ, thorax, and legs black; abdomen yellow, with small black spots on either side, the last segment of the abdomen black; orbits white.

Hab. New Guinea.

In the Collection of Mr. Grose-Smith.

This magnificent butterfly was sent in a collection stated to be from New Guinea (collector unknown). The rest of the collection is in very bad condition. I conjecture, however, from the series of species contained in it that the insects may have been captured towards the southern end of British New Guinea.

The absence of the stigmatic band on the anterior wings separates it from the group of *O. Priamus*, and the shape and neuration of the wings from the *Schoëbergia* group.

A new genus should be created for this species.

The variety here figured differs from the Plates given by Messrs. Horváth and Mocsáry, principally in the more restricted area of the triangular golden-green patch on the anterior wings, which in my variety does not extend to the median nervule between its branches, and differs on the posterior wings in having black spots in the golden area on the *upperside* of the disc, and there are other minor differences; it also appears to be one inch longer in the expanse of the anterior wings, but possibly the Figures of Messrs. Horváth and Mocsáry have been reduced in size.

There can be no doubt that the male of *O. Goliath* resembles the specimen here figured, but whether my specimen or that figured by Messrs. Horváth and Mocsáry (which was taken in copulâ) is the true form I am unable to decide.

PLATE I
PAPILIONIDAE



PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. I.

I.—PAPILIO FORBESI. Figs. 1, 2.

P. Forbesi, Henley Grose Smith, *Entomologist's Monthly Magazine*, xix., p. 234 (March, 1883); Forbes, "Naturalist's Wanderings," p. 275 (1885).

"UPPERSIDE. Dark brown, almost black, the margins between the nervures with lunular white spots; very narrow on the anterior wing; much broader on the posterior wing, which is without tails. Anterior wings with longitudinal rays on each side of the nervures, of light brown, extending from the middle to the exterior margin. Posterior wing with a row of three brownish-grey lunular spots between the median nervures, and a spot at the anal angle, above which is a row of three small faintly marked spots of same colour.

"UNDERSIDE. Anterior wings rayed as above, but paler. Posterior wing with a longitudinal red spot at the base, divided by the precostal nervure, which is black, and a small red spot below the costal nervure; a broad band of ochreous-yellow with a row of black spots in the middle, extending across the wing between the median nervures, and a small spot of ochreous-yellow beyond; a black spot at the top of the band next the anal angle; three blue spots near the exterior margin from the costal nervure to the median nervure.

"Exp. 4 inches. Hab. Bandang Agang, Sumatra (Forbes).

"In the Collection of Henley Grose Smith.

"This species belongs to the *Memon* group, in which, however, there is nothing which resembles it."—(H. G. S., in *Entomologist's Monthly Magazine*, l. c.).

Described from two male specimens, almost identical in colour and markings. It is, perhaps, most nearly allied to *Papilio Lamproscus*, Boisd. The red spot at the base of the hind wings is not completely divided by the curved black stripe which runs up along the precostal nervure.

II.—PAPILIO DIOPHANTUS. Figs. 3, 4.

P. Diophrantus, Henley Grose Smith, *Entomologist's Monthly Magazine*, xix., p. 234 (March, 1883).

"UPPERSIDE. Dark brown. Anterior wing broader and not so curved on the costal margin as in *P. Helenus*, which it resembles on the upperside. Posterior

wing with a tail more spatulate than in *P. Heleus*, and tipped with cream-colour, marked from the costal margin to the third branch of the median nervule by a large cream-coloured spot, divided by the nervures into four parts, the lowest much smaller and more lunular than the other three parts.

“UNDERSIDE. Anterior wing with longitudinal rays of pale brown, narrowing from the centre of the wing to the interior margin to a band of same colour as the spot. The posterior wing has at the base of the costa, and between the costal and subcostal nervures, two broad lines of red, the latter nearly twice as long as the former, the large spot as above continued across the wing to the inner margin by a narrow band of lunular spots of same colour; there is a small spot of same colour at the anal angle, and another at the tip of the tail; the lunular spots between the nervures on the margin are more strongly marked than on the upperside.

“Exp. $4\frac{1}{4}$ inches. Hab. Sumatra (Bock).

“In the Collection of Henley Grose Smith.”

(H. G. S., in *Entomologist's Monthly Magazine*, *l. c.*).

The specimen above described is a female. The male (the underside of which is figured) has the cream-coloured spot faintly continued on the upperside as far as the submedian nervure, and on the underside it is narrower at the inner margin. The white fringe at the tip of the tail in the female is reduced in the male to a white dot in the middle.

PLATE I
 PAPILIONIDAE

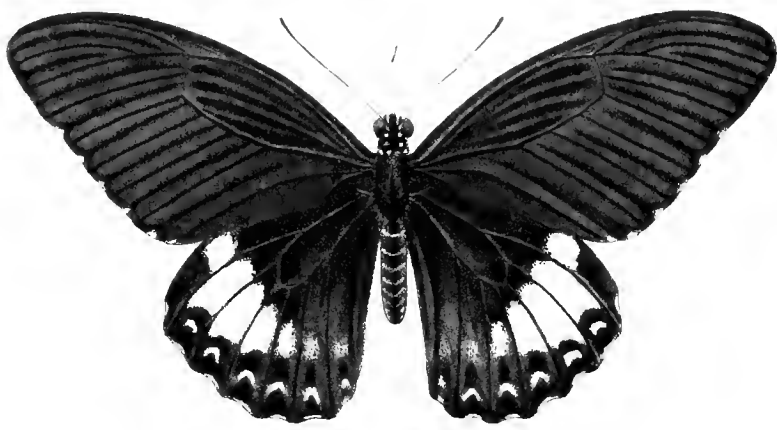
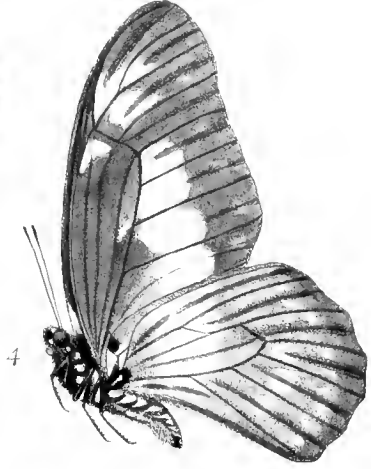
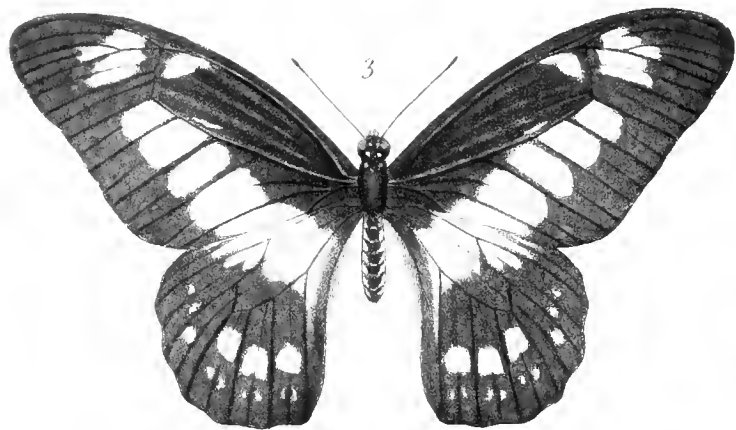
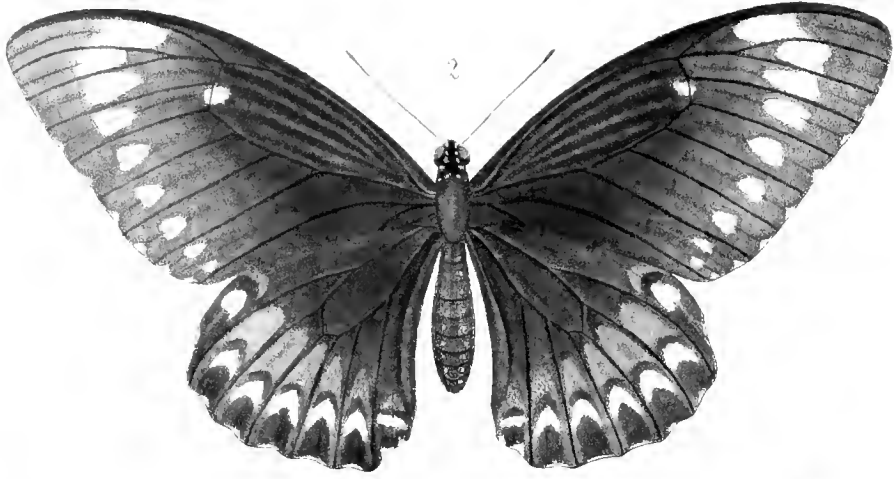


PLATE I. PAPILIONIDAE. FIGURES 2, 3, 4, 5.

FIGURE 2. PAPILIONIDAE. ♂. FIGURE 3. PAPILIONIDAE. ♀. FIGURE 4. PAPILIONIDAE. ♂. FIGURE 5. PAPILIONIDAE. ♀.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. II.

III.—PAPILIO MEHALA. FIG. 1 ♂; FIG. 2 ♀.

Papilio Mehala, Henley Grose Smith. "Ann. and Mag. Nat. Hist.," ser. 5, vol. 18, p. 150 (1886).

Exp. 4 to 5 inches.

"*Male*. UPPERSIDE dark brown, irrorated with ferruginous scales. Anterior wings with a minute white spot at the end of the cell, also on the margin at the ends of the discoidal and median nervules. Posterior wings irrorated in the region of the anal angle; beyond the middle is a band of seven spots, the spot on the costal margin creamy-white, nearly square; the second, third, fourth, and fifth the same colour, elongated, the third being the longest; the second, third, and fourth lunulated externally; the fifth smaller, and the sixth and seventh still smaller, and pale brown; six small submarginal humular spots and a small spot on the outer margin, the four nearest the anal angle pale brown, the others white; the margin between the nervures white.

"*UNDERSIDE*. Anterior wings irrorated, as above, towards the apex, paler, the spot at the end of the cell larger, and a double row of minute white spots on the margin. Posterior wings, the spots are whiter, the band smaller, and the submarginal row larger.

"This butterfly belongs to the *Castor* group.

"*Habitat*. Toungoo, Burmah.

"In the Collection of Henley Grose Smith" (H. G. S., *loc. cit.*).

On the hind wings beneath there are five submarginal humular or sagittate spots, followed by two small spots, one at the anal angle, and one just above it; just within the latter is a still smaller white dot. The body is black, dotted with white; the abdomen is marked with a double row of white dots.

Female. UPPERSIDE brown, darkest at the base; anterior wings with the cell longitudinally striated with dark brown and obscure reddish; this is also visible, though less distinctly, in the male. A submarginal row of nine spots running from the costa to the inner margin. That nearest the costa is the

largest, and is set nearer the base than the rest; most of the spots are conical, and (except the two last, which are above the anal nervure) are separated by the nervures. At the end of the cell is a large white spot, divided by the lower discocellular nervules, and the hind margin is marked with seven small white spots, opposite the lower seven of the submarginal row, and diminishing from the anal angle. Posterior wings subdentate, with seven submarginal creamy-white spots, that nearest the costa heart-shaped, that nearest the anal angle linear, and the intermediate ones sagittate; within these is a row of conical spots, concave at the broad end, and formed of dull greenish scaling; those towards the anal angle are very obscure; the incisions are marked in the middle with linear white spots; towards the anal angle are two small spots, opposite the last linear submarginal spot; the first triangular, the second round.

UNDERSIDE nearly similar, but the submarginal spots of the anterior wings shorter and more regular, and the white spot at the end of the cell longer, forming two isosceles triangles connected by their bases at the lower discocellular nervule; body black, spotted with white; the orbits almost entirely surrounded with white.

Hab. Toungoo, Burmah (Dr. Nichol).

In the Collection of Henley Grose Smith.

IV.—PAPILIO FULLERI. Figs. 3, 4.

Papilio Fulleri, Henley Grose Smith, *Entomologist's Monthly Magazine*, xix., p. 234 (1883).

Exp. $3\frac{3}{4}$ inches.

Male. * UPPERSIDE dark brown. Both wings crossed from near the middle of the anterior wing to the inner margin of the posterior wing by an irregular band of olivaceous-yellow spots; five on the anterior wing distinct, those on the posterior wing confluent, intersected by the nervures. Anterior wing with three spots towards the apex, the middle spot the smallest, the other two spots bifid; a spot within the cell next the subcostal nervure, and near the upper discocellular nervule. Posterior wing with a row of ten small spots in pairs near the outer margin, and three larger spots between the median nervules. All the spots of same colour as the band.

* UNDERSIDE as above, but much paler, and tinged with red from near the centre, deepening towards the base. Posterior wing with a round black

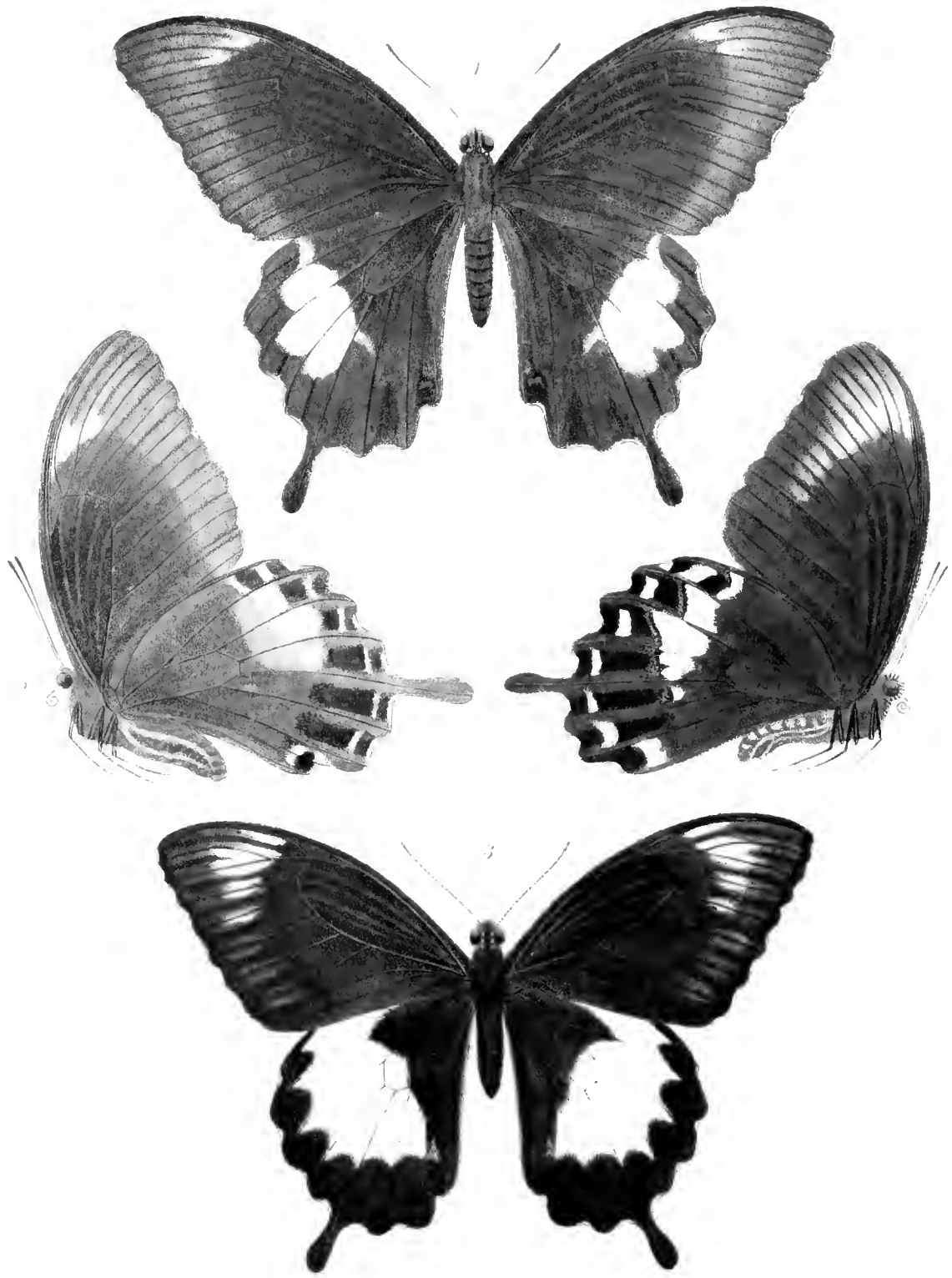
spot on the precostal nervure; a black line between the costal and subcostal nervures, and a black spot at the base.

“Hab. Cameroons (Fuller).”

“In the Collection of Henley Grose Smith.”

“This species is between *Latreillianus*, Godt., and *Ucalygon*, Hew., but is distinct; from the former principally in the colour of the spots and the markings on both sides of the posterior wing; from the latter in the situation of the spot in the cell, and in the double row of spots round the outer margin of the posterior wing.” (H. G. S., *loc. cit.*)

The anterior wings are marked with submarginal paired spots, but much less distinctly than on the posterior wings. Most of the large spots on the same wings are of an irregularly oval form, and about twice as long as broad. The inner margin of the hind wings is fringed with long yellowish hairs. Head and thorax black, dotted with white; the abdomen is black, with short lateral transverse whitish stripes; under surface yellow, with a black longitudinal stripe on the basal half on each side; legs black, whitish beneath.



Ms. B. 11. 11. 11.

FIG. 1. DORSAL VIEW.
 FIG. 2. L. V. WING.
 FIG. 3. R. V. WING.
 FIG. 4. VENTRAL VIEW.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. III.

V.—PAPILIO INDICATUS. ♀. FIGS. 1, 2.

Papilio Indicatus, Butler, "Annals and Magazine of Natural History," ser. 4, vol. 18, p. 248, n. 92 (1876).

Exp. $4\frac{1}{2}$ inches.

UPPERSIDE brown, fore wings darkest for three-quarters of their length from the base, and with two pale spots just below the costa at the extremity of the dark part of the wing, the upper one bifid, and the lower one placed a little beyond it; incisions of all the wings cream-colour. Hind wings with a large greenish-white spot in their upper and outer half, divided into three by the nervures, throwing off a small curved streak to the costa, and another short streak in the direction of the anal spot, which consists of an orange lunule indistinctly surrounded with blackish. Between this and the last cream-coloured mark are two patches of scattered blue scales.

UNDERSIDE paler brown, fore wings with the pale subcostal spots whiter; hind wings with the greenish-white spot represented by three much smaller, whiter, and more separated spots, corresponding to its outer portion; there is also a white lunule on the costa, and a row of six yellowish submarginal dashes, within which are obsolete blackish spots, extending nearly to the white markings on the upper half of the wing, and to the bluish dusting (which is more distinct than on the upperside) on the lower half; the anal markings are more distinct than above, and the incision below the black spot is marked with an irregularly triangular white spot, slightly surmounted with yellow.

In the Collections of the British Museum and of Henley Crose Smith, from New Guinea.

The species varies a little in the extent of the pale markings, and in the specimen here figured all those on both surfaces of the hind wings are larger than in either of the type specimens in the British Museum, both of which are likewise females.

VI.—PAPILIO BICOLOR. FIG. 3 ♂; FIG. 4 ♀.

Papilio Bicolor, Kirby, "Annals and Magazine of Natural History," ser. 5, vol. 19, p. 361 (1887).

Exp. about $4\frac{1}{2}$ inches.

“UPPERSIDE black, fore wings with a white band at three-fourths of their length, extending from the costa to two-fifths of the width of the wing, and composed of a series of linear or subbid stripes: hind wings tailed, with a broad white band of a slightly creamy or greenish shade, commencing on the outer half of the costa, which it nearly covers in the male, though narrower at this point in the female; it is then indented within in the male, and curved outwards towards the cell in the female; basally it covers the extremity of the cell, and then curves towards the anal angle, before reaching which it ceases; on the outer side this pale band is greatly indented, especially on its upper portion.

“UNDERSIDE: fore wings with the series of subapical stripes extending from the costa larger and more numerous, but, except the basal part of the upper one, consisting only of grey dusting; the pale band on the hind wings is reduced to five white spots running from the costa, corresponding to the outer part of the band; the first and last are simply lunules, and the three middle ones are deeply indented on the outside, and are followed by blue dusting; towards the anal angle are two yellow spots, that nearest the base rounded, and that beyond the white spot in the anal incision linear; in the female there is also a submarginal row of linear yellow spots on the under surface of the hind wings.

“Eyes partly surrounded with white; incisions of the abdomen white.”
(W. F. K., *loc. cit.*)

In the Collection of Henley Grose Smith, from New Guinea.

PAPILIONIDÆ.

PAPILIO.4



Rose Monteiro del et lith 1888

Hanhart imp

1,2 PAPILIO SULON 3,4 PAPILIO MENDANA.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. IV.

VII.—PAPILIO SOLON. ♂. Figs. 1, 2.

Papilio Solon, Godman and Salvin, "Annals and Magazine of Natural History," ser. 6, vol. 1, p. 213 (March, 1888).

Male. Allied to *P. Codrus*, but with the upperside of both wings of a darker glossy-green hue, and with the spots of the anterior wings of a brilliant bluish-green, much as in *P. Sarpedon*. The posterior wings are whitish at the base, the outer margin of this colour being more sharply defined than in the allied species.

UNDERSIDE much darker than in *P. Codrus*, and there are indistinct transverse bands towards the costa of the anterior wings.

Female larger than the male, and the wings without the silky-greenish gloss.

HAB. Aola, Guadalecanar Island, Solomon group (C. M. Woodford).

In the Collections of Henley Grose Smith and Messrs. Godman and Salvin.

The Solomon Islands contain at least one other species of *Papilio*, of the *P. Codrus* group, an allied species, *P. Pisidice*, being found in Malaita I. The latter differs in having the spots of the anterior wings of a golden hue, very different from the colour of those of the present species when the two are compared, but in its general appearance *P. Solon* resembles *P. Codrus* more than any other of this group. *P. Seymour*, of New Ireland, approaches it in the beautiful silky-green gloss of the wings. That species, however, may at once be distinguished by the band of spots of the anterior wings being interrupted, there being none near the branches of the median vein.

Mr. Woodford's second Collection from the Island of Guadalecanar contained a good series of specimens of both sexes of this *Papilio*.—O. S.

VIII.—PAPILIO MENDANA. ♀. Figs. 3, 4.

Papilio Mendana, Godman and Salvin, "Annals and Magazine of Natural History," ser. 6, vol. 1, p. 212 (March, 1888).

Male. UPPERSIDE. Anterior wings produced and slightly falcate, the outer margin slightly concave, posterior wings tailed, the median vein being produced and bearing a lobe. Wings black, anterior wings with a median row of bluish isolated spots, commencing with a large one on the proximal half of

the interior margin, and gradually diminishing towards the apex; a small spot near the costa, just above the second from the apex, and a submarginal row of small spots of the same colour; posterior wings with nearly the entire cell, a large spot between the median branches, and a small triangular spot between the median vein and its second branch bluish, like the spots of the anterior wings; three small spots above these and the inner margin white.

UNDERSIDE dark brownish-black, the spots of the anterior wings as on the upperside, but rather larger; there are also some indistinct pale marks on the costa, and a small scarlet spot at its base; posterior wings clouded with black spots between the veins beneath the costal vein, and near the inner margin two-thirds of its length from the base are scarlet spots.

Exp. 4.3 inches.

Female like the male, but larger, the wings being less falcate, and the spots of the anterior wings rather larger, those on the posterior wings being nearly white; on the underside there is an indistinct row of submarginal spots.

Hab. Aola, Guadalcanar Island, Solomon group (C. M. Woodford).

In the Collections of Henley Grose Smith and Messrs. Godman and Salvin.

This interesting *Papilio* was recently discovered by Mr. C. M. Woodford during his second expedition to the Island of Guadalcanar. In some respects it is allied to *P. Sarpedon*, having the wings marked with similarly coloured spots, but the colour of the underside and the shape of the posterior wings point to a relationship with *P. Codrus* and its allies. *P. Mendana* forms, in fact, a connecting link between the *P. Sarpedon* and *P. Codrus* groups of *Papilio*.—O. S.

PAPILIONIDAE
PAPILION



15 PAPHIA ACHERON

3,4 PAPHIA ADAMSONII

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. V.

IX.—PAPILIO ACHERON. ♂. FIGS. 1, 2.

Papilio Acheron, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 432 (December, 1887).

Exp. 4 inches.

Male. "UPPERSIDE. Wings bluish-black, slightly suffused with purple; margins between the nervures narrowly white; the posterior wings slightly irrorated with grey in the anal area.

"UNDERSIDE. Wings with markings as in my *P. Forbesi* [vide *antè*, *Papilio*, p. 1, pl. 1, f. 1, 2], except that the grey rays between the nervules on the anterior wings are less marked, the ochraceous band on the posterior wings does not extend beyond the upper median nervule, and the three blue spots near the exterior margin between the costal nervule and the discoidal nervule are less distinct; the white spots on the margins between the nervules are much narrower.

"Nearest to *P. Forbesi*." (H. G. S., *loc. cit.*)

Hab. North Borneo.

In the Collection of Henley Grose Smith.

X.—PAPILIO ADAMSONI. ♂. FIGS. 3, 4.

Papilio Adamsoni, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 18, p. 149 (August, 1886).

Exp. 4½ inches.

"UPPERSIDE. Anterior wings brown-black, darker towards the base, the nervures and rays between the nervures black. Posterior wings the same colour as the base of the anterior wings, paler towards the anterior margin, crossed beyond the middle by an irregular band of five rosy-white spots, the spot nearest the anterior margin cordate, the next three conical and lunulated

externally, the fifth spot at the anal angle nearly obsolete; below the band are three submarginal large spots, lunular, the innermost grey flushed with rosy-carmine, the middle spot grey, less rosy, the third the same colour as the band.

“UNDERSIDE. Anterior wings as above, but paler. Posterior wings with the band brighter, larger, more regular and curved, containing six spots, the spot on the anterior margin nearly square, the second the largest, and nearly divided by a black mark, the third, fourth, fifth, and sixth smaller, the spot near the anal angle bright carmine; the three submarginal lunular spots also larger, the two lowest bright carmine, the third brightly tinged with the same colour. Palpi and body carmine, the latter broadly striped with black.” (H. G. S., *loc. cit.*)

Hab. Burmah, on the Siamese frontier, near the Salween River.

In the Collection of Capt. Adamson, R.E., who captured it himself.

Nearest to *P. Aristolochiæ*, Fabr., but very distinct.



1. P. PAPILIO PRICES
2. 4. " ISANDER

W. & A. Thompson

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. VI.

XI.—PAPILIO PROCLES. Figs. 1, 2.

Papilio Procles, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 433.

Exp. $2\frac{1}{2}$ inches.

UPPERSIDE brown with green markings, as in *P. Bathycles*, Zinck. Anterior wings with only four spots in the cell, the second and third being almost obsolete; the three lowest spots of the discal series are confluent, and broader than in *P. Bathycles*. Posterior wings with the three discal spots larger, and confluent, instead of separated, and the wings are more deeply emarginate.

UNDERSIDE: anterior wings nearly as above, but the spots in the cell rather more distinct. On the posterior wings, the concave brown fascia which traverses the centre of the large silvery patch in *P. Bathycles* is replaced by a short narrow brown fascia, running from the costa nearly as far as the subcostal nervure, and almost divided on the costal nervure by a small orange-red spot. A small triangular silvery spot near the cell between the upper and second discocellular nervules. The dark brown area in which the series of orange-red spots towards the anal angle is situated is broader than in *P. Bathycles*, and the submarginal row of spots is further from the margin.

Hab. Kina Bahu Mountain, North Borneo (John Whitehead).

In the Collection of Henley Grose Smith.

XII.—PAPILIO ISANDER. ♀. Figs. 3, 4.

Papilio Isander, Godman and Salvin, "Annals and Magazine of Natural History," ser. 6, vol. 1, p. 211 (March, 1888).

Exp. $3\frac{4}{5}$ inches.

Male. UPPERSIDE. Wings black, anterior wings with a curved greenish-blue band extending from the apex to the inner margin, the upper portion broken

into spots, the lower portion entire. There is a costal spot of the same colour near the apex, and a series of small submarginal lunules becoming evanescent towards the anal angle. Posterior wings with a greenish-blue band through the cell continuous with that of the anterior wings, running towards the inner margin, the costal portion being white. A series of six submarginal lunules, those in the apical and anal angles white, the others greenish-blue.

UNDERSIDE nearly as above, but much paler; posterior wings with a short line near the base, and others on the disk, of a rich scarlet, broadly margined with black.

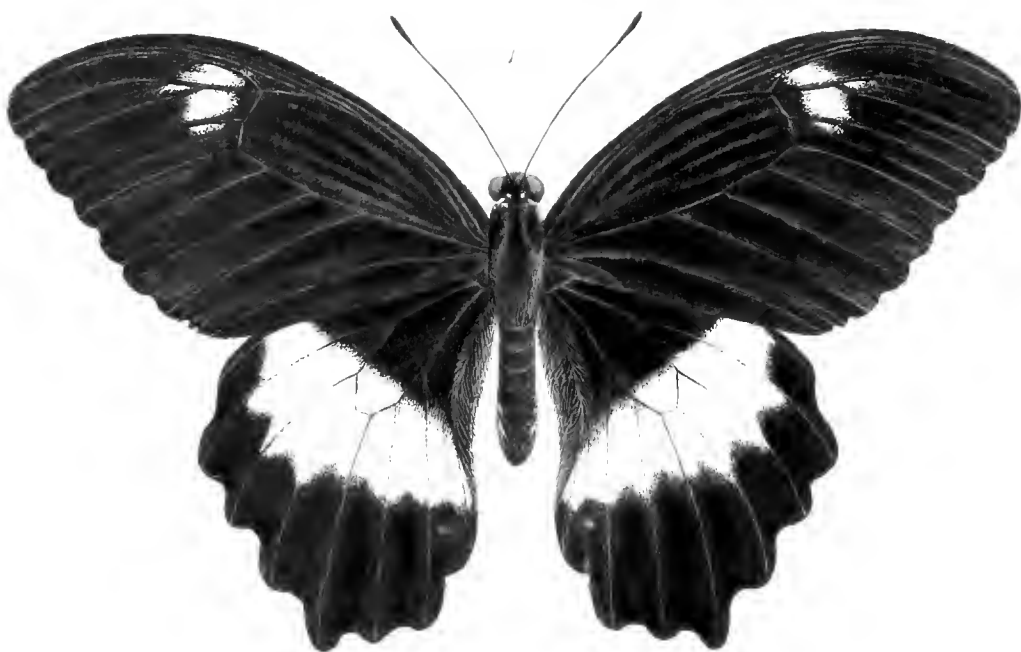
Female similar, but rather larger.

Hab. Aola, Guadaleamar Island (C. M. Woodford).

In the Collections of Messrs. Godman and Salvin, and Henley Grose Smith.

An ally of *P. Sarpedon* as to the colour of its wing-markings, but instead of having a single blue band on the anterior wings broken into spots in a regular curve towards the apex, the spot below the subcostal nervure is slightly out of line, and above it is another spot close to the costa; moreover, there is a series of lunate spots parallel to the outer margin as in *P. Euclyptus*.

P. Sarpedon in various modified forms occurs over a large area, including India, Borneo, &c.; the Moluccas and New Guinea, and under the name of *P. Choredon* in Australia and New Ireland. It is, therefore, of considerable interest to find so distinct a form in the Solomon Islands. [O. S.]



PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. VII.

XIII.—PAPILIO ARIEL. ♂. Figs. 1, 2.

Papilio Ariel, Henley Grose Smith, "Entomologist's Monthly Magazine," vol. 25, p. 393 (June, 1889).

Exp. $5\frac{1}{2}$ inches.

Male. UPPERSIDE. Both wings black. Anterior wings with a quadrate milky-white patch a little beyond the end of the cell, and another conical spot above it; a very short white line at the junction of the fourth and fifth subcostal nervules, and an indistinct white line below the quadrate patch. Posterior wings as in *P. Laarchus*, Godm. and Saly.; but the white band is narrower and less deeply serrated externally. The ferruginous spot above the anal angle in *P. Laarchus* is nearly obsolete in *P. Ariel*, and there is a minute white spot at the anal angle of the latter, which is absent in *P. Laarchus*.

UNDERSIDE. Anterior wings brownish-black, with three small and indistinct patches of whitish scales about half-way between the end of the cell and the apex; small triangular spots on the hind margin between all the veins; the small patch of white scales between the lowest median nervule and the submedian nervule in *P. Laarchus* is absent. Posterior wings crossed beyond the cell by a row of seven ill-defined, milky-white lunules, the two middle and the upper lunules almost obsolete; outside this row is a large ferruginous spot above the anal angle, followed between the veins by four patches of blue scales, the uppermost nearly obsolete, and at the apex an indistinct ferruginous patch; between the lowest median nervule and submedian nervule is a submarginal ferruginous patch; and there is a small white lunule at the anal angle.

Hab. Estrella Bay, Isabel Island, Solomon Islands. (C. M. Woodford.)

In the Collection of Henley Grose Smith.

This species differs from *P. Learchus** and *P. Ptolychus*, Godm. and Salv., in the smallness of the white patches on the anterior wings, and in the central row of white spots on the underside of the posterior wings. In *P. Ptolychus* there is a series of four white submarginal lunules above the posterior angle on the upper side of the anterior wings, which is wanting in *P. Ariel*; the white band on the posterior wings of *P. Ptolychus* is narrower, and does not enter the cell.

* These species, likewise from the Solomon Islands, are described in "Annals and Magazine of Natural History," ser. 6, vol. 1, pp. 99 and 214. *P. Learchus* will be figured on the next plate of *Papilio* in the present work.

PAPILIONIDÆ

PAPILIO VII



1. PAPILIO MARCHI S. 8

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. VIII.

XIV.—PAPILIO LAARCHUS. ♂. Figs. 1, 2.

Papilio Laarchus, Godman and Salvin, "Annals and Magazine of Natural History," ser. 6, vol. 1, p. 214 (March, 1888).

Exp. $5\frac{3}{4}$ to 6 inches.

Male. UPPERSIDE. Wings black, subdentate, incisions white. Anterior wings with a row of five white spots running obliquely at two-thirds of the length of the wing from below the third subcostal nervule to the second discoidal nervule, the first trapezoidal, the second conical, the third forming a long oval, broken on the outer side, and the fourth and fifth linear; towards the outer half of the inner margin a few scattered scales of the same colour. Posterior wings subcaudate, the middle third occupied by a broad white band, wider than in *Papilio Ariel*, ceasing at each end just before reaching the costa and inner margin; bounded towards the base just within the cell, and scalloped outside between the nervures; below it, above the anal angle, is a thick orange lunule, slightly paler towards the edges.

UNDERSIDE black; the incisions more distinctly spotted with white. Anterior wings with the five white spots larger than above, and an isolated spot of white dusting above the submedian nervure at three-fourths of its length. Posterior wings with the pale band of the upper side reduced to a very few scattered bluish-white scales, the only conspicuous one being just before the orange spot towards the anal angle. This spot is much larger than above, and mitre-shaped. Between the second discocellular nervule and the median nervules are three more irregularly lunular, submarginal orange spots, that nearest the anal angle largest, and the middle one the smallest. Orbits, two spots on the occiput, four on the back and sides of the prothorax, and more or less of the front of the tibiæ white; pectus with greyish markings.

Female. UPPERSIDE, resembles the male, but is of a browner black. On the anterior wings the oblique row of white spots is less marked, and on the

posterior wings the broad band is very slightly greenish, that portion of the band which lies between the costal and subcostal nervures being only represented by a few greenish-white scales; there is a second triangular orange spot, which is submarginal, situate between the lowest median nervule and the submedian nervure.

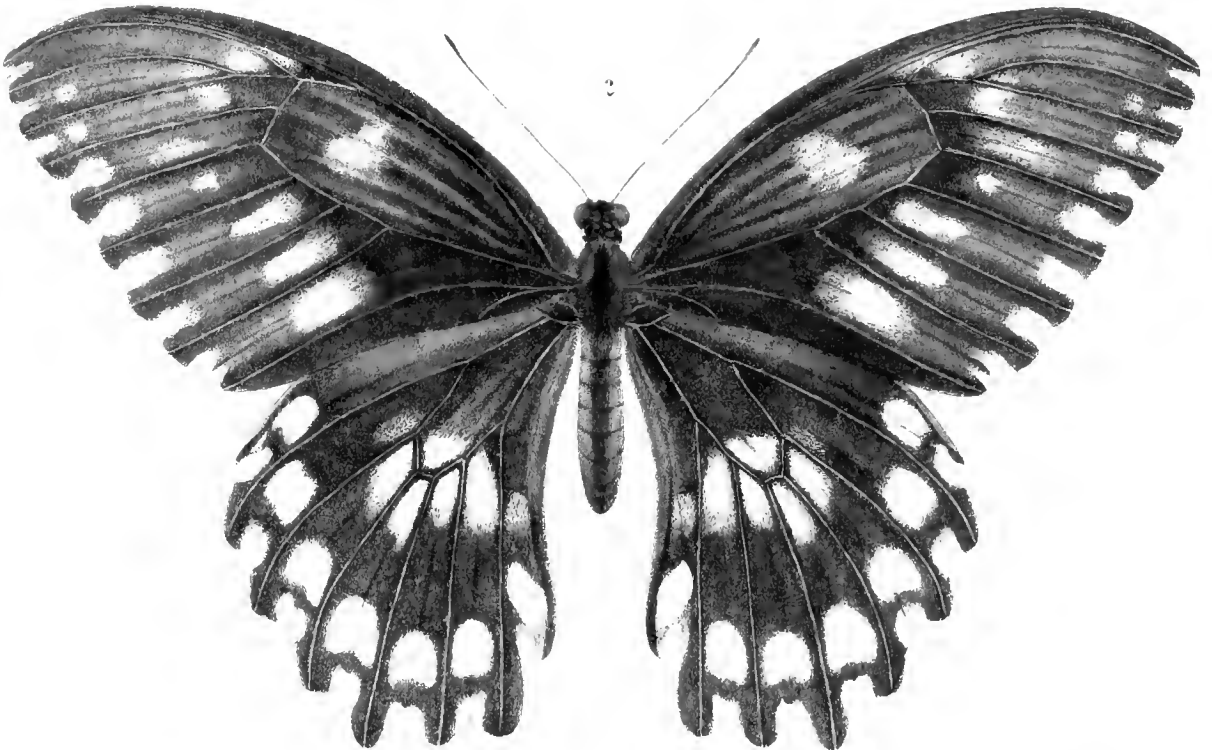
UNDERSIDE. On the posterior wings is a submarginal row of six conspicuous orange lunules, the lunule near the anal angle being the largest: the orange spot above the anal angle is very large, and is followed between the nervules, towards the middle of the wings, by two round clusters of bluish-white scales, that nearest the orange spot being the most conspicuous.

Hab. Rubiana Lagoon, Solomon Islands (C. M. Woodford).

The male is in the Collection of H. Grose Smith, and the female in the Collections of H. Grose Smith and Messrs. Goodman and Salvin.

PAPILIONIDÆ.

PAPILIO IX.



1 PAPILIO PRORSA, ♂.

2 " " " " ♀.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. IX.

XV.—PAPILIO PROSPERO. ♂. FIG. 1. ♀. FIG. 2.

Papilio Prospero, Henley Grose Smith, "Entomologist's Monthly Magazine," vol. 25, p. 302 (June, 1889)

Exp. ♂ $5\frac{1}{2}$, ♀ 6 inches.

“*Male*. UPPERSIDE. Both wings black. Anterior wings with an oblique, straight (not curved) subapical row of four milky-white spots, the first below the third subcostal nervule quadrangular, the second smaller, triangular, the third and fourth larger and more elongated, indented outwardly, the fourth sharply so; a short, narrow white line on the first subcostal nervule, nearer the base than the first spot; a large milky-white patch, indented outwardly, towards the posterior angle between the lowest median nervule and the submedian nervule. Posterior wings with a broad milky-white band, as in *P. Hecateus*, Godm. and Salv., but more deeply and sharply serrated outwardly than in that species.

UNDERSIDE. Anterior wings as above, but without the spot between the lowest median nervule and the submedian nervule. Posterior wings with three submarginal quadrate, ferruginous spots between the discoidal and median nervules, and an indication of another near the apex, a larger and brighter ferruginous spot above the anal angle, inside which, rather nearer the middle, between the discoidal and median nervules, are three patches of bluish-white scales.

“*Female*. UPPERSIDE resembles the female of *P. Hecateus*, but differs as under: Anterior wings: the patch in the cell and the discoidal row of spots are whiter, smaller, and less distinct, and the marginal spots between the veins are very much larger, whiter, and quadrate. Posterior wings: the central band of spots is much smaller, whiter, and indistinct, and extends only over the end of the cell, instead of over the outer two-thirds of it; the white patch on the abdominal fold is almost obsolete; the spots of the submarginal row are nearly double the size, white outwardly, shading into ferruginous inwardly; the white spot at the

anal angle is confluent with the spot above it; and the white marginal lunules between the veins are very much larger.

“UNDERSIDE as above, but more dusky; the central band of spots on posterior wings smaller and less distinct.” (H. G. S., *loc. cit.*)

Hab. Rubiana Lagoon, Solomon Islands (C. M. Woodford).

In the Collection of Henley Grose Smith.

The male differs from *P. Hecatens* on the upper side, chiefly in having on the anterior wings only an oblique, straight, subapical band of spots, and a spot near the posterior angle, instead of the curved row of spots which crosses the wings of *P. Hecatens*; and in other particulars which have been noted in the above description.

PHALANX
FAMILIA



M.S. Hancock imp

12 FAMILIA WOODFORDI. 3

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. X.

XVI. PAPILIO WOODFORDI. ♂. Figs. 1, 2.

Papilio Woodfordi, Godman and Salvin. "Annals and Magazine of Natural History," ser. 6, vol. 1, p. 100 (1888).

Exp. $5\frac{1}{2}$ inches.

Male. **UPPERSIDE.** Wings rather strongly dentated, dull black, with a common creamy white band beyond the cell, and the incisions spotted with white. On the anterior wings it extends from just beyond the origin of the third subcostal nervule to the inner margin; it is divided into long spots by the black nervures, and in its inner edge it forms two regular curves. Its outer edge is very irregular. The upper portion of the band beyond the cell becomes suddenly very narrow, owing to the outer half being reduced to mere scattered scales, while the white scaling is so thin on the long spot immediately below the narrow part, and on the inner side of the two next, as to make this part of the band appear grey rather than white. On the posterior wings the band is uniform in colour and scaling, and not divided by the nervures, which where they cross the band are white. Its inner side, which just crosses the end of the cell, is fairly regular; on the outer side, three long teeth are thrown out along the nervures nearest the costa, and a shorter one towards the anal angle; between the band and the anal angle is a small isolated white spot.

UNDERSIDE. Anterior wings dark brown, paler towards the hind margin, with the incisions marked with very distinct white triangular spots. Between the third subcostal nervule and the upper discoidal nervule is the commencement of a transverse band formed of scattered yellowish-white scales. Posterior wings darker brown, with rather broad white lunules on the incisions. Beyond the cell, between the first subcostal nervule and the inner margin, the wing is crossed by a series of six pale spots, formed of yellowish-white scales, between the nervures; the two middle lunules being almost obsolete, and that nearest the abdominal fold being semicircular. Below this last is a large orange blotch bordered at the sides with white, and marked above with a little blue scaling; outside the pale lunules is an indication of a series of blue spots, indefinite in

shape, and reduced to scattered blue scaling between the nervures. There is also a submarginal row of six spots of whitish scaling, the first commencing near the apex, above the last of the obsolete blue spots; the last, before the anal angle, is the largest, and is slightly tinged with orange.

Body black, two white spots at the base of the antennæ above, and two larger ones on the front of the prothorax; orbits white, except above, and front tibiæ streaked with white.

The female differs in the pale markings being of a more dingy white, and the lower part of the band on the anterior wings is considerably narrower than in the male.

Hab. Solomon Islands (Ali and Fauro).

In the Collection of Messrs. Godman and Salvin.

Allied to *P. Erskinei*, Mathew, from Ugi, and *P. Ptolychus*, Godman and Salvin, from Guadalcanar; but in these species the band is differently shaped, and there is a red spot (absent in *P. Woodfordi*) near the anal angle of the posterior wings.

PAPILIONIDÆ.

PAPILIO XI



M. H. Fisher del et lith

M & N Hanhart imp

1, 2 PAPILIO MORONDAVANA, ♂
3, 4 " ERITHONIOIDES, ♂

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XI.

XVII.—PAPILIO ERITHONIOIDES. ♂. Figs. 3, 4.

Papilio Erithonioides, H. Grose-Smith, "Annals and Magazine of Natural History," ser. 6, vol. 7, p. 122 (1891).

Exp. ♂ . $3\frac{7}{8}$, ♀ . $4\frac{5}{8}$ –5 inches.

Male. UPPERSIDE. Both wings marked as in *P. Demoleus*, Linn., but on the posterior wings the stramineous band which crosses the wings before the middle is broader, and the spots in the submarginal row are more lunulate; at the lower end of the dark rufous spot above the anal angle is a large subovate black spot; and the middle median nervule is produced into a rather longer tail than in *P. Demoleus*.

UNDERSIDE. More resembles *P. Erithonius*, Cram., than *P. Demoleus*; but the anterior wings are more irrorated with stramineous scales, and on the posterior wings the central band is less rufous and broader than in *P. Erithonius*; the curved black line which crosses the cell near its extremity in that species is represented in *P. Erithonioides* by a triangular black spot with the apex pointing outwards, and the irregular row of black bars which divides the central band is wider; the veins on the disk are black instead of stramineous; the ocellus below the costal nervule is larger; and at the anal angle, instead of the ferruginous spot crowned with a black spot centred with blue scales, is a dark rufous spot, with the black spot at its lower end as on the upperside, above which is a round black spot with a blue iris centred with brown. The submarginal lunules are more deeply incised on the outer side.

Female. UPPERSIDE. Nearly resembling the male, but on the posterior wings a space on each side of the large ocellus below the costal nervule is bright ferruginous. On the disk, the space between the stramineous band and the row of submarginal lunules is brightly irrorated with stramineous scales, in which, between the veins, are spaces less densely irrorated with the same colour, giving the appearance of indistinct black spots, with clusters of blue scales more or less distinct below each, resembling somewhat the mottled appearance of the

posterior wings of *P. Ophidicephalus*, Oberth. The lunules in the submarginal row are very strongly developed, the apices of each lunule being elongated towards the margin; the tail formed by the prolongation of the middle median nervule is very marked, being nearly $\frac{3}{4}$ inch long.

UNDERSIDE. All the spots on both wings larger than on the upperside. Anterior wings with the first four spots of the submarginal row confluent with those of the marginal row, and the others nearly so. Posterior wings with the apices of the submarginal lunules much elongated, almost extending to the spots of the marginal row, which are fully developed. The marginal lunules on each side of the tails extend down them almost to the extremity. Across the disk the outer row of sinuate black lines is crowned with silvery blue; and in the middle row, the irregular black spots extend inwardly in a conical shape, and are margined on the outer side by another row of bright blue scales. Inside the extremity of the cell is a broad curved black spot centred with blue; the veins are black, most broadly on the margins. Both wings irrorated with stramineous scales between the spots and at the base.

Antennæ rufous.

Hab. N.W. coast of Madagascar (Last).

In the Collections of Henley Grose Smith, the Hon. Walter Rothschild, and others.

This species is intermediate between the Asiatic *P. Erithonius*, Cram., and the African *P. Leonobus*, Linn. Both the latter species are among the commonest butterflies in their respective countries; and the true *P. Demoleus* is common in Madagascar, as well as on the continent of Africa. *P. Erithonioides* is a much larger insect than *P. Erithonius*, and the development of the tails in the female is very remarkable. A considerable series was received.

XVIII.—PAPILIO MARONDAVANA, ♂. Figs. 1, 2.

Papilio Marondavana, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 8, p. 78 (1891).

Exp. ♂, $4\frac{3}{4}$, ♀, $4\frac{3}{4}$ inches.

Male. UPPERSIDE. Anterior wings marked nearly as in *P. Erithonioides*, the basal third being densely irrorated with stramineous scales in lieu of the small spots or lines of the same colour arranged in nearly parallel rows in *P. Erithonioides*. Posterior wings with the subbasal stramineous band broader than in *P. Erithonioides*, and on the costal margin extending rather broadly round the subapical cellus, the outer part of the band between the costal and subcostal nervures being brightly ferruginous; the spots in the submarginal row are smaller and

less lunulate outwardly, and the black spot at the lower end of the rufous anal spot of *P. Erithonioides* is absent, the rufous spot of *P. Marondavana* being rounder and paler; the space between the submarginal row and the band is more densely irrorated with stramineous scales.

UNDERSIDE. Resembles *P. Erithonioides*, but paler. On the anterior wings the longitudinal stramineous bars at the base are more confluent and less elongated than in *P. Erithonioides*. The space between the end of the cell and the third spot in the discal row of spots is densely irrorated with stramineous scales, which are absent in the corresponding space in *P. Erithonioides*. On the posterior wings the dark markings are less conspicuous, and the subapical ocellus is more elongate-ovate, and surrounded with a narrower black line than in *P. Erithonioides*; on the disk in the spaces between the nervules, and surrounding the outer part of the cell, is an irregular row of triangular black markings (the two uppermost hastate) bordered outwardly with ill-defined silvery bluish-white spots; the submarginal spots are more conical, and nearer the margin; the marginal lunules are narrower and more elongate, those on each side of the tail extending down nearly to its end; the rufous anal spot is sharply triangular, with the apex downwards, instead of being quadrangular with a black bar below; the space above the rufous spot is silvery bluish-white. The antennæ of both sexes are red, as are those of the female of *P. Erithonioides*; the antennæ of the male of the latter, and of both sexes of *P. Demoleus* are black.

Female. Resembles the male, but larger.

Hab. Mahabo, Marondava River, S.W. Madagascar (Last).

In the Collections of Henley Grose Smith and the Hon. Walter Rothschild.

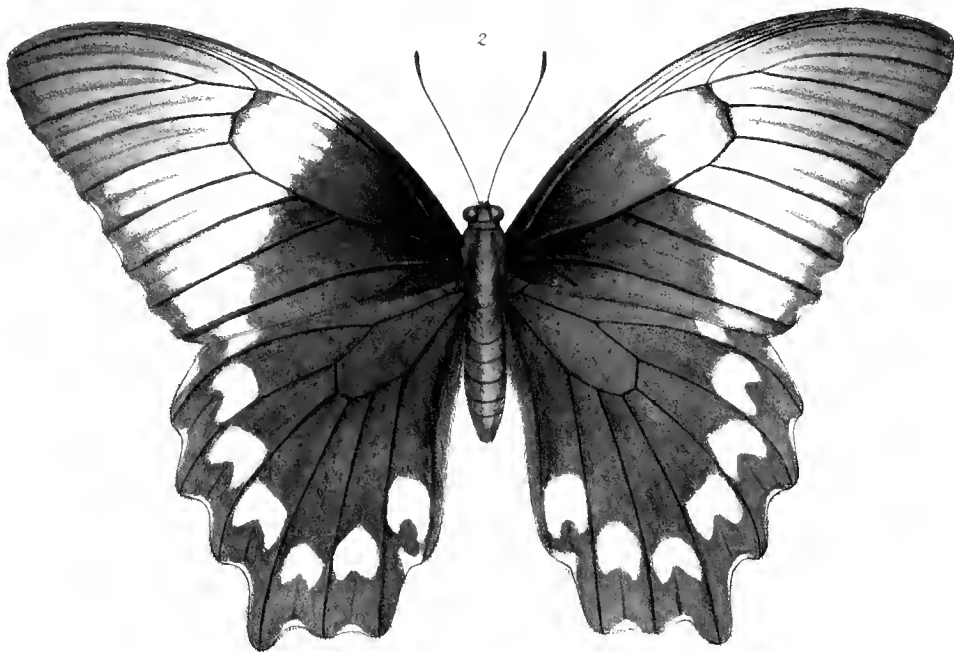
Allied to *P. Demoleus*, Linn., and *P. Erithonioides*, Grose Smith; but the anterior wings are narrower, more curved on the costal margin, and more concave on the outer margin. The posterior wings have a tail $\frac{1}{4}$ inch long in both sexes.

It is interesting to meet with two such very distinct species in Madagascar of a small group like that of *P. Demoleus*, which is widely distributed, but includes very few species, and those by no means remarkably variable.

P. Marondavana was captured in the above locality only, while *P. Erithonioides* occurred in nearly every locality visited by Mr. Last on his journey down the West Coast as far south as Salary.

PAPILIONIDÆ

PAPILIO XII.



M. Norman Fisher del. et. sculp.

Hambart sculp.

1 PAPILIO INOPINATUS, ♂.

2. " " " ♀.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XII.

XIX.—PAPILIO INOPINATUS. ♂. Fig. 1. ♀. Fig. 2.

Papilio Inopinatus, Butler, "Proceedings of the Zoological Society of London," 1882, p. 370.

Exp. 5 $6\frac{1}{4}$ inches.

Male. **UPPERSIDE.** Black, anterior wings with an oblique white band crossing the wing beyond the cell, from below the costa to just above the upper submedian nervule, where it becomes suddenly narrowed; this band is divided into spots by the nervures, and extends nearest to the hind margin along the second discocellular nervule. Posterior wings with a much broader and more cream-coloured band, less distinctly cut by the nervures, and much dentated on the outer edge, which extends from the costa to just below the second median nervule; near the anal angle is a square red spot, with some adjacent red atoms.

UNDERSIDE. Anterior wings nearly as above; posterior wings with the cream-coloured band obsolete; the red spot at the anal angle well marked, and bearing a patch of blue dusting, and a row of red crescents, surmounted by crescents or arrow-heads of blue dusting, between the nervures; there are six of these, but only the two first and the last red spot are well marked; and the fifth is reduced to a few red specks, though the blue ∇ above it is conspicuous.

The incisions are very slightly marked with white, most distinctly on the posterior wings.

Female. **UPPERSIDE.** Anterior wings with the pale band white, more suffused outwardly, and much broader and longer, extending inwards over the outer third of the cell, and downwards to the hinder angle. Posterior wings with no white band, but with a submarginal row of seven large spots, deeply indented outwardly, and curving round to the anal spot, the seventh of the series; the

extremity of the fold is also marked with red; the sixth spot is surmounted by a patch of blue dusting.

UNDERSIDE. Anterior wings nearly as above, posterior wings with the submarginal spots narrower, and the anal spot connected with that at the extremity of the fold; the spots (except the seventh, which is marked with a patch of blue dusting), surmounted by blue crescents, within which is a nearly straight bar of tawny dusting, mixed with whiter particles, running between the first blue crescent and the summit of the seventh red spot; between the first and second blue crescent this is only indicated by two small detached patches.

Incisions much more distinctly spotted with white than in the male.

The posterior wings are strongly dentated and subcaudate in both sexes.

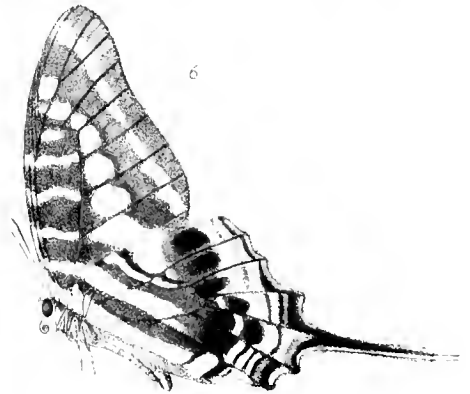
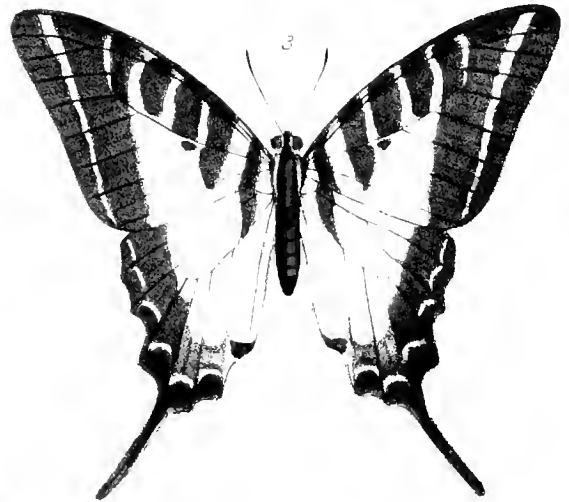
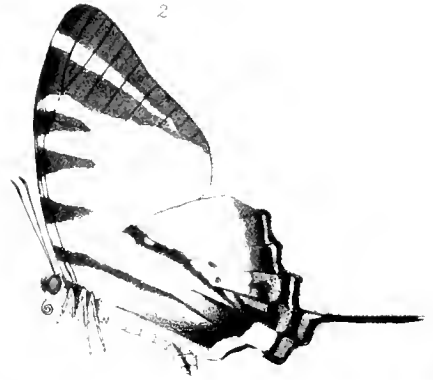
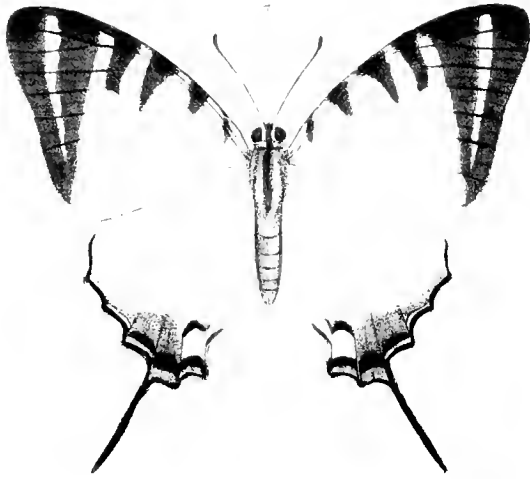
Hab. Marœ Island, Timor Laut (Forbes), and the Tenimber Islands (Doherty).

In the Collections of the British Museum, H. Grose Smith, and the Hon. Walter Rothschild. Mr. Butler mentions a variety of the male in which the white band invades the cell.

Allied to *Papilio Egeus*, Fabricius, and *P. Adrastus*, Felder.

PAPILIONIDÆ.

PAPILIO XIII.



PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XIII.

XX.—PAPILIO STRATIOTES. Figs. 1, 2.

Papilio Stratiotes, H. Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 433 (Dec., 1887); Honrath, "Berliner Entomologische Zeitschrift," vol. 349, pl. 6, fig. 3 (1888).

Exp. $3\frac{3}{4}$ inches.

"*Male*. UPPERSIDE. White, tinged at the base with pale greenish yellow. Anterior wings with the costal margin and cell crossed by four black fasciæ: the basal fascia narrow, the second, third and fourth wedge-shaped, the fourth extending beyond the discocellular nervules; beyond the fourth fascia is a semitransparent space divided by the discoidal nervules, which are black: apex broadly black, centred with another transparent space, divided by the black nervules. Posterior wings with exterior margins narrowly black, and three black lunate spots near the anal angle; anal area grey, a large bright, quadrangular, carmine spot at the anal angle, bordered on the upperside with black, and on the inside on the inner margin with a white linear spot. Tails narrow and black, with white margins.

"UNDERSIDE. Anterior wings as above, tinged at the base with yellowish brown. Posterior wings ochraceous, crossed at the middle and near the base by two black bands, slightly convergent towards the anal angle, and extending as far as the greyish-black space above the anal carmine spot; the exterior margin and anal area broadly black, irrorated towards the anal angle with grey, the carmine spot as above, the discocellular and median nervules black; two small black spots below the former." (H. G. S., *loc. cit.*)

Hab. Kina Balu Mountain, North Borneo (Whitehead): Sarawak.

In the Collections of Messrs. Whitehead and H. Grose Smith, the Hon. Walter Rothschild, and others.

"This insect appears to be intermediate between *P. Antiphates*, Cramer, and *P. Agetes*, Westwood; in shape and markings of the upperside it approaches *P. Agetes*; on the underside it bears a superficial resemblance to *P. Antiphates*" (H. G. S., *loc. cit.*)

XXI.—PAPILIO PARON. Figs. 3, 4.

Papilio Paron, Godman and Salvin, "Proceedings of the Zoological Society of London," 1879, p. 654.

Exp. $2\frac{3}{4}$ – $3\frac{1}{4}$ inches.

UPPERSIDE pale green and black. Anterior wings with the basal two-thirds pale green, tinged with yellow towards the base, with four broad, black bars running from the costa, which is edged with a black line; the first very near the base, and extending quite across the wing; the second extending to the submedian nervure, where it is truncated; the third only continued below the median nervure by a long oval spot; the fourth ceasing at the median nervure. Apical third black, with a narrow green stripe just beyond the end of the cell, and a submarginal green stripe, divided by the nervures, and ceasing before reaching the inner margin.

Posterior wings still paler green, with the sub-basal black bar of the anterior wings continued across the cell, but then fading out. Hind margin with a broad black border, marked with a series of slender white lunules, partly connected towards the anal angle. Tails long, black, edged with white, as are also the incisions.

UNDERSIDE. Anterior wings nearly as above, but the lighter part is of a more or less yellowish green, and the submarginal streak is broader and more continuous. Posterior wings of a yellowish green towards the base, with the two basal bands of the anterior wings continued for three-quarters of their length, and then uniting. The second is intersected by an orange streak near the costa, and by a yellowish-green stripe, connected above with the ground-colour, about the middle of the wing. The outer portion of this stripe is also marked here and there with a few orange scales. Below the junction of the bands is a curved row of three orange spots, separated by the nervures, the innermost very near the hind margin. A black border, with whitish lunules, partly connected towards the anal angle. The inner portion is somewhat dusted with greenish. Body black, paler beneath, sides of the thorax yellow.

Hab. New Britain and New Ireland.

In the Collections of Messrs. Godman and Salvin, and of H. Grose Smith, but very rare, as in the many collections from these Islands received by Mr. Grose Smith there have been only two specimens, and Messrs. Godman and Salvin possess, it is believed, only one specimen.

Allied to *P. Parmatus*, Gray, but differs in the orange markings of the under-surface of the posterior wings.

XXII.—PAPILIO POLISTRATUS. Figs. 5, 6.

Papilio Polistratus, H. Grose Smith. "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 121 (February, 1889).

Exp. $2\frac{7}{8}$ inches.

"*Male*. UPPERSIDE. Both wings dark brown, with green spots and markings. Anterior wings with spots as in *P. Polices*, Cram., but the markings across the cell more linear and undulated. Posterior wings with a green stripe following the inner margin from the base halfway down the wings, a nearly central band of three longitudinal spots divided by the nervures, the spot on the costal margin nearly white, the other two green, the lowest spot shorter than in *P. Polices*, between this band and the submarginal row of linear spots are two spots, one on the costal margin oval, nearly white, the other below the first subcostal nervule smaller, oval, acuminate at the lower end; a submarginal row of narrow spots.

"UNDERSIDE with markings as above, but anterior wings paler; posterior wings blacker, the latter with a central linear red band in the middle of a broad dark band, and red markings curving between the median nervules to the inner margin a little above the anal angle; a broad dark band crosses the disk beyond the centre." (H. Grose Smith, *loc. cit.*)

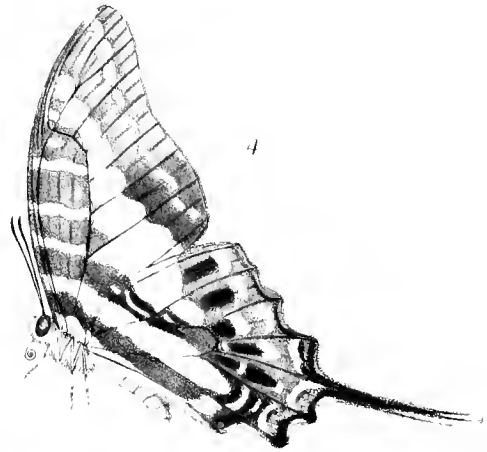
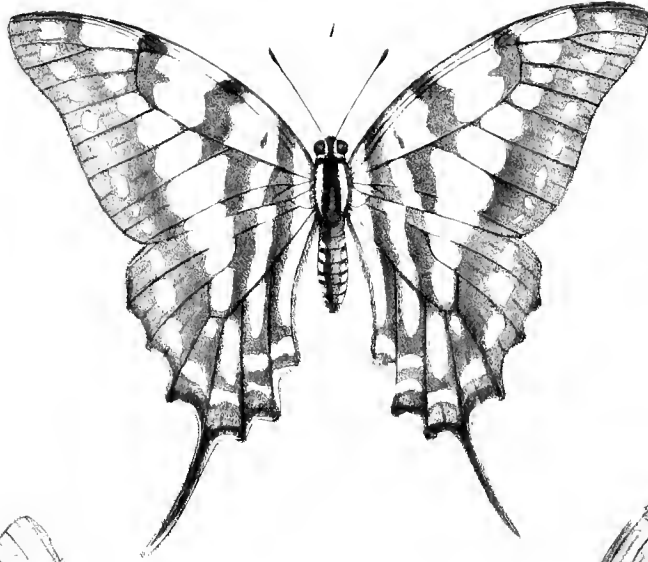
Hab. Mombasa (East).

In the Collection of H. Grose Smith.

"This butterfly is intermediate between *P. Polices*, Cram., and *P. Porthoun*, Hew.; it is probably a hybrid between these species, or between *P. Polices*, Cram., and *P. Colonna*, Ward, or between *P. Colonna* and *P. Porthoun*, Hew." (H. Grose Smith, *loc. cit.*)

Two examples were received among a number of *P. Colonna*, and it is possible others were overlooked, as the resemblance to *P. Colonna* on the underside is very strong.

PAPILIONIDÆ.
PAPILIO XIV



M. Horner Fisher del et lith

Mutem Bros imp

1, 2. PAPILIO HOLLANDI.
3, 4 „ JUNODI.

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XIV.

XXIII.—PAPILIO MERCUTIUS. ♂. Figs. 1, 2.

Exp. 3½ inches.

Male. UPPERSIDE pale cupreous-brown, with creamy-white markings, tinged with yellowish-green on the anterior wings. Anterior wings with a pale band at the base, and two very broad ones filling most of the cell, the first enclosing a short black streak, and with a narrower pale band running from below its basal end to the inner margin; the second band in the cell is concave on both sides. Beyond the cell runs a curving row of large pale spots, of which the fourth from the costa is the smallest; and a nearly straight oblique row of smaller submarginal spots. Posterior wings with a pale basal and inner marginal band, two pale bands in the cell, continued below by two long spots and a short one, and a submarginal row of pale spots; towards the anal angle is a large pale blotch, marked in the middle with black, and inside above with red; within this is a second oblong red spot. Incisions yellow above, and creamy-white below. Tails long, slender, black, bordered with creamy-white.

UNDERSIDE similar, but posterior wings more inclining to olive; a red spot above the cell; two oblong red spots of equal size towards the anal angle, bordered below with black.

Body blackish above, orbits, undersurface of head, a broad stripe on each side of the prothorax, the abdomen beneath, and stripes on the sides, creamy-white; red spots on the vertex, towards the base of the wings beneath, and on the sides of the base of the abdomen beneath.

Hab. Morakwen, Delagoa Bay (Rev. H. Junod).

Nearest to *P. Anthens*, Cram.

In the Collection of Mr. H. Grose Smith.

Taken November 10, 1892.

We have been obliged to change the name of this species, as we find that Mr. W. H. Edwards has already described a *Papilio Hollandi* from Colorado.

XXIV.—PAPILIO JUNODI. ♂. FIGS. 3, 4.

Papilio Junodi, Trimen, "Transactions of the Entomological Society of London," 1893, p. 138.

Exp. 3-3½ inches.

Male. UPPERSIDE. Dark brown, with pale greenish-yellow markings, darkest in the cell of the anterior wings, and nearly white on the posterior wings. Anterior wings with six bands in the cell, the first broad, and continued to the inner margin, the second interrupted by the median nervure, but continued below to the inner margin, the third, fourth, and fifth narrower, and confined to the cell, the sixth reduced to an oval spot on the upper part of the cell, before its extremity. Beyond and below the cell runs a series of discal spots, which are connected on the lower part of the wing, the portions of the lowest median nervure, and the submedian nervure being whitish where they cross them; the spot nearest the costa is set further outwards than the others, and has a smaller spot within it. Submarginal spots diminishing from the costa to the hinder angle; fringes black. Posterior wings: basal band continued to the fold, which is very conspicuous, and filled with whitish hair, the hairs along the inner margin being black. Second band broader and whiter than on the anterior wings, nearly parallel to the inner margin, and slightly widened outwards above the median nervure; it ceases at about two-thirds of the length of the wing. The discal band is broad on the costa, but narrows suddenly between the subcostal nervules, below which it does not extend, except for two widely separated spots on the disc, one large, and one small, above and below the discoidal nervule. Submarginal spots nearly obsolete; three whitish ones towards the hind margin, and two blue lunules, more or less filled up with blue dusting, towards the anal angle. Fringes very slightly marked with grey. Tails long, black, marked towards the tips with white, and bordered on the inside with white, the incisions at the anal angle also being white.

UNDERSIDE glistening brown, the markings whiter than above, and rather more extended; submarginal spots continuous; posterior wings with the two isolated discal spots of equal size; the dark portions of the posterior wings blackish within the discal band, and marked with three separated red lines; and within the white spots, and towards the margins with ill-defined black spots; at the anal angle is a square red spot, surmounted with white, and followed by three red streaks, diminishing in size, and curving round to the end of the cell.

Body black above, with grey stripes; white below; legs black, striped with white.

Hab. Morakwen, Delagoa Bay (Rev. H. Junod).

In the Collections of the British Museum (Hewitson), South African Museum, the Honourable Walter Rothschild, and of Mr. H. Grose Smith. Allied to *Pipilo Polycus*, Cram., *P. Porthos*, Hew., and *P. Polistatus*, Grose Smith, but differs from all three in the marked tendency to obsolescence in the submarginal series of spots in both wings, and of the lower spots of the discal series in the hind wings. "Taken at Morakwen, . . . by native collectors, in . . . November and December, 1891. The first example, a small ♀, was stated to be flying high, but the others flew near the ground, like *P. Odono* [Ward], with a rather slow but erratic course." (Primer, *loc. cit.*) It is also allied to *P. Siscana*, Mabille, from Mozambique; but in *P. Siscana* the spots are of a bright green, and much smaller.

PLATE I
PAPILIONIDAE



PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XV.

XXV.—PAPILIO WEBSTERI. ♂. FIG. 1; ♀. FIG. 2.

Papilio Websteri, H. Grose-Smith, "Annals and Magazine of Natural History," ser. 6, vol. 13, p. 496 (June, 1894).

Exp. ♂. 4; ♀. 4 $\frac{3}{4}$ inches.

Male. UPPERSIDE. Both wings black. Anterior wings with a curved row of six white spots between the veins towards the apex, the first above the costal nervure narrowly linear, the second and third the largest, the latter being concave on its outer edge, the third and fifth smaller, the sixth the smallest; the apex beyond this row is dusted with a few grey scales, and there are rays of grey scales in the cell. Posterior wings rather long and narrow, dentated, with a large greenish-white patch across the disc, and the outer fourth of the cell, that part which lies above the upper subcostal nervule not extending inwardly towards the base, as in other species of this group; the outer edge of the white patch is emarginate and somewhat concave between the veins. Incisions in both wings narrowly white.

UNDERSIDE. Anterior wings brown-black, with the curved row of spots towards the apex as on the upperside, but larger, between which and the apex is a series of rays of greyish-brown scales between the veins. Posterior wings black, with a submarginal row of seven rufous brown spots, crossing the wings from below the costa to the anal angle, the first, sixth, and seventh spots being the largest; inside the row of spots are a few patches of blue scales, those towards the anal angle being the most conspicuous. White marks on the incisions in the posterior wings, broader and more conspicuous than on the upperside.

Female. UPPERSIDE. Both wings dusky brownish-grey, dusted with brown scales. Anterior wings crossed from the costa, a little beyond the middle to near the outer angle by a curved row of white spots, dusted on each side with

grey scales, and divided by the veins, those at the end of the cell, which they slightly invade, the most produced, thence gradually diminishing towards the outer angle. Posterior wings with a large white patch, the upper part of which is bounded by the upper subcostal nervule, crossing the outer third of the cell, and extending downwards along the submedian nervure, with some grey scales between that nervure and the inner margin; the outer edge of the white patch radiates between the nervures, and is clearly defined; a rufous subquadrate spot above the anal angle, followed by another between the two lowest median nervules. Incisions narrowly white.

UNDERSIDE as above. On the anterior wings the curved row of white spots is more distinct and invades the end of the cell, which is broadly and irregularly marked with black. On the posterior wings the white patch extends nearly to the inner margin, there is a submarginal row of rufous bars between the nervures, the spot above the anal angle is larger than on the upperside, and there are clusters of blue scales in the interspaces of the median nervules outside the white patch. Incisions more broadly white than on the upperside.

Head and body black; head with some white spots above, hinder orbits broadly, and lower orbits narrowly, bordered with white; face with two white streaks in the middle.

Hab. New Britain.

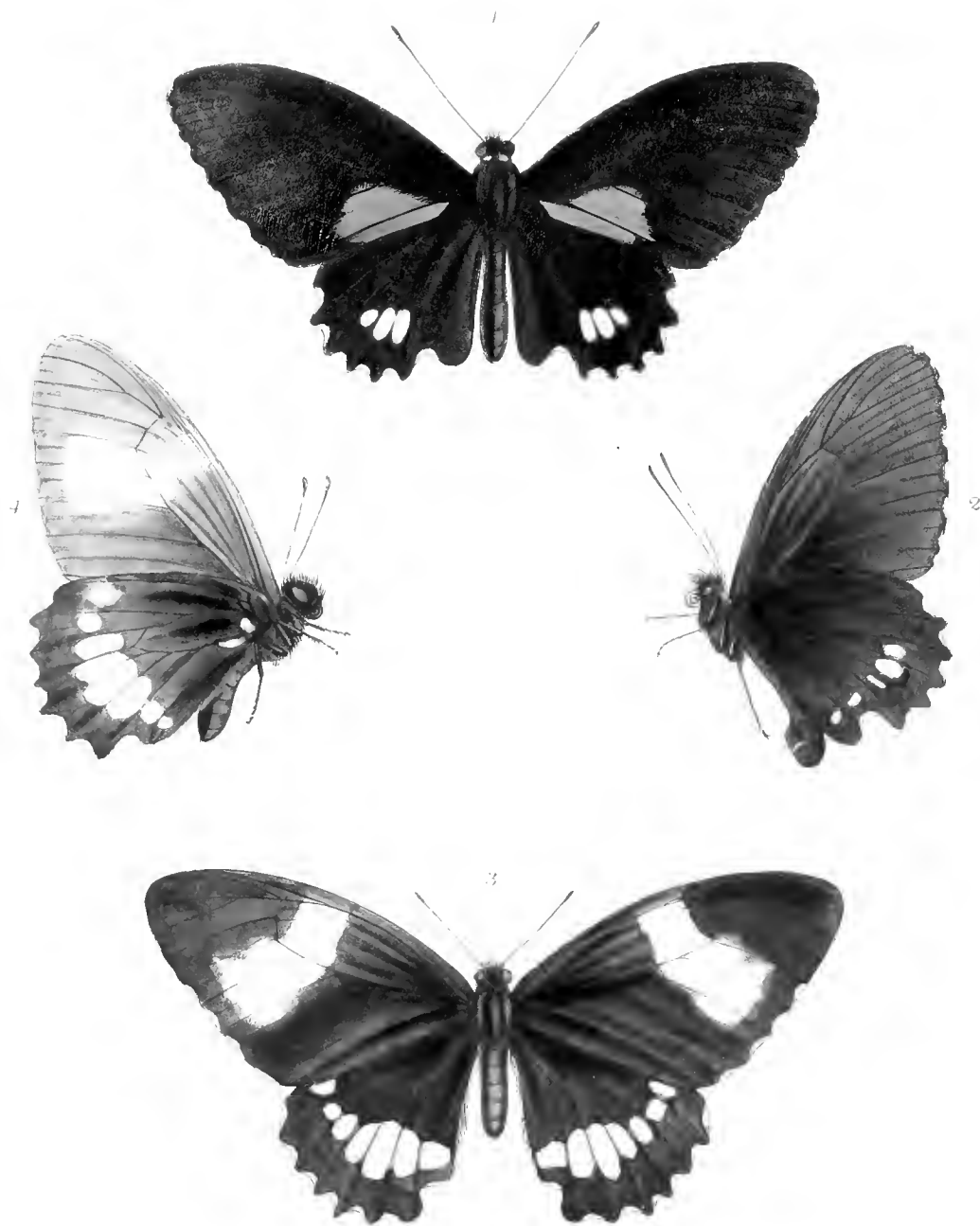
Four specimens, one being a *female*, were sent (Captains Cayley Webster, and Cotton), of which a *male* is in the Collection of the Hon. Walter Rothschild, and the others are in the Collection of Mr. H. Grose Smith.

Belongs to the group of *P. Ormenus*, Guér. The *male* differs from the other species principally in having the row of spots towards the apex of the anterior wings curved, less oblique, and further from the apex, and on the posterior wings, in the upper part of the white patch on the upperside not extending inwardly along the costa towards the base. The *female* differs in having the curved row of white spots which crosses the anterior wings much more restricted, the patch in the posterior wings being pure white, wider and more clearly defined.

A collection lately received contains a series of this species, of which three are females.

PAPILIONIDÆ.

PAPILIO XVI



PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XVI.

XXVI.—PAPILIO LACYDES. ♂. Figs. 1, 2.

Papilio Lacydes, Hewitson, "Equatorial Lepidoptera, collected by Mr. Buckley," I., p. 1, No. 1 (1869). Kirby, "Transactions of the Entomological Society of London," 1881, p. 351.

Papilio Erithalion, ab. (?) *Equestris*, Oberthür, "Études d'Entomologie," IV., p. 88, pl. 5, fig. 2 (1880).

Exp. $3\frac{1}{4}$ --4 inches.

Male. UPPERSIDE. Velvety-black. Anterior wings with a large dull green spot on the inner margin, of a long narrow pear-shape, the thin end directed towards the base. Posterior wings with white incisions, and with three scarlet spots shot with violet, not close to the anal angle; the outermost is round, and the others larger, and oval.

UNDERSIDE black; base spotted with red, and a red belt near the extremity of the abdomen. Posterior wings with five spots, the two outermost pale pink, and slightly oval, the third of the same colour, but smaller; the two nearest the anal angle white, and smaller than the others.

Female. UPPERSIDE dark brown, the outer margins marked by white humular spots. Anterior wings crossed obliquely a little beyond the middle by a broad oblique band of white, divided by the nervures into eight parts. Posterior wings crossed towards the outer margin by a curved band of white, divided by the nervures into six spots, two of which nearest to the apex are isolated.

UNDERSIDE precisely as above.

Hab. Ecuador (St. Ines, Sarayacu and Chiquinda), Buckley; Quito (*teste* Oberthür).

In the Collections of Mr. H. Grose-Smith and others.

Allied to *P. Erithalion*, Boisduval, and *P. Cyphotes*, Gray.

The female insect described by Hewitson, and figured by Oberthür, is the type of this species, which appears to be generally common in Ecuador. Hewitson's typical specimens came from St. Ines.

XXVII.—PAPILIO VIRGINIA. ♀. FIGS. 3, 4.

Papilio Virginia, Kirby, "Transactions of the Entomological Society of London," 1881, p. 352.

Exp. $3\frac{1}{2}$ inches.

Female. **UPPERSIDE**. Dark brown. Anterior wings with a suffused yellowish-white band crossing the end of the cell, the lower angle of which it touches, and then widening outwards towards the middle of the hind margin, which, however, it does not reach. Posterior wings with white incisions, and a row of seven white transverse spots; of which the fourth, fifth, and sixth are oval, and larger than the others, spot five being much the largest; and spot seven, nearest to the anal angle, broad, and tinged below with rose-colour. The third and fourth spots are also very slightly touched with rose-colour below.

UNDERSIDE similar but paler, and spotted with red at the base. The spot on the posterior wings nearest the anal angle is here divided into two, the first of which is red and white, and the second red.

HAB. Eastern Ecuador (Banks of the Copataza River, which flows into the Pastaza River), (Buckley).

In the Collection of Mr. H. Grose-Smith.

Another specimen, in the Collection of the Hon. W. Rothschild, comes from the River Sabanita, Ecuador, captured at an elevation of 3,500 feet (O. T. Baron).

Allied to *P. Lacydes*, Hewitson (*vide supra*).

PLATE 100



G. C. Davis, artist

West New York, N. J.

Papilio artemesia ♂
 ♂ 1 ♀ 2 ♀

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XVII.

XXVIII.—PAPILIO QUADRATUS *var.* SPOLIATUS.

♂. FIG. 1; ♀. FIG. 2.

Papilio Quadratus var. Spoliatus, Staudinger, "Iris," Vol. XI., p. 138.

Exp. ♂ $3\frac{1}{8}$; ♀ $3\frac{1}{2}$ inches.

Dr. Staudinger's description of this variety, which is somewhat lengthy, may be summarised by stating that in the variety "*Spoliatus*" the male differs from the typical form of the same sex of *P. Quadratus* ("Iris," Vol. III., Pl. III., Fig. 1, p. 337, 1890, and "Iris," Vol. IV., p. 61), in the absence of the large square yellowish spot on the UPPERSIDE of the disc of the anterior wings.

On the UNDERSIDE of the posterior wings the sub-anal pink spot is larger than in the figure of *P. Quadratus*, but Dr. Staudinger states that this spot varies in size in different specimens of the variety "*Spoliatus*."

I do not find that the female of the typical form "*Quadratus*" has been described, and I am unable to make any comparison between it and the female specimen of the variety figured in the Plate.

The wings of the female are browner than in the male, especially the anterior wings, which are slightly translucent, broader, and rounder at the apex. On the posterior wings the pale tawny spot at the end of the cell of the male is absent; the outer margin of these wings is deeply indented between the veins, the middle and lowest median nervules and submedian nervure being elongated almost into tails.

Hab. Pebas, Upper Amazons.

In the Collections of Dr. Staudinger and Mr. Grose-Smith.

The species is allied to *P. Triopus*, Godm., *P. Chabrius*, Hew. and *P. Pizarro*, Staudinger.

XXIX.—PAPILIO MAZEPPA. ♀. Figs. 3, 4.

Exp. $3\frac{3}{4}$ inches.

This female very closely resembles the same sex of *P. Bolivar*, Hew. from which it differs in the following respects. The anterior wings are rather more translucent, and the white incisions on the margin of those wings between the veins are more conspicuous.

On the UPPER SIDE of the posterior wings the discal patch of stramineous spots is more compact and less irregular, and the veins crossing the patch are white instead of black, the spot above the upper median nervule is more abbreviated both outwardly and inwardly, and the spot between the submedian nervule and the inner margin extends over the interspace nearly to the inner margin, and is of more uniform width with the other spots, the spot in the same position in the female of *P. Bolivar* being more or less obsolete.

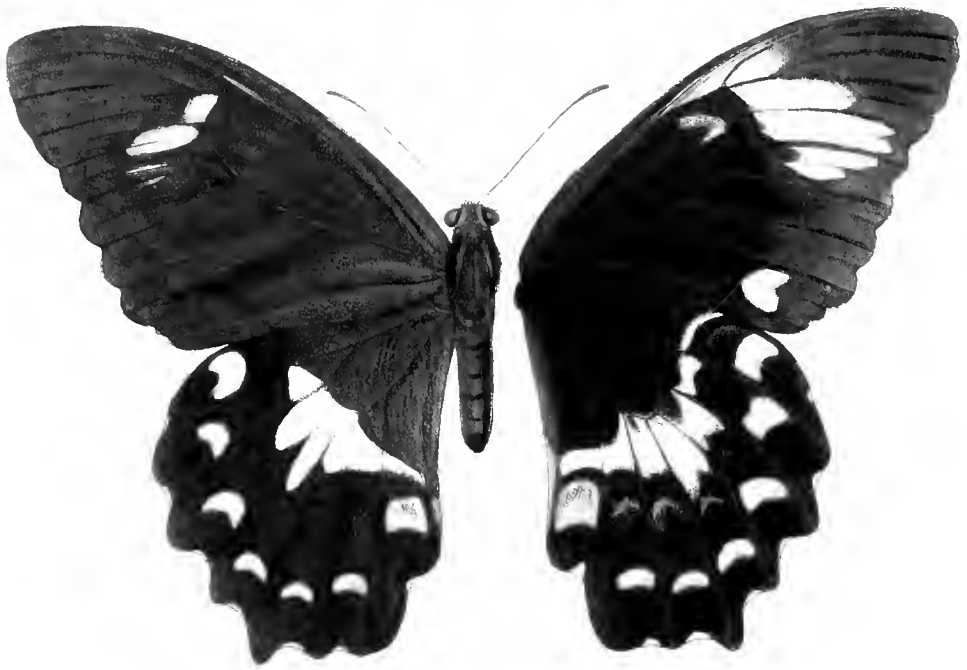
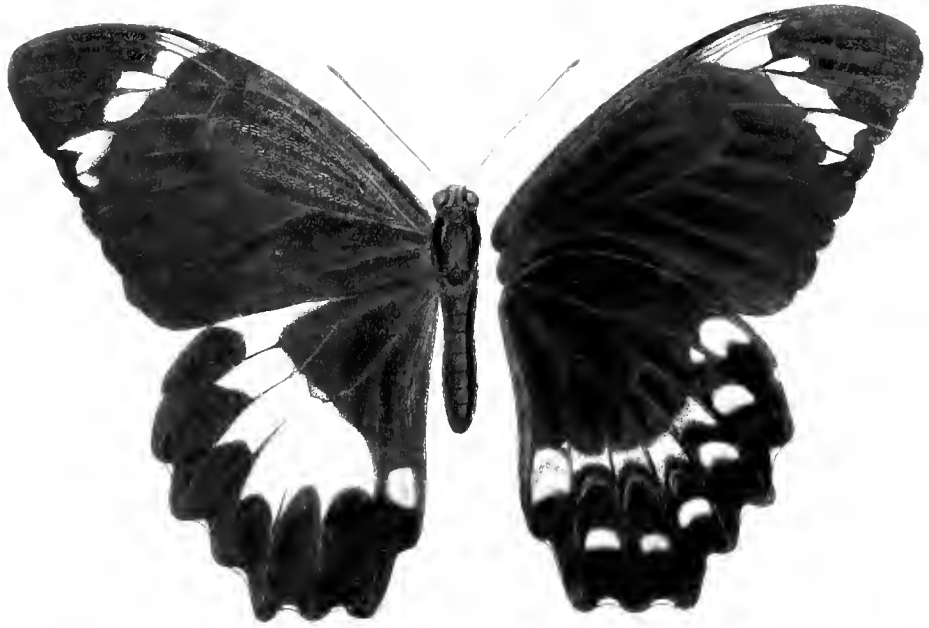
On the UNDER SIDE of the posterior wings the patch of stramineous spots is wider, and the veins crossing it are more narrowly black, the spots forming the patch being thus more compact.

Hab. Iquitos, Ecuador (Buckley).

In the Collection of Mr. Grose-Smith.

The male is unknown, I believe, and Mr. Buckley sent only a single specimen of the female: I am not aware of *P. Bolivar* having been captured in Ecuador, probably the male of *P. Mazeppa* closely resembles it.

PAPILIO DITHIDEA
PAPILIO XVIII



H. S. P. Del. et Lit.

West. Newman imp.

1 PAPILIO OBERON, ♂
2 " " ♀

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XVIII.

XXX.—PAPILIO OBERON. ♂. FIG. 1. ♀. FIG. 2.

Papilio Oberon, male, H. Gröse-Smith. "Annals and Magazine of Natural History," Series VI., Vol. XIX., p. 172 (February, 1897).

Exp. ♂ $4\frac{1}{2}$ inches; ♀ 5 inches.

Male. UPPERSIDE. Black; anterior wings crossed obliquely, at about one-third from the apex, by a row of white spots arranged as in *P. Egeus*, Don., but the spot between the lowest subcostal and upper discoidal nervules is quadrate and not indented externally. Posterior wings with a greenish-white band of spots divided by the veins as in *P. Egeus*, but the inner edge of this band slightly invades the cell as in *P. Oeneus*, Guér., and the outer ends are rather more indented; above the anal angle is a large suboval brick-red spot.

UNDERSIDE. Anterior wings as on the upperside; the oblique row of spots is broader and irrorated with grey on the inner side, with streaks of grey scales between the veins on the outer side. Posterior wings with a row of six brick-red lunules crossing the disc from the submedian nervure to the apex, those nearest the anal angle the smallest, gradually increasing in size, the apical spot being the largest of them; another brick-red spot, larger than the last-named spot, is situate above the anal angle; inside the row of red spots are two rows of greyish markings, the outer of which consists of three narrow bluish-grey hastate lines between the submedian nervules, above which, divided by the veins, is a row of seven bars of grey scales, indented outwardly, those on either side of the uppermost median nervule being the broadest and most indented, the two bars nearest the apex nearly obsolete.

Female. UPPERSIDE. Brown; anterior wings with an indistinct oblique band of three brownish-grey spots towards the apex, but nearer the cell than the white subapical band of the male, and traces of a subcostal streak rather beyond the middle. Posterior wings with a row of six brick-red lunules on the disc between the veins, and a large lunule of the same colour above the anal

angle irrorated with whitish scales in its upper part, followed between the veins by two patches of blue scales; clustered round the end of the cell is a band of contiguous greenish-white spots which rather broadly invade the end of the cell; the spot between the two uppermost median nervules is elongated outwardly and acuminate. Cilia whitish-red.

UNDERSIDE. Anterior wings with a large white patch or band of spots clustered round the end of the cell, a lunulate patch of white scales towards the end of the cell, and another large patch between the veins towards the outer angle. Posterior wings resemble those of the male, but the row of grey scales outside the cell is developed into a white band of seven spots or lunules crossing the middle of the wings, but not invading the cell, those at the end of the cell being the largest and somewhat indented outwardly. Cilia as on the upperside.

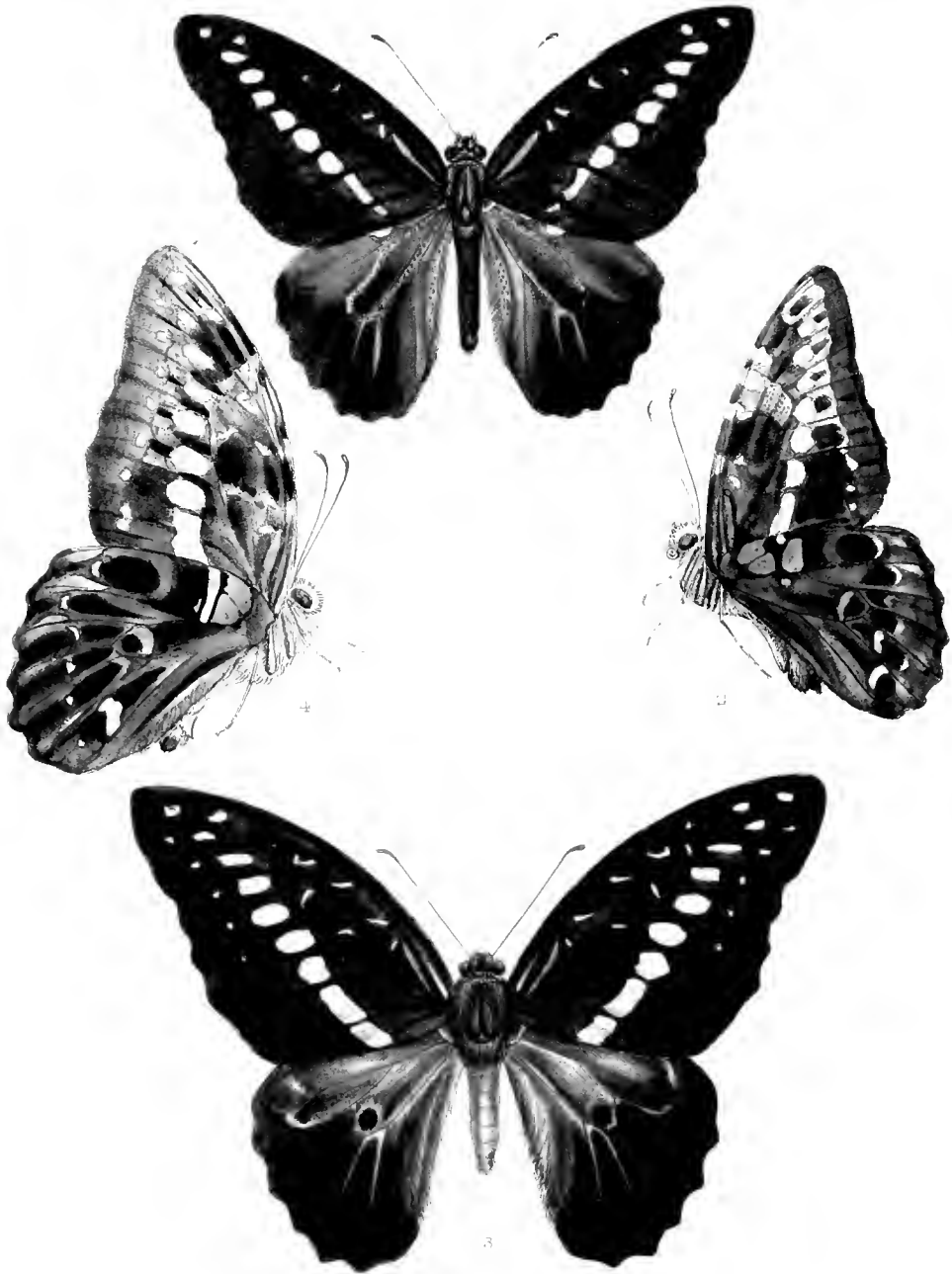
Hab. Santa Cruz Island (Woodford).

In the Collections of Mr. Grose-Smith (Types) and the Hon. Walter Rothschild.

Closely allied to *P. Egeus* and *P. Ormenus*, the male being nearest to the former species and the female to two of the forms of the latter, of which I have specimens from Fergusson and Kiriwini Islands. The female also resembles the figure of the same sex of *P. Adrastus* (Wallac), from Banda, figured in the Transactions of the Linnean Society, Vol. XXV., 1867, Plate IV., Fig. 1., in the submarginal row of red lunules on the posterior wings, though in other respects the differences are considerable.

PAPILIONIDÆ.

PAPILIO XIX.



Hornes del et lith

Wiedemann del et lith

1 2 PAPILIO BROWNI ♂
3 4 HICETACH ♂

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XIX.

XXXI.—PAPILIO BROWNI. ♂. FIGS. 1, 2.

Papilio Browni, female, Goodman and Salvin, "Proceedings Zoological Society," 1879 (14th June, 1879), p. 655.

Exp. 3 inches.

Male. UPPERSIDE. Resembles *P. Wallucci*, Hew., but with the discal band of green spots on the anterior wings narrower, especially the two spots from the lowest median nervule to the inner margin, the latter of which is almost obsolete; the submarginal band of small spots on those wings of *P. Wallucci* is also obsolete, or represented only by one or two spots towards the apex; on the posterior wings the green spot within the cell of *P. Wallucci* is absent, and the spot above it is more restricted.

UNDERSIDE. Anterior wings as on the upperside, but the submarginal band of spots is well defined, the space between it and the discal band, above the middle median nervule, being pale violaceous, in which is a series of dark markings on the outer side of the spots in the discal band, and there is also a series of pale spots on the costal margin above the spots in the cell.

On the posterior wings the green spot within the cell of *P. Wallucci* is represented by a small spot, above which, nearer the base, is a large green spot reaching to the costal margin and divided by the nervure, and the third green spot of the upper side is larger; the rest of the wings differ little from *P. Wallucci*.

Hab. New Britain and New Ireland.

The female resembles the male, but is larger.

In the Collections of Mr. Grose-Smith and others.

XXXII.—PAPILIO HICETAON. ♂. Figs. 3, 4.

Papilio Hicetaon, male, Mathew, "Proceedings Zoological Society," 1886, p. 350.

Exp. $4\frac{3}{4}$ inches.

Male. UPPERSIDE. Differs little from *P. Browni*, but the lower part of the discal band of spots, below the lowest median nervule to the inner margin, is wider than in *P. Browni*, but narrower than in *P. Wallacei*, and the submarginal band of small spots is more represented. On the posterior wings the sub-basal green spot is absent.

UNDERSIDE. On the anterior wings at the base is a crimson streak, on the posterior wings the crimson streak before the middle of the costa to the subcostal nervure is broader and more extended than in *P. Browni*, and outside it is a small green spot (absent in some specimens); there is only one large crimson spot towards the anal angle, and in some specimens there is another indistinct crimson patch at the end of the cell in the angle between the two lowest median nervules.

Hab. Solomon Islands.

The female does not differ from the male except in size; on the posterior wings are two or three indistinct submarginal pale spots, and the anterior wings are more elongated apically.

In the Collections of Mr. Grose-Smith and others. It is a larger insect than either *P. Wallacei* or *P. Browni*.



Hor. de Knight del. et lith.

West, Newman imp.

12 PAPILO ALBOLILES
 54 " INFRA

PAPILIONIDÆ.—PAPILIONINÆ.

PAPILIO. XX.

XXXIII.—PAPILIO ANDOCLIDES. ♀. FIGS. 1, 2.

Papilio Andoclidus.

Exp. $3\frac{7}{8}$ inches.

Female. UPPERSIDE. Both wings brown, crossed by a very broad white band, the brown colour on the outer side of the band darker than on the inner side. The band on the anterior wings is curved and crosses the wings transversely; it is regular on its inner edge and somewhat diffused; on its outer edge it is deeply dentated; the upper part of the band on its inner side invades the end of the cell rather broadly. The band on the posterior wings is regular on its inner edge and deeply radiated on its outer edge, the rays being grey; the marginal incisions on the anterior wings are lunulate and rather broad, those on the posterior wings being sub-quadrate and twice as broad.

UNDERSIDE. Anterior wings as above, but the area beyond the white band is paler brown. Posterior wings with the basal area bright brown, the veins and lines in the interspaces being dark brown, almost black; the area outside the white band is darker brown, the veins and rays between the veins being almost black; marginal incisions on both wings as on the upperside.

Hab. Stanley Falls, Upper Congo.

In the Collection of Mr. Grose-Smith.

On the upperside this species somewhat resembles *P. Plagiatus*, Auriv., but on the anterior wings the white band crosses the wings from the costal nervure to the inner margin and covers the end of the cell, and the outer edge of the band is deeply incised: on the posterior wings the band is much broader, of more uniform width, and more deeply radiated outwardly.

XXXIV.—PAPILIO NEYRA. ♂. FIGS. 3, 4.

Papilio Mendana Neyra, Rothschild, "Novitates Zoologica," Vol. II., p. 428 (1895).

Exp. $3\frac{5}{8}$ inches.

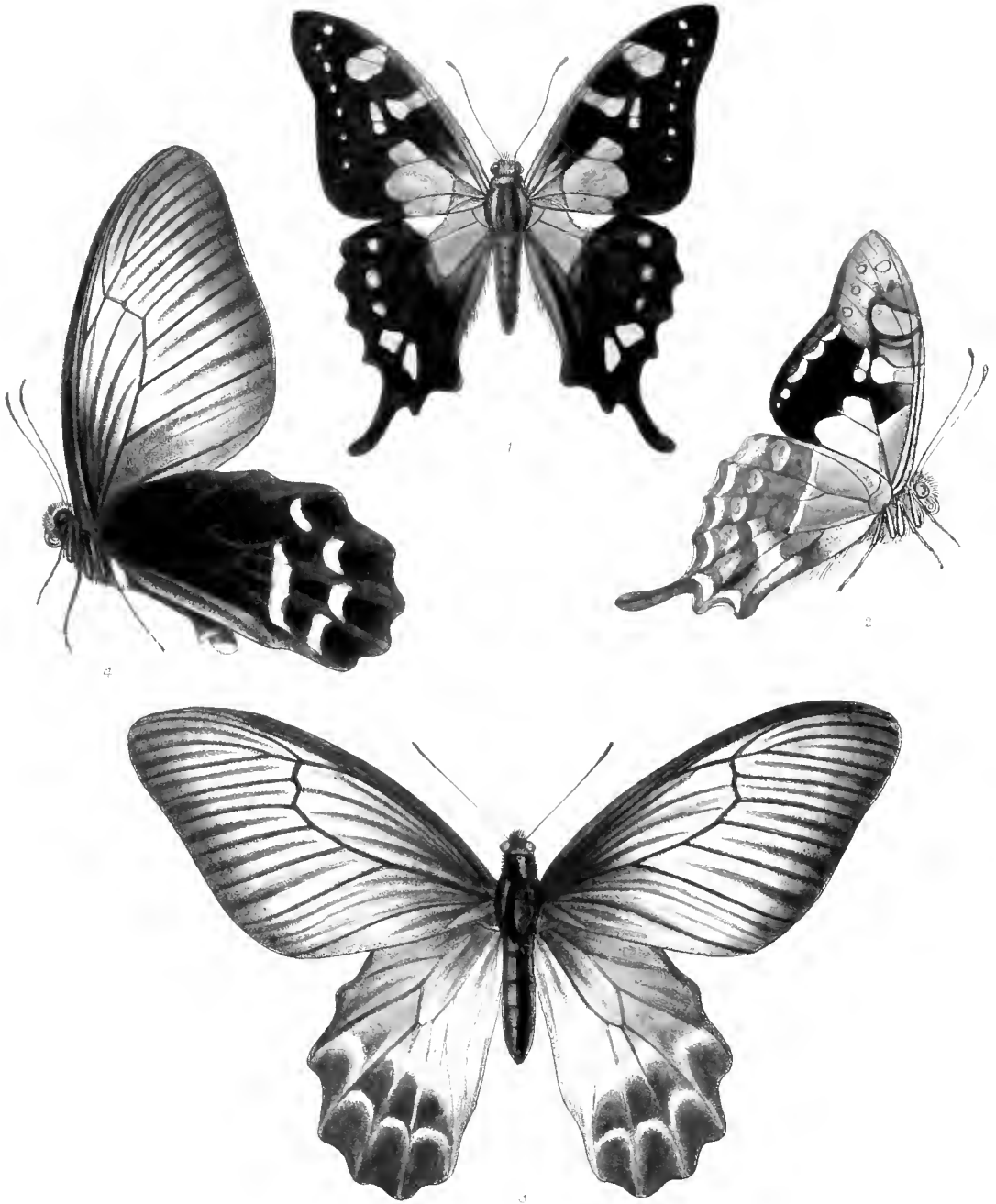
“*Male*. Fore wings above with the mark at the inner margin a third shorter than in *Mendana*: the two spots between the submedian and lower median veins very small, the anterior one scarcely visible, the posterior one subcircular; the spot between the third and second median veins almost point-like, the following one a little larger sublinear, the two next still a little larger; the spot before the upper discoidal and that behind the third subcostal veins are merged together with the small spots which stand in the same cellules not far from the apex of the discoidal cell. On the UNDERSIDE the discal markings between the second median and the submedian veins are obliterated; the preceding three spots are about equal in size, a little longer than broad; the following spots as above. Hind wings, above, with two white markings before the subcostal nervure, a very small white spot in the angle formed by the subcostal and upper discoidal veins, a green elongate mark in the cell, another mark a little longer, but narrower, between the lower median veins, and a very small linear spot between the upper median nervules; four minute submarginal whitish spots are feebly marked. Below, without a red subdiscal mark between the lower median veins and with a complete series of white submarginal spots.”

Hab. Rubiana (New Georgia), Solomon Islands (Woodford).

In the Collection of Mr. Grose-Smith.

“Differs from *Mendana* in the shorter hind wings, of which the white spots are more reduced, and in the smaller partly obliterated spots on the fore wings.” In the female, also in Mr. Grose-Smith’s Collection, similar differences occur.

PAPILIONIDAE
PAPILIO XXI.



Horace Knight del. lith.

West, Newman imp.

1 2 PAPILIO WEISKEI
3 4 " DIXONI

PAPILIONIDÆ.

PAPILIO. XXI.

XXXV. PAPILIO WEISKEI. Figs. 1, 2.

Papilio Weiskei, C. Ribbe, "Insecten Börse," XVII., p. 308 (1900), No. 39 ; "Iris," Band XIII., Heft. 2 (February, 1901).

Exp. $2\frac{3}{4}$ inches.

UPPERSIDE. Both wings brownish-black. Anterior wings with a large greenish-blue bar crossing the cell before its end and extending to the costa ; two other spots of a similar colour, tinged with violet in certain lights, on either side of the lowest discoidal nervule adjacent to the disco-cellular nervules, the upper of which is the largest ; a large subapical green spot a little beyond the end of the cell, crossing the subcostal nervules and subcostal nervure, where it is minute and nearly white ; a submarginal row of small bluish-white spots crossing the disc, of which that nearest the apex is the largest. On the disc, below the median nervure, is a large sub-basal cobalt-violet area, changing into green at the base, and indented outwardly on the lowest median nervule and submedian nervure. Posterior wings with a large basal white spot on the costa above the upper subcostal nervule, changing into green at the base, and a large green spot crossing the basal half of the cell ; two cobalt-blue spots between the median nervules towards the anal angle, the lowest of which is deeply indented outwardly ; above these is a submarginal row of pale spots more or less developed.

UNDERSIDE. Both wings pinkish-brown. Anterior wings with the spots as on the upperside, those on the discoidal nervules being nearly white, and those below the median nervure quite white, the basal half of the cell and the costa above it being green. Posterior wings with the basal half from the costa to the median nervure green, bounded externally by an irregular silvery-white band ; the disc is more or less irrorated by pinkish-white scales and mottled in places by a darker shade of the ground colour.

Hab. Aroa River, British New Guinea, at an altitude of 8,000 feet (Weiske).

In the Collections of the Hon. Walter Rothschild, Mr. Grose-Smith, and in Germany.
This remarkable and beautiful insect is nearest to *P. Marleyanus*, Leach.

XXXVI.—PAPILIO DIXONI. Figs. 3, 4.

Papilio Dixoni, H. Grose-Smith, "Annals and Magazine of Natural History," Ser. 7, Vol. VI. (August, 1900).

Exp. $4\frac{1}{2}$ inches.

Female. UPPERSIDE. Anterior wings rather pale fuliginous brown, darker at the base and the costal and outer margins; the dark areas more restricted than in the same sex of *P. Kühni*, Honrath, the veins and rays in the cell and between the veins also dark fuliginous brown. Posterior wings pale fuliginous brown, with the base and outer third darker; the crimson markings on the underside showing indistinctly through the wings.

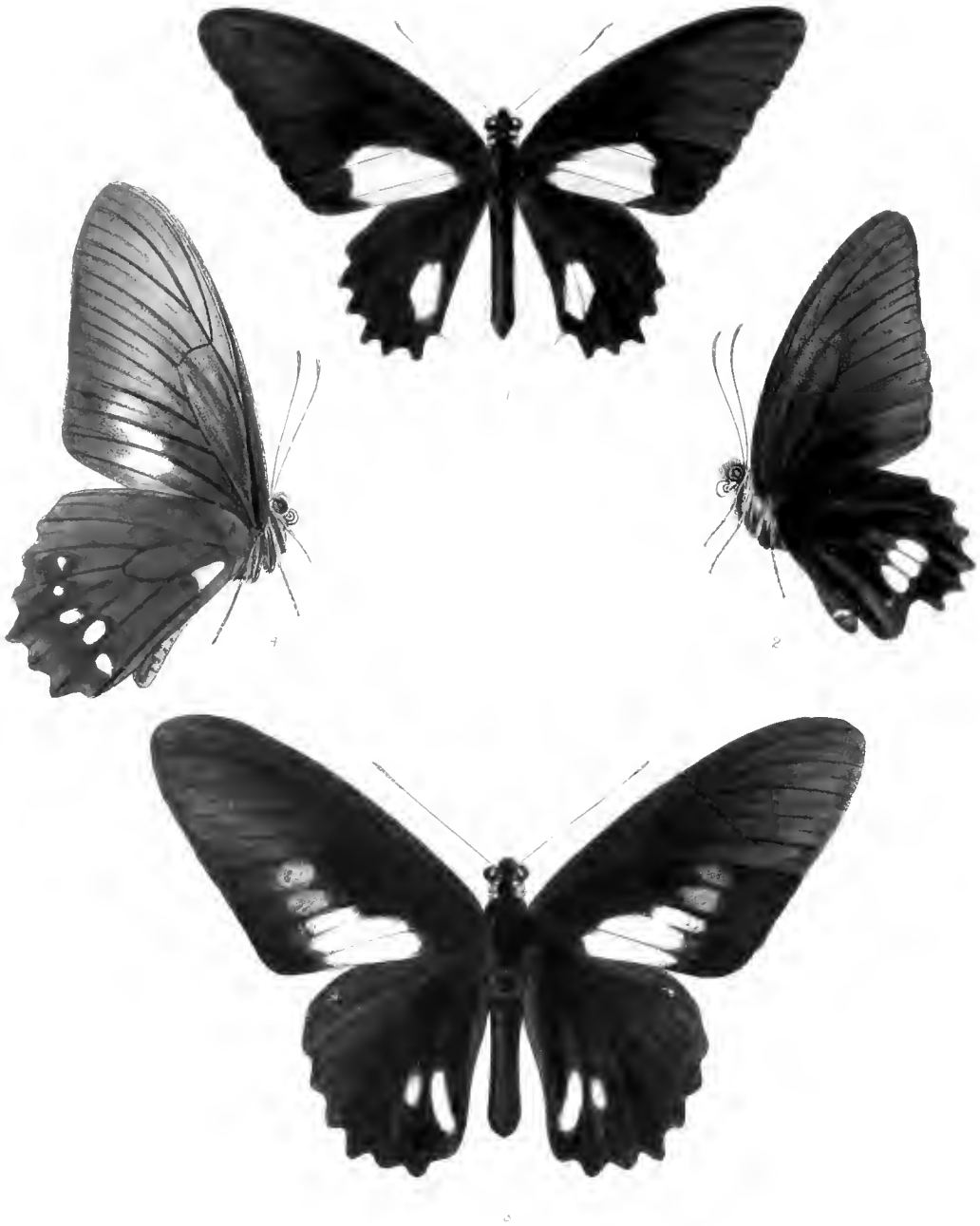
UNDERSIDE. Anterior wings as above. Posterior wings brownish-black, with a pale crimson irregular band a little beyond the cell, extending obliquely from near the abdominal margin to the upper median nervule, much narrower than the crimson band in a similar position on the underside of the posterior wings of *P. Kühni*; outside this band crossing the disc, between the veins, is a row of four large pale crimson humules, of which the first and fourth are the narrowest.

Hab. Bwool, North Celebes.

In the Collection of Mr. Grose-Smith.

Nearest to the female of *P. Kühni*, which it resembles in shape; it was captured by Mr. Frank Dixon about 30 miles inland at an elevation of 800 feet.

PAPILIONIDÆ.
PAPILIO XXII.



Hoo. Knight del et lith

West Newman sculp

1, 2 PAPILIO CUTORINA
3, 4 " HIPPASONIDES

PAPILIONIDÆ.

PAPILIO. XXII.

XXXVII.—PAPILIO CUTORINA. ♂. Figs. 1, 2.

Papilio Cutorina, ♂, ♀, Staudinger, "Iris," p. 139 (1898).

Papilio Mazeppa, ♀, H. Grose-Smith, "Rhopalocera Exotica," Part 47, Papilio XVII. (January, 1899).

Exp. $3\frac{1}{4}$ inches.

Male. UPPERSIDE. Anterior wings differ from the male of *P. Cutora*, Gray, in the olivaceous green patch being more extended towards the base and consequently less rounded in shape, with narrow white incisions between the veins on the outer margin. The Figure of *P. Cutora* in the "Catalogue of Lepidopterous Insects" in the British Museum, Plate X*, represents it without such incisions, and my specimen of it has only two incisions towards the outer angle, which are scarcely visible.

On the posterior wings the opalescent crimson spots are only two in number, of more uniform size than the spots in *P. Cutora*, which are three in number, the third spot of *P. Cutora* towards the middle of the disc being smaller than those nearer the inner margin.

UNDERSIDE. The anterior wings do not differ from *P. Cutora*. On the posterior wings is a row of four pinkish white spots; the three spots in the middle of the disc are somewhat elongate, subconical, and nearly equal in size; the fourth spot above the anal angle is minute. In *P. Cutora* there are also four spots, but they are bright pink in colour, the two spots between the median nervules being nearly uniform in size, but much smaller and less elongate than in *P. Cutorina*; the other two spots on the posterior wings of *P. Cutora*, towards the inner margin, are small and of equal size.

Hab. Iquitos (Buckley).

In the Collections of the late Dr. Staudinger and Mr. Grose-Smith.

I have already figured the female of this species under the name of *P. Mazeppa*, and a comparison of my specimens with the pair of *P. Cutorina* lent me by Dr. Staudinger has enabled me to place them together as sexes of the same species.

XXXVIII.—PAPILIO HIPPASONIDES. ♂. Figs. 3, 4.

Exp. $3\frac{7}{8}$ inches.

Male. UPPERSIDE. Anterior wings with the stramineous white patch on the disc in the middle of the inner margin larger and more extended towards the base. Posterior wings with two dull crimson spots, slightly suffused with purple towards the anal angle; the spot nearest the inner margin elongate and slightly concave on the side nearest the inner margin; the second spot between the lowest median nervule and the sub-median nervure smaller, further from the inner margin, irrorated by black scales, and more oval in shape; a minute white spot towards the apex.

On the UNDERSIDE the anterior wings differ little from *P. Hippason*, Cram., but the white patch is rather larger. On the posterior wings all the spots in *P. Hippason* are represented, but rather smaller in size, and they are more purplish than in that species.

Hab. Province Yungas, Bolivia (River Songo).

In the Collections of Dr. Staudinger and Mr. Grose-Smith.

I received this Insect from Dr. Staudinger under the above name, but I cannot find he has described it. I have, however, retained the name; it is a variety of *P. Hippason*, but scarcely a distinct species.

PAPILIONIDÆ.

PAPILIO XXII



Horace Knight del et lith.

Wells & Co. imp.

1	PAPILIO	MITHRAS.
2	"	NYMPHAS
3-4	"	CHAEORA
5	"	HERIA.

PAPILIONIDÆ.

PAPILIO. XXIII.

XXXIX.—PAPILIO MITHRAS. ♂. FIG. 1.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE. Both wings jet black. Anterior wings with three oval pale biscuit-coloured spots, one towards the apex, above the upper discoidal nervule, and two others on either side of the middle median nervule adjacent to the median nervule. Posterior wings with a large biscuit-coloured spot extending over the outer two-thirds of the cell, two small similarly coloured spots above, and two others below the cell, the spot nearest the inner margin four times the size of the others. Cilia between the veins narrowly white.

UNDERSIDE. Both wings dull black with spots as on the upperside.

Female resembles the male, but the anterior wings are rounder towards the apex; on those wings there is an additional spot above the lowest subcostal nervule, and an elongate spot in the cell on the inner side of the median nervule.

Hab. British Guiana (Parish).

In the Collections of the British Museum (two specimens) and of Mr. Grose-Smith (four specimens).

This species is very close to *P. Triopas*, Godt., which is a larger species, browner in the colour of the wings, the spots on which are yellower. My specimens of *P. Triopas* all have three subapical spots on the anterior wings, and on the posterior wings there are two small spots at the end of the cell, which are absent in both sexes of *P. Mithras*.

XL.—PAPILIO NYMPHAS. FIG. 2.

Exp. $2\frac{1}{4}$ inches.

Female. UPPERSIDE. Anterior wings brown, semi-transparent, with two very indistinct pale spots on the disc between the median nervules. Posterior

wings more blackish-brown, with six biscuit-coloured spots, one of which extends over the outer third of the cell, the others being clustered round it; outer margin narrowly white between the veins.

UNDERSIDE, as above.

Hab. Ecuador (Buckley).

In the Collections of the British Museum (two specimens; one from Para, captured by Mr. Bates, the other from "Amazons," captured by Mr. Wallace) and of Mr. Grose-Smith.

This species is very close to *P. Chabrias*, Hew., but is smaller, and on the anterior wings there are only two discal spots, instead of three or four spots as in *P. Chabrias*; and on the posterior wings the pale biscuit-coloured spot in the end of the cell is more extended inwardly.

XLI.—PAPILIO CHAROBA. FIGS. 3, 4.

Papilio Charoba, Kirby, "Trans. Ent. Society," 1881, p. 352 (July 6th, 1881).

Exp. $3\frac{1}{2}$ inches.

Male. UPPERSIDE "black; fore wings with a suffused yellowish-white band running from the inner margin parallel with the hind margin for half the breadth of the wing. The upper portion is narrowed and greenish. Hind wings with five oval scarlet spots running from the anal angle; inner margin narrowly edged with scarlet; incisions white. UNDERSIDE paler, base spotted with red; band of the fore wings reduced to two white spots, and an indistinct suffusion beyond; hind wings with five small pale pink spots."

Hab. Pastazza River, Ecuador (Buckley).

In Mr. Grose-Smith's Collection.

"Allied to *P. Cyanon*, Gray, but the pale band of the fore wings is shorter, broader, and less sharply defined; and *P. Cyanon* has four spots on the hind wings above and six below, instead of five on both surfaces."

XLII.—PAPILIO HERNANDO. FIG. 5.

Exp. 3 inches.

Male. UPPERSIDE. Both wings blackish-brown. Anterior wings with a badly-defined greenish-white patch which extends over the disc from the middle of the inner margin nearly to the lowest median nervule. Posterior wings with three spots on the disc, of which the spot nearest the abdominal margin is

crimson and quadrate in shape; the middle spot is smaller than the other two spots, and is crimson surmounted by greenish-white scales; the outer spot consists of a patch of greenish-white scales; incisions narrowly white.

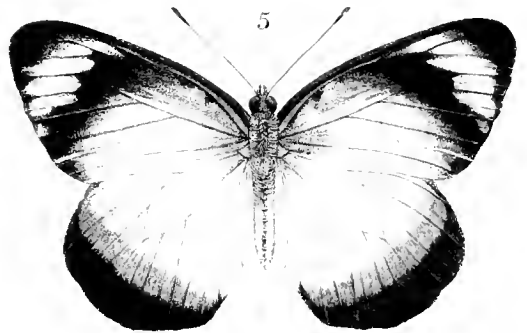
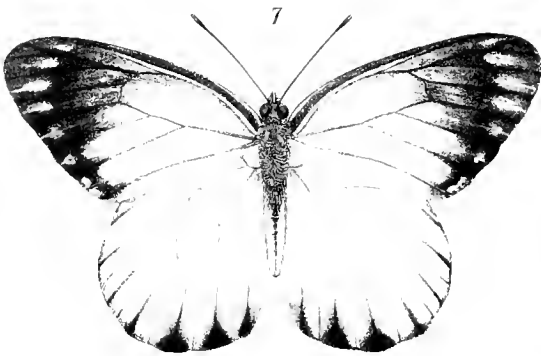
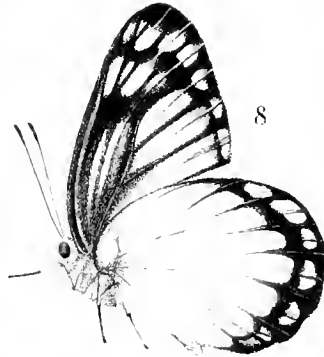
UNDERSIDE. Anterior wings brown, with a faint indication of the greenish-white patch on the inner margin. Posterior wings with four discal spots, of which the spot near the abdominal margin is pink; the other three spots are white, bordered on their lower edges by indistinct bars of pink scales; both wings with basal crimson spots.

Hab. Upper Orinoco.

In the Collection of Mr. Grose-Smith.

Nearest to *Papilio Ariarethos*, Esp., and *P. Aciatus*, Stgr., but quite distinct.

DELIA I.



Rose Monteiro del et lith 1888

Hanhart imp

1, 2 DELIAS NAKULA, ♂
3, 4 " " ♀

5, 6 DELIAS SALVINI, ♂
7, 8 " AGORANIS, ♂

PAPILIONIDÆ.—PIERINÆ.

DELIAS. I.

I.—DELIAS NAKULA. ♂. Figs. 1, 2. ♀. Figs. 3, 4.

Exp. $2\frac{1}{2}$ to $2\frac{3}{4}$ inches.

Male. UPPERSIDE creamy-white, anterior wings with the costa black to the level of the cell, where it expands into a broad triangular apical patch, indented by the nervures, and diminishing to a black edging at the hinder angle; a small black spot on the lower discocellular nervule, connected by a streak with the black apical patch. Posterior wings edged by a black line, within which they are slightly dusted with grey, and indistinctly spotted with black at the extremities of the nervules; the anal angle is slightly washed with yellow.

UNDERSIDE. Anterior wings black, apex with three transverse sulphur-yellow streaks, and two smaller ones, one beyond the first large one, and the other below the third; inner margin dusted with grey. Hind wings gamboge-yellow, a red streak at the base of the costa, narrowly edged with black above, and for half its length below; hind margin edged with a broad black line, expanding into triangular spots on the nervules, which are surmounted and connected by a series of sagittate spots with their extremities resting, or nearly resting, on them.

Female. UPPERSIDE yellow, inclining to orange, the base narrowly, and the apex of anterior wings from within the cell, and all the hind margins broadly black; anterior wings with a yellow dot on the lower discocellular nervule, and a short yellow streak on the upper one, and with two yellow subapical yellow dots.

UNDERSIDE yellow, anterior wings with the costa (narrowly) and the apex and hind margin black; cell dusted with dusky; hind margin divided by a curved row of seven spots, the three nearest the costa expanded into streaks. Posterior wings nearly as in the male, but of a darker yellow, the red streak is larger, hardly edged with black, the inner margin is dusted with dusky, and the submarginal sagittate spots are larger and more continuous.

Hab. Java.

In the Collection of Henley Grose Smith.

Allied to *D. Belisama*, Cram., but smaller than most of the described forms of this group.

 II.—DELIAS SALVINI. ♂. FIGS. 5, 6.

Delias Salvini, Butler, "Annals and Magazine of Natural History," ser. 5, vol. 10, p. 152 (August, 1882).

Exp. $2\frac{3}{4}$ inches.

Male. UPPERSIDE. Bluish-white. Anterior wings: costa narrowly black, apical half broadly black, but not so far as the hinder angle, and crossed near the apex by an oblique white band; posterior wings with a rather broad black border, and with the markings of the underside slightly showing through.

UNDERSIDE. Anterior wings black, with an oblique subapical white band; inner margin whitish. Posterior wings with the upper half yellow, and the lower half red, hind margin with a moderately broad black border, which sends off a branch from the apex across the extremity of the cell; and the intermediate space is of the darkest red.

Hab. New Britain.

In the Collections of the British Museum, and of Henley Grose Smith.

Allied to *D. Bagoë*, Boisdu.

III.—DELIAS AGORANIS. FIGS. 7, 8.

Delias Agoranis, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 266 (October, 1887).

Exp. $3\frac{1}{8}$ inches.

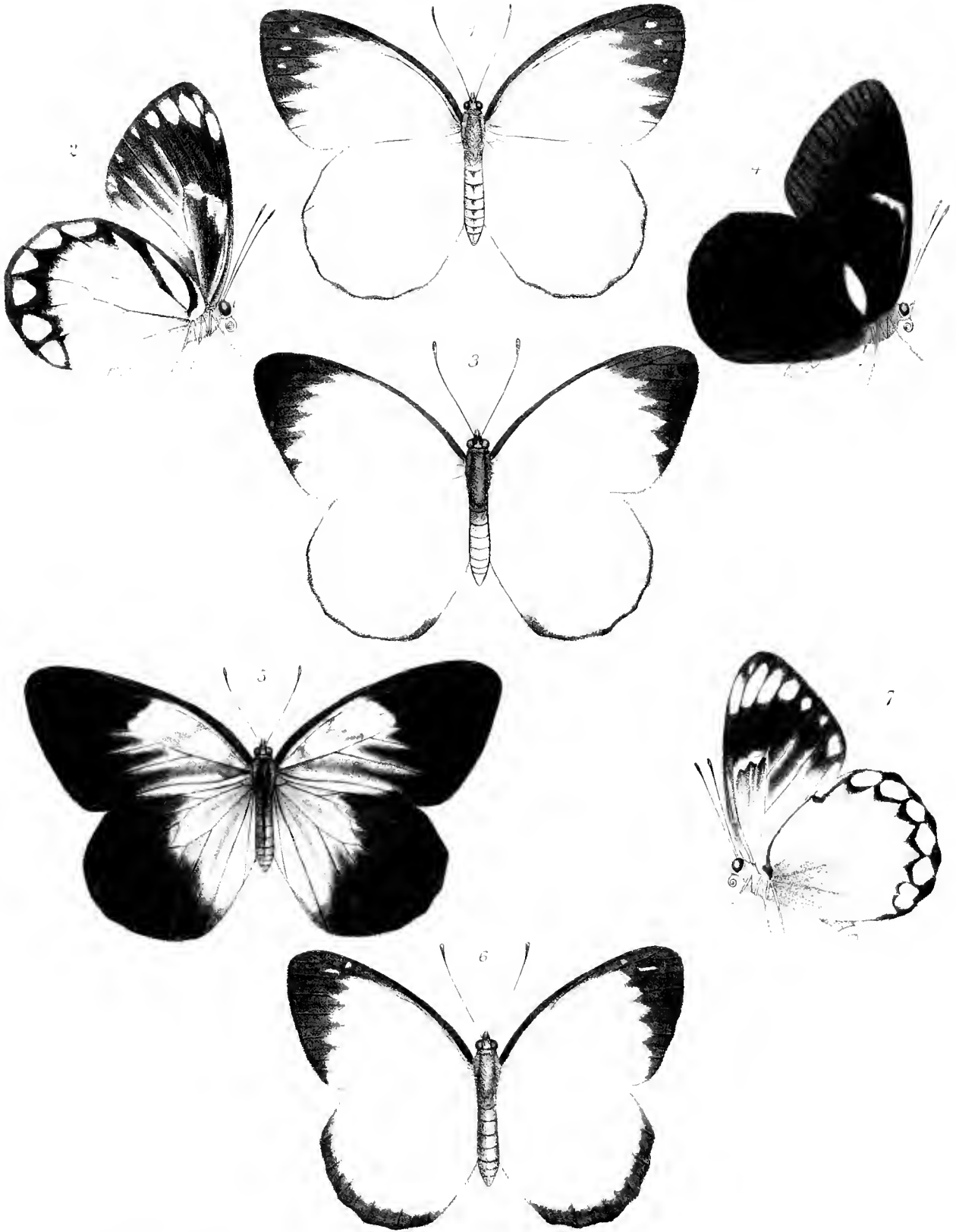
Male. UPPERSIDE. Anterior wings white, with the apical third grey, in the centre of which is a curved band of greyish-white spots, the lowest at the inner angle being on the margin; the veins and costa grey. Posterior wings creamy-white, with the colour and border on the underside showing through; three large triangular grey marginal spots at the tips of the second and third median nervules and of the submedian nervure.

UNDERSIDE. Anterior wings as above, but darker; a large dark grey spot at the end of the cell; extending broadly along the second discoidal nervule, between the outer band of grey spots and the cell are four oblong white spots, the first and third being the largest. Posterior wings bright yellow, broadly bordered with dark grey; in the middle of the border is a row of oval white spots, the uppermost tinted with yellow; on the inner side of the border the grey extends partially up the nervures." (H. G. S., *loc.*)

Hab. Burmah, Siamese frontier (Major Adamson).

In the Collection of Major Adamson.

Closely allied to *Delias Singhapura*, Wallace, which is in the Collection of Mr. Grose Smith and in the Hewitson Collection in the British Museum, from Singapore and Sumatra. *D. Agoranis* differs from *D. Singhapura* as follows: The apex of the anterior wings, and the hind margin of the hind wings are more distinctly spotted; on the under surface the posterior wings are of a paler yellow and the nervures less black, and on the anterior wings the white streaks between the discoidal cell and the row of submarginal spots are shorter and broader.



PAPILIONIDÆ.—PIERINÆ.

DELIAS. II.

V.—DELIAS EUMOLPE. ♂. Figs. 1, 2.

Delias Eumolpe, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 312 (1889).

Exp. $3\frac{2}{3}$ inches.

• *Male*. **UPPERSIDE.** Both wings pure white. Anterior wings with the apical third, costa, and base greyish black, the apical black area indented inwardly, and with three minute greyish-white spots between the discoidal and two upper median nervules. Posterior wings with the outer margins and ends of the veins narrowly black.

UNDERSIDE. Anterior wings greyish black, except on the inner margin, which is white, and the area below and extending somewhat beyond the cell, which is irrorated with white scales; a large, oblong, oblique, greyish-white spot at the end of and extending slightly above and beyond the cell, broadest at the upper end; near the apex a curved row of five conical spots, the four upper spots yellow, the fifth yellowish white, the first spot below the subvental nervule, the second minute, the third the largest, the fourth about the same size as the first, the fifth the smallest, followed near the margin by two short white lines between the two lowest median nervules, and two similar lines on the margin close together above the submedian nervule. Posterior wings bright yellow, with a broad marginal black band and black veins; in the band is a submarginal row of six red triangular spots between the veins, the uppermost situate below the first subvental nervule; a basal, broad, elongated red patch below the costal nervule; the costa at the base irrorated with yellow." (H. Grose Smith, *loc. cit.*)

Hab. Kina Balu Mountain, North Borneo (Whitehead).

In the Collections of Messrs. John Whitehead, H. Grose Smith, and Dr. Staudinger.

Allied to *D. Descombesi*, Boisduval, and *D. Bolisama*, Cramer.

VI. DELIAS INFERNA. ♂. Figs. 3, 4. ♀. 5.

Delias Inferna. Butler, "Lepidoptera Exotica," p. 63, pl. 24, fig. 6 (1871).
Exp. $3\frac{1}{4}$ – $3\frac{3}{4}$ inches.

Male. UPPERSIDE. Orange, anterior wings with the costa narrowly and the apical area rather broadly black; the inner edge of the border is indented by the ground-colour along the veins, and diminishes towards the hinder angle, before which it becomes linear. Posterior wings orange, with a narrow black border, broadest at the anal angle, and the costa and anal angle shading into sulphur-yellow.

UNDERSIDE. Black, anterior wings with the base of the costal nervure narrowly, and the discocellular nervules rather more broadly dusted with yellow; posterior wings with a large red spot at the base, forming a long oval, narrowest outwardly. Head, thorax, antennæ and legs black, more or less varied with grey; abdomen sulphur-yellow.

Female. UPPERSIDE. Black, anterior wings with the basal half, to beyond the cell (except along the costa), thickly dusted with yellow, the colour extending furthest along the nervures; the outer third of the cell, and a short space beyond covered with an orange patch, only slightly speckled with black. Posterior wings with the basal half thickly dusted with dull green, mixed with yellow at its furthest extension outwardly, and shading into pale brimstone-yellow along the inner margin.

UNDERSIDE. Black, anterior wings with an orange spot, covering the end of the cell; posterior wings with a red spot at the base as in the male.

Body brimstone-yellow, with a black longitudinal band on the back of the thorax; pectus blackish.

Hab. North-Western Australia and New Guinea.

In the Collections of the British Museum and of Mr. Henley Geese Smith.

Allied to *Delias Arma*, Boisduval.

The specimens figured here are from New Guinea. Mr. Butler has figured the underside of a female from N.W. Australia.

VII.—DELIAS BELISAR. ♂. Figs. 6, 7.

Delias Belisama, var. *Belisar*, Staudinger, "Iris," vol. 4, p. 78 (1891).

Exp. $2\frac{3}{4}$ inches.

Male. UPPERSIDE. Orange, with the costa, apex, and hind margin rather broadly black, diminishing to the hinder angle, where it ceases. The ground-

colour extends furthest into the border between the nervures. Towards the apex are two or three small patches of yellow scales. Posterior wings orange, rather paler on the costa and inner margin, and with a moderately broad black border, broadest before the anal angle: fringes yellow.

UNDERSIDE. Anterior wings black, with the incisures whitish; grey along the costal nervure, and for two-thirds of the length of the inner margin, the cell, and the base of the median nervules thickly dusted with yellow, and a more continuous stripe, dentated basally, on the discocellular nervules; a submarginal row of seven yellow spots, curving inwards towards the costa, between the nervures: the first three large and oval, and a short yellow dash nearer the apex between the second and third branches of the subcostal nervure; the fourth and seventh are round, and both nearly of a size, but much smaller than the first three; the fifth and sixth are round, and considerably smaller, the sixth being the smallest of all. Posterior wings orange, costal nervure rather broadly black, the space above yellow, and a long oval spot below; inner margin olive-green, hind margin black, and projecting inwards along the nervures, with a row of six large spots, yellower than the ground-colour, between the nervures, the last bisected by a black line along the fold; fringes more conspicuously yellow.

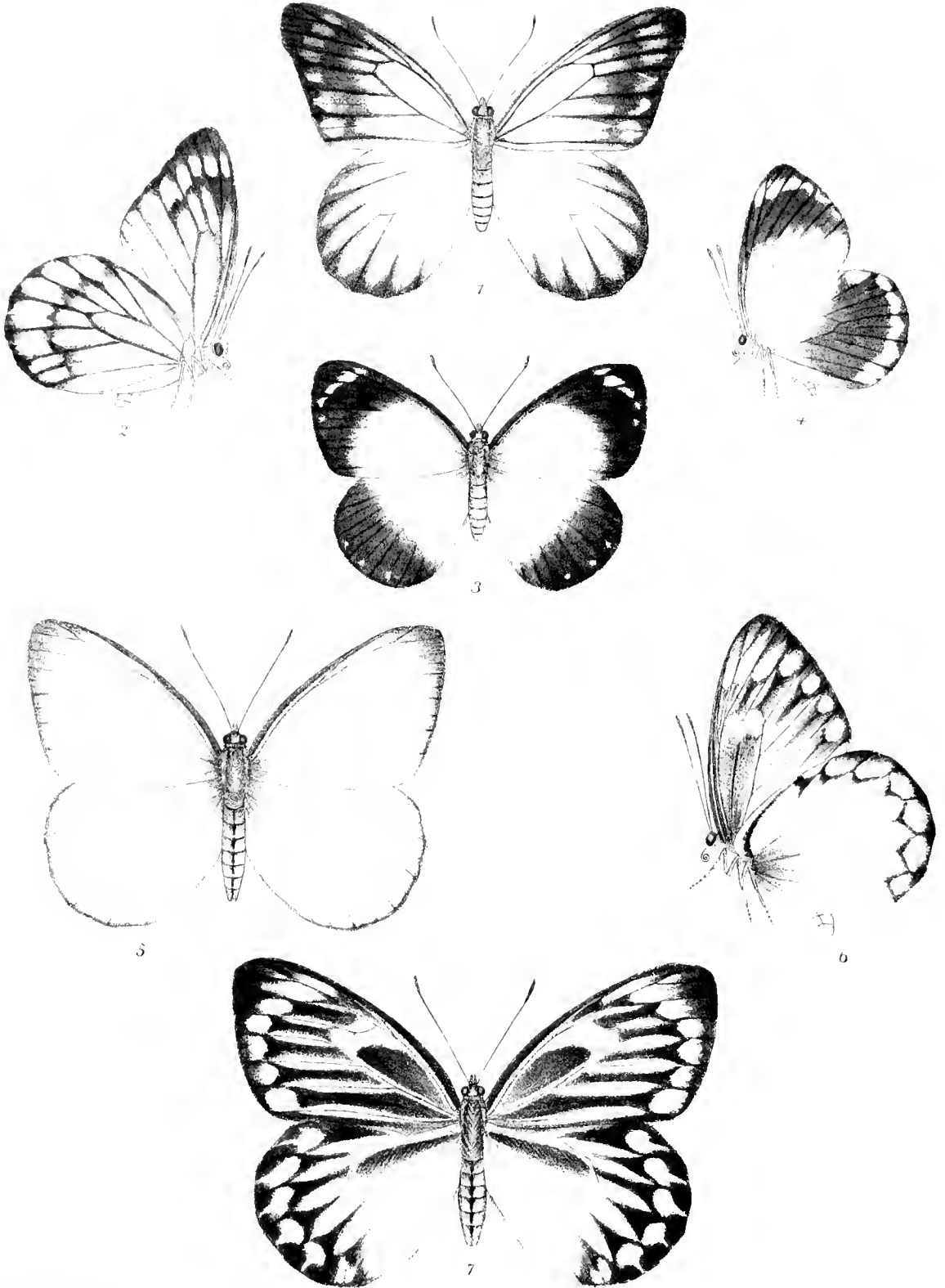
Body black, clothed with yellow hairs.

Hab. Java.

In the Collections of Dr. Staudinger and Mr. H. Grose Smith.

The specimen figured is from South Java; Dr. Staudinger's specimens were taken by Captain Holz at Lawang, in East Central Java, at an elevation of about 2,000 metres.

Dr. Staudinger treats this insect as a local form of the well-known *Delias Belisama*, Cramer. We hope to have an opportunity of figuring the female on a later plate.



1 DELIAS CINGHAPIFA ♀ 6 DELIAS ORAIA ♂
 2 " " 7 " " ♀
 3 " " 4 " " ♀
 5 " " 7 " " ♀

PAPILIONIDÆ.—PIERINÆ.

DELIAS. III.

VIII.—DELIAS SINGHAPURA. ♀. Figs. 1, 2.

Thya Singhapura, Wallace, "Transactions of the Entomological Society of London," ser. 3, vol. 4, p. 353, pl. vii, fig. 2. ♂. (1867.)

Exp. $2\frac{2}{3}$ inches.

Female. Anterior wings white, the nervures, especially the costal nervure, broadly black, the wing beyond the level of the end of the cell black, more or less thickly dusted with white between the nervures, and forming more distinct white submarginal spots towards the hinder angle; inner margin white nearly to the hinder angle. Posterior wings of a more yellowish white, the marginal third clouded with grey, and with an irregular black border extending inwards along the nervures.

UNDERSIDE. Anterior wings white, the nervures broadly brown, and the apical third brown, with a submarginal row of whitish spots, the uppermost yellow, and the second marked with yellow. Posterior wings yellow, broken into large spots by the broad black nervures, the outer half of the cell, and the adjoining spots inclining to whitish, an irregular festooned blackish submarginal band, dividing off a series of large submarginal yellow spots, of which those towards the anal angle are bordered with whitish.

Body white, thorax above grey, palpi above, and antennæ black.

Hab. Singapore (Wallace), North Borneo.

In the Hewitson Collection, and in that of Mr. Henley Grose Smith.

The specimen figured is from North Borneo. The male from the same locality differs little from Wallace's figure on the underside; while on the upper it differs from the female, which we have figured, chiefly in the more continuous pale dusting of the dark outer portion of the anterior wings, and in the narrower dusky border of the posterior wings.

IX.—DELIAS NIGIDIUS. ♀. Figs. 3, 4.

Delias Nigidius, Miskin, "Transactions of the Entomological Society of London," 1884, p. 93; "Proceedings of the Linnean Society of New South Wales," ser. 2, vol. 3, p. 1515 (1889).

Exp. $2\frac{1}{4}$ – $2\frac{1}{2}$ inches.

Female. UPPERSIDE white, dusted with blackish at base, and with broad, black borders and fringes. Anterior wings with the costa black to beyond the submedian nervure; apex beyond the cell, and hind margin black, as far as the hinder angle, except that the fringe of the whole inner margin is white. Apex with a curved row of from three to five white or yellowish spots. Posterior wings white, with the outer third black, and usually with three or four white submarginal dots between the nervures.

UNDERSIDE. Anterior wings white, yellow at the base, with the costa and apical third purplish-black; the colour, however, becomes linear towards the base and hinder angle. Subapical spots larger and more numerous, those nearest the costa yellow. Posterior wings purplish-black, lighter than on the anterior wings; base and inner margin yellow; a broad, white space along the costa, ceasing in an orange-yellow line at apex; a row of seven rather large submarginal dashes, the middle ones hardly separated by more than the nervures.

Body greenish-white, antennæ, palpi, and a line on the tibiæ and tarsi black.

Hab. Rockingham Bay and Johnstone River, North Queensland.

In the Collection of Mr. H. Grose Smith. Miskin considers this species to be allied to *D. Eumia*, Wallace. He describes the male as resembling the female, but with narrower borders.

X.—DELIAS ORAIA. ♂. FIGS. 5, 6. ♀. FIG. 7.

Delias Oraia, Doherty, "Journal of the Asiatic Society of Bengal," vol. 60, part 2, p. 189 (1891).

Exp. $2\frac{1}{2}$ – $3\frac{1}{4}$ inches.

Male. UPPERSIDE white, blackish towards the base, anterior wings with the costa black; apex and hind margin with a narrow blackish border, thickly dusted with white, and not extending to the hinder angle. Posterior wings with a black hind-marginal line, within which are more scattered blackish scales; inner margin slightly tinged with yellow towards the anal angle.

UNDERSIDE. Anterior wings grey, blackish towards the margins, a white band over the discocellular nervules, and the branches of the median nervure bordered with white, shading into grey between; a row of white submarginal spots between the nervures, the uppermost largest, and shading into yellow.

Posterior wings chrome-yellow, deepest in the centre; base broadly blackish, narrowing towards the costa; costal area black below, and yellowish above; space between the costal and subcostal nervures red, bordered below with yellow; and at the extremity commences a festooned black submarginal line, separating off a row of yellow spots on the rather imperfectly-defined black borders; tips of the fringes pale yellow.

Antennæ, palpi and legs black; tarsi clothed with dark slaty-grey hairs; abdomen whitish, marked with black above.

Female. **UPPERSIDE.** Greenish-black, with creamy-white markings, streaks bordering all the nervures, and a band covering the cell; a row of seven large pale submarginal spots between the nervures, which are lengthened, and curve inwards towards the costa.

Posterior wings with the pale markings more ochreous and connected, extending over the greater part of the wing; a broad, blackish border, extending inwards between all the nervures, and containing a series of seven hastate submarginal spots; a black dash in the cell; the inner marginal region glaucous. Tips of fringes yellowish.

UNDERSIDE. Anterior wings nearly as above, but darker, and with the upper submarginal markings much more extended, and tinged outside with yellow. Posterior wings resembling the male; but the markings are more of a dull orange-yellow, shading into buff on the upper part of the disk; there is a broad blackish space in the cell, and a larger suffused space adjacent to the inner margin; the submarginal spots are large, better defined, and of a dull orange-yellow, fringes narrowly yellow.

Body greenish above; antennæ and palpi above and below black; pectus deeper green; abdomen beneath white, with the extremity orange-yellow.

Hab. Sumbawa, Pura (Doherty).

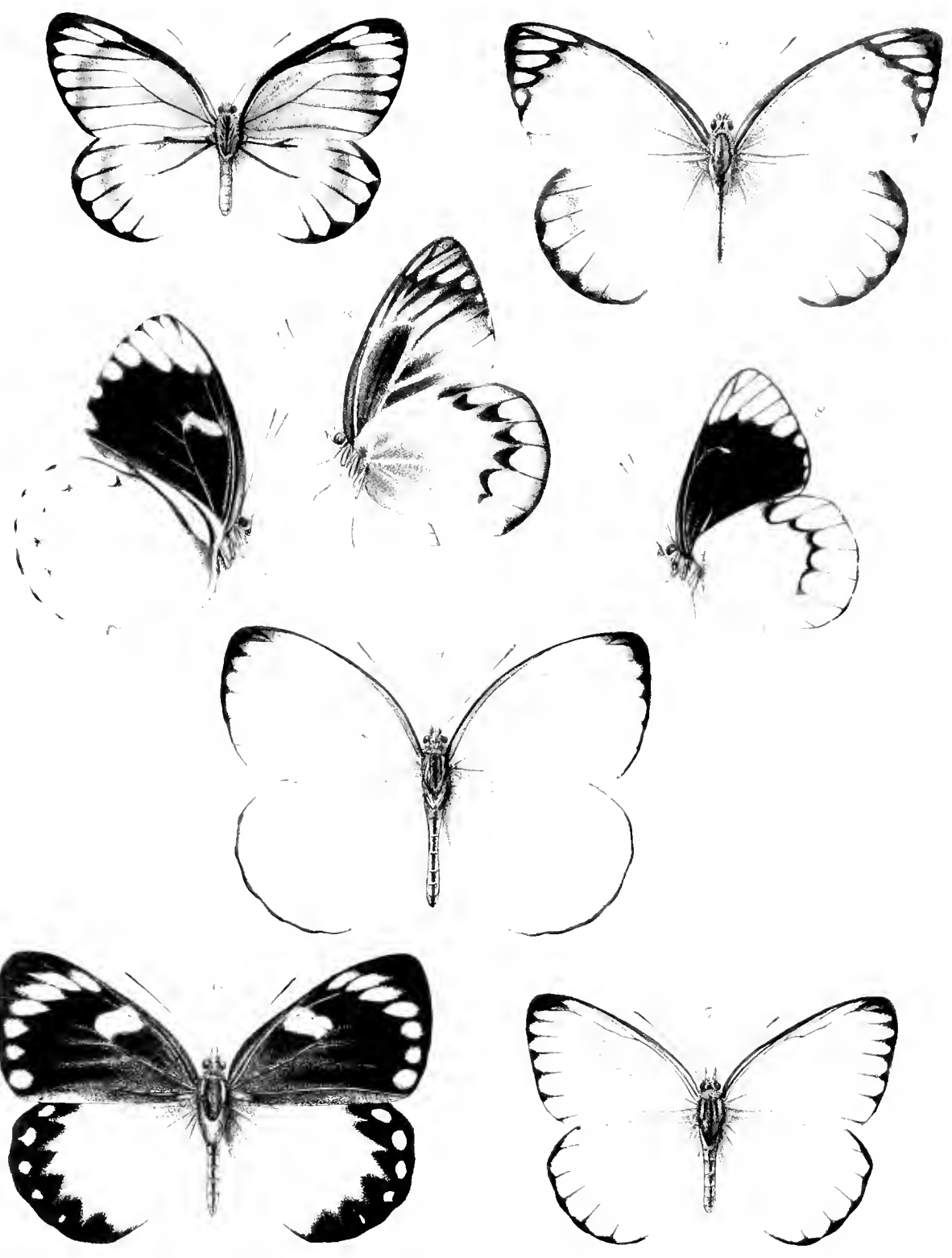
In the Collections of the Hon. Walter Rothschild and Mr. H. Grose-Smith.

A local form of *D. Descambesi*, Boisik. Doherty describes the five subapical lunules of the under-surface of the anterior wings as yellow, not white; but they are only slightly tinged with yellow in the male which we have figured. It differs from typical *D. Descambesi* beneath, however, in the greater extent of the grey colouring on the anterior wings, and in the lighter yellow of the posterior wings.

PAPILIONIDÆ.

PIERINÆ.

DELIAS IV.



Edwards del. & sculp.

West, Reamer & Co. sculp.

1 DELIAS FASCIATA ♀ 2 DELIAS SPLENDIDA ♀
 3 DELIAS CAMPAZANA ♂ 4 " " ♀
 5 DELIAS DOHERTYI ♀

PAPILIONIDÆ.—PIERINÆ.

DELIAS. IV.

XI. DELIAS FASCIATA ♀. FIG. 1.

Delias Fasciata, Rothschild, "Novitates Zoologica," I., p. 662 (September, 1894).

Exp. 3 inches.

Female. UPPERSIDE. Anterior wings grey, costa, hind margin, and apical third greyish-black, with a large yellowish band of six spots occupying two-thirds of the black area. Posterior wings greyish cream-yellow, with the pattern of the underside showing through, and a deeply-scalloped black border.

UNDERSIDE. Anterior wings yellowish-white, irrorated with grey scales, more yellow towards the base. Costa and apical third greyish-black, the latter occupied by seven large sulphur-yellow patches. Posterior wings bright yellow on basal two-thirds; outer third greyish-black, with seven large yellow patches, each of which is marked with a large scarlet patch on its upper end.

Head and thorax above grey, abdomen greyish-white; below, head grey, thorax greyish-yellow, abdomen white.

Hab. Sumba (October, 1891) (Doherty).

In the Collection of the Hon. W. Rothschild.

Belongs to the group of *D. Hierte*, Hübner.

XII.—DELIAS SAMBAWANA. ♂. FIGS. 2, 3.

Delias Sambawana, Rothschild, "Novitates Zoologica," I., p. 662 (September, 1894).

Exp. $3\frac{1}{4}$ inches.

Male. UPPERSIDE. Anterior wings greyish-white, costa, subapical band,

and upper two-thirds of hind margin greyish-black. Posterior wings greyish-white, with the pattern of the underside showing through; hind margin black.

Head, thorax, and abdomen greenish-grey.

UNDERSIDE. Anterior wings black, densely powdered with white scales; at the apex four white patches powdered with greenish-yellow scales, and at the hinder angle a large snow-white blotch. Posterior wings: basal two-thirds orange, powdered with dull greenish-yellow scales; outer third black, much powdered with yellow. In the centre of this black band is a row of large submarginal half yellow, half scarlet spots.

Head and thorax beneath feebly greenish-yellow; abdomen white.

Hab. Sambawa (September, 1891) (Doherty).

In the Collection of the Hon. W. Rothschild and H. Grose Smith.

Belongs to the group of *D. Hierte*, Hübner.

We think it probable that this species is the male of *D. Fasciata*.

XIII.—DELIAS SPLENDIDA. ♂. FIGS. 4, 5. ♀. FIG. 6.

Delias Splendida, Rothschild, "Novitates Zoologicae," I., p. 661 (September, 1894).

Exp. $3\frac{1}{4}$ inches.

Male. UNDERSIDE. Anterior wings creamy-white, with narrow blackish-grey costa and wider black apex, shading off into grey on the inner side; outer margin greyish-black from a thin powdering of black scales. Posterior wings creamy-white, with the hind margin narrowly blackish-grey, and the inner margin narrowly bright yellow, which colour extends to a streak at the anal angle: cilia of both wings yellow.

Antennæ black, head and thorax deep grey, abdomen whitish, heavily powdered with black scales.

UNDERSIDE. Anterior wings jet black with the costa and most of the nervures powdered with pale grey scales, and a large irregular grey patch at the end of the cell. Apex of wing, and a submarginal row of large spots bright golden-yellow. Posterior wings brilliant orange-yellow, with a marginal and submarginal row of small black marks. From the base of the wing, between the costa and the subcostal nervure, extends a large oblong fiery-red patch three-quarters of an inch long and bordered on each side with black.

Head greyish-white, thorax yellow, legs grey, abdomen white.

Female. **UPPERSIDE**. Fore wings black, inner margin, nervures and cell heavily powdered with white scales. A large irregular blotch of yellowish-white at the end of the cell, and from the costa to the hinder angle extends a semicircular submarginal row of large yellowish-white conical patches. Posterior wings yellowish-white, powdered at the base with dark grey, and with the outer fourth of the wings occupied by a wide black border, much indented on the inner side, within which is a row of five yellowish-white lunules.

Antennæ black, head and thorax olive-grey, abdomen deep blackish-grey, powdered with white.

UNDERSIDE. Anterior wings similar to the male, but the patch in the cell is larger. Posterior wings much paler and duller orange-yellow than in the male, and the submarginal row of black spots is larger and distinctly arrow-shaped.

Head white, thorax yellow, abdomen white.

Hab. Oinaisa, Timor (November and December, 1891), and Dili (May, 1892) (Doherty).

In the Collection of the Hon. W. Rothschild.

Belongs to the group of *D. Armut*, Boisduval.

XIV.—DELIAS DOHERTYI. ♂. Figs. 7, 8.

Delias Dohertyi, Rothschild, "Novitates Zoologicae," I., p. 661 (September, 1894).

Exp. 3 inches.

Male. **UPPERSIDE**. Creamy-white, with a black apex to the anterior wings, and a narrow black border to all the wings, the spots and markings on the underside showing through the wings.

Antennæ black; head, thorax and first two segments of abdomen greyish-olive; lower part of abdomen white, powdered with grey.

UNDERSIDE. Anterior wings jet black, with a minute white dot at the end of the cell. Subcostal nervure and base of cell strongly powdered with white and yellowish-green scales. Inner margin pale grey. Apical fourth of wing bright yellow with black nervures. Posterior wings bright golden-yellow; about

a third from the outer margin is a lunulated black transverse line, which extends down the veins to the outer margin, between which and the outer margin the yellow is splashed and streaked with scarlet, especially at the apex; outer margin black.

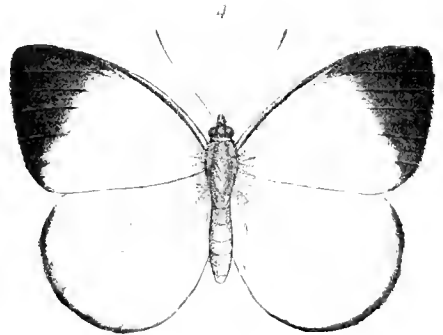
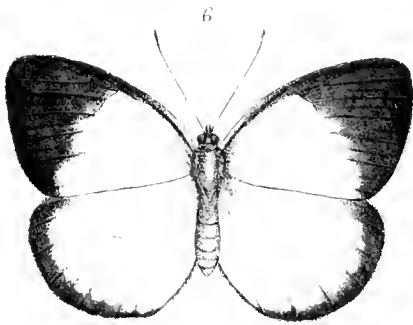
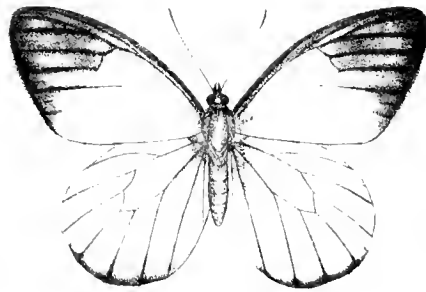
Head black, thorax yellow, abdomen white.

Hab. Dili (Fatunaba, 2,500 feet), Timor (Doherty).

In the Collection of the Hon. W. Rothschild.

One specimen only of this beautiful species was in the Collection

PAPILIONIDÆ,
PIERINÆ.
DELIAS V



M. Herman-Fisher del et lith

West, Newman imp

1 DELIAS GERALDINA ♂ 4. 5 DELIAS LADAS ♂
 2 3. " " ♀ 6 " " ♀
 7 S. DELIAS CATHARA ♂

PAPILIONIDÆ.—PIERINÆ.

DELIAS, V.

XV.—DELIAS GERALDINA. ♂. FIG. 1. ♀. FIGS. 2, 3.

Delias Geraldina, H. Grose Smith, "Novitates Zoologica," I. p. 585 (July, 1894).

Exp. 1 $\frac{3}{4}$ inches.

Male. UPPERSIDE white, with a slight greenish shade. Anterior wings with the costa and the apical third narrowly black, the dark border gradually narrowing to a point just above the hinder angle. Posterior wings white, with only the fringes black.

UNDERSIDE. Anterior wings white; dusted with grey at the base, and broadly along the costa, the colour narrowing beyond the first branch of the subcostal nervure, but throwing off a branch along the discocellular nervules, the apical area blackish, with a slight purplish tinge, the apex crossed by an oblique row of four pale spots, the uppermost pale yellow, the lower ones whiter. Posterior wings lemon-yellow, broadly dusky at the base, and on both sides of the subcostal and median nervures, but not as far as the costa; the nervures are brown, broadly bordered with whitish. The yellow portion of the wings shades externally into whitish, and there is a moderately broad purplish-brown border, dusted with whitish, and containing a row of large yellowish spots, that nearest the anal angle connected by yellow dusting with the yellow inner margin of the wing.

Female like the male. UPPERSIDE. Posterior wings with a narrow black border.

UNDERSIDE. Anterior wings with the border darker, and with four sub-apical spots. The dark bar on the discocellular nervules is absent. Posterior wings more yellow, with the border darker, and the yellow spots more sharply defined; the white edging to the nervures is also narrower.

Hab. Saddingburg, German New Guinea (Cotton and Webster, 1894).

In the Collections of the Hon. W. Rothschild and of Mr. H. Grose Smith.

This species is not closely allied to any described species; it somewhat approaches *D. Nigilius*, Miskin. The *female* is to be regarded as the type of this species.

XVI.—DELIAS LADAS. ♂ FIGS. 4, 5. ♀ FIG. 6.

Delias Ladas, H. Grose Smith, "Novitates Zoologicae," I., p. 585 (July, 1894).

Exp. $2\frac{1}{4}$ inches.

Male. UPPERSIDE white. Anterior wings with the costal margin very narrowly black to two-thirds from the base, the apical third black, the black area extending obliquely from the costal margin, a little beyond the end of the cell, to the outer angle, its inner edge being dusted with white scales. Posterior wings white, with the outer margin from a little below the first subcostal nervule to the anal angle narrowly black, rather more widely black in the middle, the inner edge of the black area dusted with white scales.

UNDERSIDE. Anterior wings with the costal margin more broadly black than on the upperside to the end of the cell; thence the black area covers the apical area obliquely to the outer angle; a little before the apex are three yellow spots placed obliquely between the veins, the middle spot the smallest, the lowest spot the largest; the cell and the rest of the discal area white. Posterior wings black, with the basal space above the costal nervule yellow; a narrow yellow streak on the margin above the first subcostal nervule at the apex, and an oblong yellow spot below it, a little before the margin.

Female. Like the male, but on the upperside the black area on both wings is more extended, and on the underside the yellow spots are rather larger.

Hab. Saddleberg, German New Guinea (Webster, 1894).

In the Collections of the Hon. W. Rothschild and of Mr. H. Grose Smith.

This butterfly belongs to the group of *D. Abuornis*, Wallace, and *D. Oranion*, Godman and Salvin. There were nine specimens in the Collection.

XVII.—DELIAS CATHARA. ♂. FIGS. 7, 8.

Delias Cathara, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 12, p. 34 (July, 1893).

Exp. $2\frac{1}{6}$ inches.

Male. UPPERSIDE lacteous white. Anterior wings with the apex and outer margin as far as the lowest median nervule black, shading internally between the veins into grey, the black and grey portion extending obliquely over the apical third of the wings, but not extending beyond the lowest median nervule. Except within the dark apical space and on the costa, the veins are white.

Posterior wings narrowly irrorated with grey on the outer margin from the anal angle to the extremity of the uppermost median nervule, the veins from the middle of the wing to the margin narrowly black.

UNDERSIDE. Anterior wings with the inner three-fourths white, the outer fourth to the lowest median nervule dark grey, centred with a curved band of whitish spots between the veins, the veins traversing the apical third, which on the upperside is black and grey, are black, the remainder, except the costal vein, being white. Posterior wings pale lemon-yellow, somewhat darker towards the base, nearly white towards the outer margin; a rather narrow dark grey band on the outer margin, centred with narrow lunular whitish spots between the veins; all the wings are narrowly and brightly black.

Hab. Kina Balu, North Borneo (Everett).

In the Collection of Mr. H. Grose-Smith.

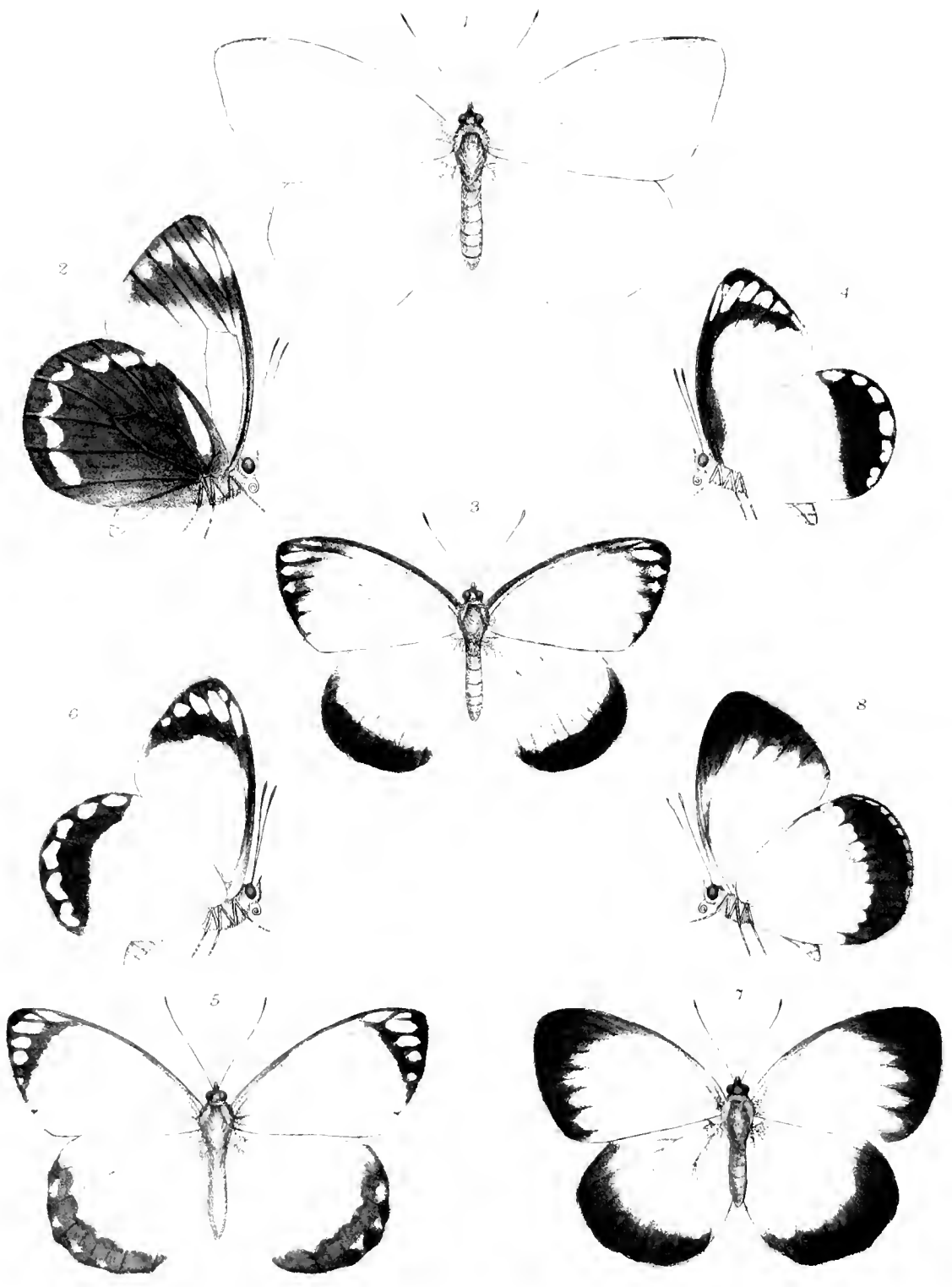
Allied to *D. Singhapura*, Wallace, but very distinct, especially on the underside.

FAUNA TROPICALIS.

PIERIDAE

PIERINAE

PIERINAE



1861. n. 1. Pier del et lit.

West, Newnan imp.

1. PIERIS FUNEREA ♂
2. PIERIS GEORGINA ♂

3. PIERIS SACHA ♂
7. PIERIS EURYXANTHUS

PAPILIONIDÆ.—PIERINÆ.

DELIAS. VI.

XVIII.—DELIAS FUNEREA. ♂. FIGS. 1, 2.

Delias Funerea, Rothschild, "Novitates Zoologicæ," I., p. 662 (Sept., 1894).

Exp. $3\frac{1}{2}$ inches.

Male. UPPERSIDE pure white, anterior wings with the costa, and the upper branch of the subcostal nervure narrowly black.

UNDERSIDE. Anterior wings white, costal area, and apical third black, the latter crossed by an oblique row of five large white spots. Posterior wings black, with a broad red stripe near the base below the subcostal nervure, and a submarginal row of seven almost connected angulated scarlet spots.

Head above, and legs black; the rest of the body white, except the thorax and base of abdomen, which are clothed with bluish-white hairs above.

Hab. Halmahera (Doherty, August, 1892).

In the Collection of the Hon. Walter Rothschild.

XIX.—DELIAS GEORGIANA. ♂. FIGS. 3, 4.

Delias Georgiana, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. XV., p. 228 (March, 1895).

Exp. $2\frac{1}{4}$ inches.

Male. UPPERSIDE. Anterior wings white, with the costal margin, costal and subcostal nervures black; the third subcostal nervule very broadly black; the apical area broadly black, the inner edge of which is irrorated with white, and extends rather obliquely as far as the extremity of the lowest median nervule, whence to the posterior angle it becomes linear; between the veins near the apex are five white streaks, of which the third is the longest and broadest, the others being more or less irrorated with black scales. Posterior

wings white, with the outer fourth from the apex to the inner margin black, the black area being widest in the middle, and its inner edge irregular and irrorated with grey scales.

UNDERSIDE. Anterior wings white, with the black area more extended than on the upperside, and invading the upper part of the cell, where, towards the base, it is irrorated with white and tinged with yellow; the upper discocellular nervule is black; the rows of white spots in the apical black area are much larger and more distinct than on the upperside and six in number, with a narrow marginal whitish streak between the two lowest median nervules. Posterior wings with the basal two-thirds yellow, shading into white towards the apex; the outer third black, with a submarginal row of six greyish-white bars, angulated externally in the middle.

Head and thorax black, clothed with long white hairs; abdomen white.

Hab. New Georgia, Solomon Islands (Captains Cayley Webster and Cotton).

In the Collection of Mr. H. Grose Smith.

Belongs to the group of *Delias Isse*, Cram. Described from a single specimen.

XX.—DELIAS SACHA. ♂. Figs. 5, 6.

Delias Sacha, H. Grose Smith, "Novitates Zoologicæ," II., p. 75 (1875).

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE. Both wings white. Anterior wings with a black apical patch, in which is situate a row of six white spots smaller than in *D. Pavilea*, Voll., the inner side of the black patch towards the costa being dusted with white scales and becoming obsolete. Posterior wings with an outer-marginal black band, irrorated with white scales on its inner edge; between the veins on the margin is a row of rather indistinct subtriangular white spots dusted with black scales, the lowest being between the two lowest median nervules, and almost obsolete.

UNDERSIDE. Anterior wings resemble *D. Pavilea*, but the white spots in the apical black area are more clearly defined, and are outwardly conical. Posterior wings lemon-yellow, bordered by a broad black band, but narrower and straighter than in *D. Pavilea*, in which is situate, nearer the margin than in that species, a row of subtriangular orange spots with their apices pointing

outwardly (not inwardly, as in *D. Pacifica*); above the anal angle the inner edge of the black area is narrowly tinged with orange.

Head black above, whitish below; antennæ black; thorax black, clothed with bluish-white hairs above; legs streaked with white; femora clothed with white wool; abdomen white.

Hab. Oji Island (Doherty).

In the Collection of the Hon. W. Rothschild.

This species is nearest to *D. Pacifica* on the upperside; on the underside it more closely resembles *D. Candida*, Voll., but the outer-marginal black band on the underside of the posterior wings is wider and extends to the apex. Described from two specimens.

XXI.—TACHYRIS EURYXANTHA. ♀. Figs. 7, 8.

Delias Abnormis, var. *Euryxantha*, Honrath, "Berliner Entomologische Zeitschrift," XXXVI., p. 435 (1892); *Delias Euryxantha*, Staudinger, "Deutsche Entomologische Zeitschrift: Iris (Dresden)," VII., p. 117 (1894).

Exp. $2\frac{3}{4}$ inches.

Female. UPPERSIDE greenish-white, inclining to yellow on the posterior wings, with broad black borders, extending from the middle of the costa of the anterior wings to the anal angle of the posterior wings.

UNDERSIDE. Borders as above. Anterior wings otherwise white, with the base of the cell greenish-yellow, and a red dash about the middle of the cell below the subcostal nervure. Posterior wings canary-yellow, with a row of red dashes between the nervures, on the inner side of the black border.

Body clothed with long greenish-white hair. The *male* is similar, but with narrower dark borders.

Hab. German New Guinea (Von Schönberg); Stephansort; Constantine Harbour (Kubary); Humboldt Bay (Doherty and Cayley Webster).

In the Collections of Mr. Grose Smith and others.

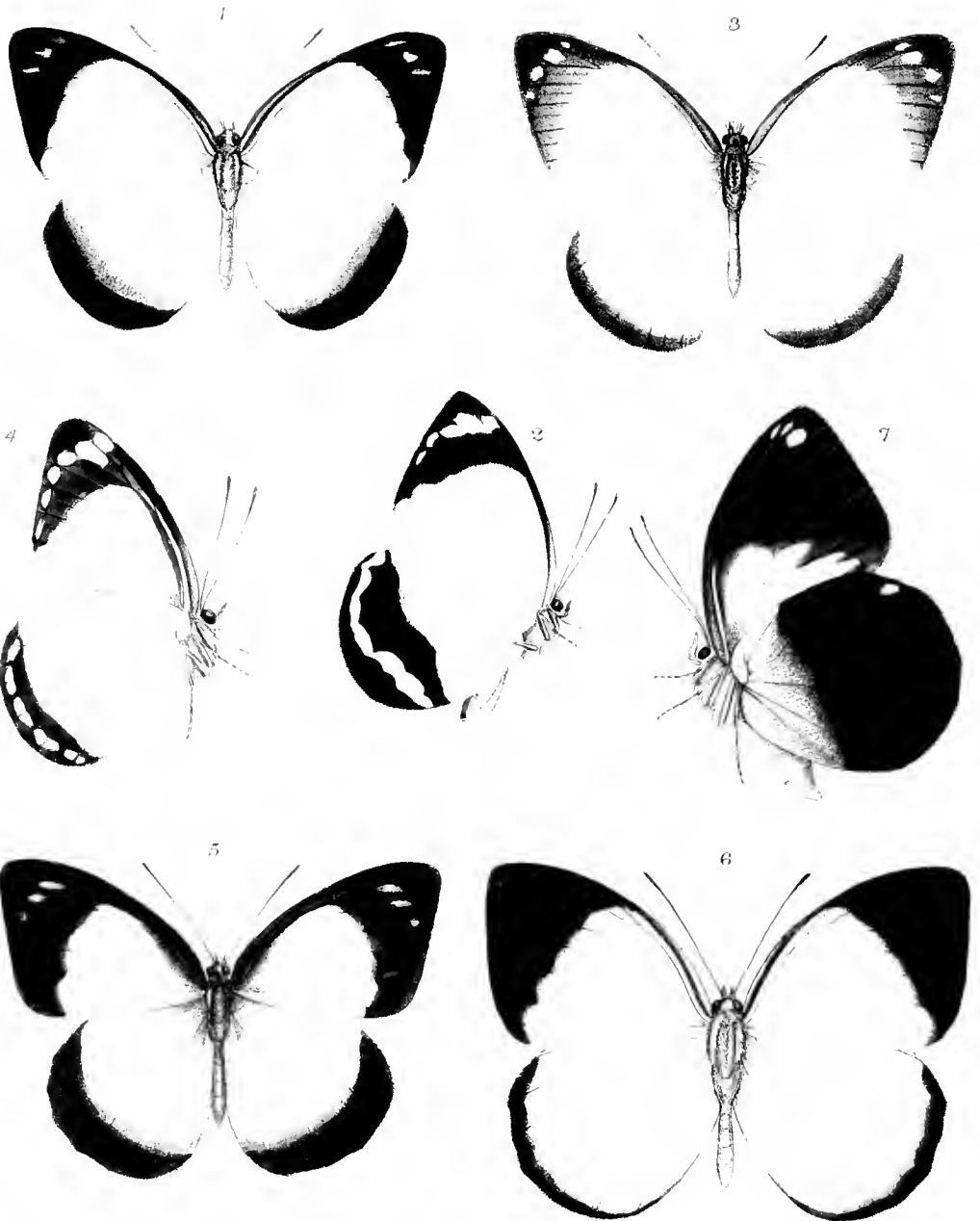
The German authors regard this species as either a local or seasonal form of *D. Abnormis* (Wallace). (See our figure *Tachyris Abnormis, antea*, vol. i., *Pierinæ*, pl. ii., figs. 6, 7; *Delias Abnormis* in text), which represents a female, and not a male. It may, however, be at once distinguished by the colouring of the undersurface.

Herr von Mitis points out ("Iris," VI., p. 114), that the four-branched subcostal nervure removes both *Abnormis* and *Euryxantha* from *Delias*.

PAPILIONIDÆ.

PIERINÆ

DELIAS VII.



H. K. H. et al.

Westwood et al.

1, 2. DELIAS MAGA, ♂
6, 7. " CALIBAN ♂.

3, 4. DELIAS CALLISTRATE, ♂
5 " " ♀

PAPILIONIDÆ.—PIERINÆ.

DELIAS. VII.

XXI.—DELIAS MAGA. ♂. Figs. 1, 2.

Delias Maga, H. Grose-Smith, "Annals and Magazine of Natural History," Ser. 6, Vol. XIX., p. 405, April, 1897.

Exp. $2\frac{2}{5}$ inches.

Male. UPPERSIDE. Anterior wings white, with costal margin narrowly and apical third very broadly black, the black area extending obliquely across the disk and narrowing to below the lowest median nervule, thence becoming linear to a little below the submedian nervure; two small clusters of white scales a little before the apex. Posterior wings with a black outer marginal band nearly three times as broad as in *D. Mysis*, Fabr., and other allied species or varieties.

UNDERSIDE. Anterior wings with the black area as on the upperside, in which a little before the apex is a row of five spots, of which the three upper spots are the largest, situate obliquely and coloured yellow; the two lower spots are white and smaller and narrower; base tinged with yellow. Posterior wings with a very broad marginal black band, sinuate on its inner edge, and extending over the outer third, in which is a row of seven contiguous red spots or lunules, (rather narrower than in *D. Mysis* and *D. Lara*, de Haan) which traverses the black band at about one-third from the outer margin; the basal half of the wings bright yellow, the yellow area extending over the whole of the cell and below it until reaching the black band.

Hab. Sud-Est, British New Guinea (Woodford).

In Mr. Grose-Smith's Collection.

Closely allied to *D. Mysis*, *D. Lara*, and *D. Crenulata*, Butl., but distinguished by the much broader black areas on both sides of the wings.

XXII.—DELIAS CALLISTRATE. ♂. FIGS. 3, 4. ♀. FIG. 5.

Delias Callistrate, II. Grose-Smith, "Annals and Magazine of Natural History." Ser. 6, Vol. XIX., p. 403, April, 1897.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE. Anterior wings white, with the apex broadly greyish-black, the black apical area extending from the costa at one-third from the apex, thence narrowing across the disk to a little below the lowest median nervule on the outer margin, base and costal margin narrowly grey; near the apex are two rather large white patches, with an indication of a smaller patch above and another below them. Posterior wings with a marginal greyish-black band extending from the anal angle to the lowest subcostal nervule.

UNDERSIDE. Anterior wings white, with the costal and apical areas more broadly black; in the black apical area are situate six spots, of which the three uppermost are yellow, the two nearest the costa are oval, the second being the largest, the third is more conical, the three lowest spots are nearer the margin and whiter and smaller. Posterior wings bright yellow, inclining to orange towards the anal angle, with the marginal black band wider than on the upper-side, in which are situate five yellow subconical spots, the spot nearest the anal angle almost obsolete, and the spot nearest the apex merging into the yellow area.

Female. UPPERSIDE. Both wings white, with the black costal and marginal bands much wider than in the male, and on the anterior wings extending broadly along the outer margin to the inner margin at about one-fourth from the outer angle; the white subapical patches on the anterior wings as in the male.

UNDERSIDE nearly as in the male, but all the spots are yellow, and on the posterior wings the yellow area is shaded with white and the yellow spots are larger and more conical.

Hab. Fergusson Island (Meek).

In the Collections of the Hon. Walter Rothschild and Mr. Grose-Smith (types male and female).

Nearest to *Delias Georgiana*, Grose-Smith, *D. Jobitana*, Oberth., and *D. Sacler*, Grose-Smith.

XXIII.—DELIAS CALIBAN. ♂. Figs. 6, 7.

Delias Caliban, H. Gröse-Smith, "Annals and Magazine of Natural History," Ser. 6, Vol. XIX., p. 404, April, 1897.

Exp. $2\frac{3}{4}$ inches.

Male. UPPERSIDE, does not differ from *D. Lulus*, Gröse-Smith.

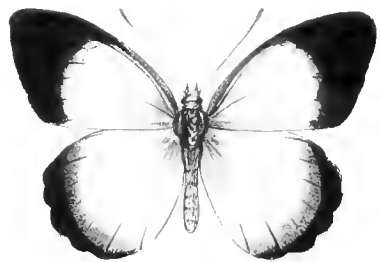
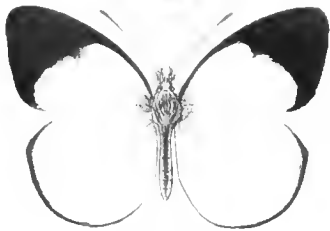
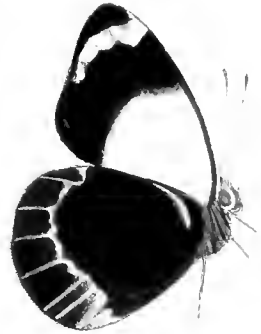
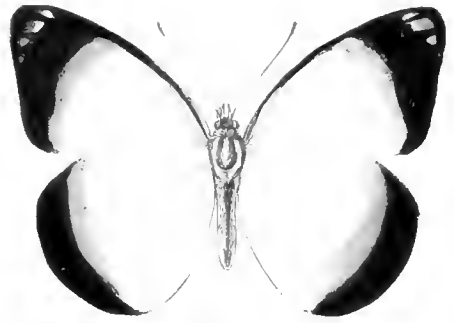
UNDERSIDE. Anterior wings differ from those of *D. Lulus* in the black area being more extended, only the basal two-thirds of the cell and the space below it to the inner margin being white, the white area extending obliquely over the lower part of the disk, but ceasing on the inner margin before the outer angle. Posterior wings black, with the basal third densely irrorated with yellow scales from the costal margin at one-third from the base, thence transversely across the cell to the inner margin a little above the anal angle; the yellow subapical spots on both wings are almost identical with those on the underside of *D. Lulus*.

Hab. Fergusson Island (Meek).

In the Collection of the Hon. Walter Rothschild.

D. Caliban is a much larger insect than *D. Lulus*; the irrorated yellow basal area on the underside of the posterior wings is a very distinct feature, apart from other differences.

Two examples were in the Collection.



1	1871	1871	1871
2	1872	1872	1872
3	1873	1873	1873
4	1874	1874	1874
5	1875	1875	1875
6	1876	1876	1876
7	1877	1877	1877
8	1878	1878	1878
9	1879	1879	1879
10	1880	1880	1880

1871
 1872
 1873
 1874
 1875
 1876
 1877
 1878
 1879
 1880

PAPILIONIDÆ.—PIERINÆ.

DELIAS. VIII.

XXIV.—DELIAS NEYI. ♂. Figs. 1, 2.

Delias Neyi. Ribbe, "Insecten Börse," XVII., p. 308 (1900); "Iris," Vol. XIII., Heft 2, Plate VIII., p. 339.

Exp. $2\frac{3}{4}$ inches.

Male. UPPERSIDE. Anterior wings black, with a large white patch on the inner margin from near the base to a little before the outer angle, extending upwards to the median nervure and slightly invading the cell. Posterior wings with the basal three-fourths white and the outer fourth black, the black area narrowest towards the anal angle and gradually widening to the apex, its inner edge diffused and irregular.

UNDERSIDE. Anterior wings black, with a white diffused patch on the middle of the inner margin extending upwards, but not reaching the median nervure, the white area being more restricted than on the upperside, a diffused greyish-white curved band before the apex, the veins crossing it being black. Posterior wings black, with a very large circular orange patch covering the middle of the disc and the outer two-thirds of the cell, a black oval spot in the interspace between the two upper median nervules, a white streak in the middle of the outer margin above the orange patch, and a sub-basal white streak.

Hab. Aroa River, British New Guinea.

In the Collections of the Hon. Walter Rothschild (Type) and H. Grose-Smith.

This species is very close to *Delias Albertisi*, Oberth., and I should not be surprised if it should be proved to be the male of that species. Monsieur Oberthur believes his type to be a female, and I have not heard that a female of the species here figured has yet been captured. The specimen figured by Herr Honrath in the "Berliner Ent. Zeitschrift," Vol. XXX., under the name of "Discus," a synonym of *D. Albertisi*, is also a female.

XXV.—DELIAS NIEPELTI. ♂. FIGS. 3, 4.

Delias Niepelti, Ribbe, "Insecten Börse," XVII., p. 330.

Exp. $2\frac{2}{3}$ inches.

Male. UPPERSIDE. Both wings white, very broadly bordered by black, the junction of the black with the white areas densely and broadly irrorated by white scales. On the anterior wings the yellow on the underside shows faintly through the wings, the costal margin is narrowly black, and a little before the apex, in the black area, between the veins, is a row of four greyish-white patches, of which the second from the costa is the largest and the lowest is the smallest.

UNDERSIDE. Anterior wings with the basal half bright orange-yellow, the costa narrowly black, the outer half of the wings bright black with a row of five subapical lunular yellow spots irrorated by black scales; the two spots nearest the costa are farthest from the apex, and the two lowest spots are nearer the outer margin than the middle spot. Posterior wings bright black, with the disc crossed about its middle by a narrow sinuate line which is diffused greyish-white on the costa, changing into yellow between the discoidal and median nervules, and again changing to greyish-white (broadly diffused outwardly) to the inner margin, the veins crossing the wings from the sinuate line to the outer margin greyish-white, a sub-basal greyish-white streak below the costal nervure tinged with yellow scales towards the base.

Hab. Aroa River, British New Guinea.

In the Collection of the Hon. Walter Rothschild.

XXVI.—DELIAS KUMMERI. ♂. FIGS. 5, 6.

Delias Kummeri, Ribbe, "Insecten Börse," XVII., p. 308; "Iris," Vol. XIII., Heft 2, Plate VIII., p. 340.

Exp. 2 inches.

Male. UPPERSIDE. Both wings white, anterior wings with the costa and apical third black, the apical black area gradually narrowing to the submedian nervure, whence to the outer angle it becomes linear; the outer margin of the posterior wings is narrowly black.

UNDERSIDE. Anterior wings as on the upperside, with an oblique subapical straight band of yellow spots divided by the black veins, the spots nearest the costa the largest.

Posterior wings black, with a large suboval white patch extending over the upper part of the wings from the apex and the outer margin, extending over the outer two-thirds of the cell, and a little below it to the lowest median nervule, the interspace between the two lowest median nervules being partially invaded by the black area. This latter is crossed from the second median nervule to the submedian nervule by a rather broad crimson bar divided into three by the black veins; below the median nervule, towards the base, is an oval crimson spot, and below the costal nervule is a broad crimson band towards the base, and a shorter crimson band beyond it, on the costal margin, towards the apex.

Hab. Aroa River, British New Guinea.

In the Collections of the Hon. Walter Rothschild (Type) and H. Grose-Smith.

XXVII.—DELIAS ITAMPUTI. ♂. Figs. 7, 8.

Delias Itamputi, Ribbe, "Insecten Börse," XVII., p. 330.

Exp. $1\frac{3}{4}$ inches.

Male. UPPERSIDE closely resembles *D. Kummeri*, but on the anterior wings the apical black area is more extended and reaches to the inner margin at the outer angle. On the posterior wings the outer margin is more broadly black.

UNDERSIDE. Anterior wings as on the upperside, with a subapical row of spots as in *D. Kummeri*, but rather further from the apex and more macular, the lower spots becoming obsolete.

Posterior wings black with a large white spot in the middle of the costal margin extending slightly into the cell and a little below the second subcostal nervule at its base, a submarginal row of white bars on the disc between the veins, and a broad yellow band on the shoulder at the base.

Hab. Aroa River, British New Guinea.

In the Collection of the Hon. Walter Rothschild.

XXVIII.—DELIAS CUNINGPUTI. ♂. Figs. 9, 10.

Pieris Cuningputi, Ribbe, "Insecten Börse," XVII., p. 308.

Exp. $2\frac{1}{8}$ inches.

Male. UPPERSIDE. Anterior wings with the basal two-thirds greyish-

white, the outer third black, the black area extending to the inner margin at about three-fourths from the base, two minute subapical white spots. Posterior wings, basal three-fourths greyish-white and outer fourth black, the inner edge of the black area densely dusted with white scales, the outer margin indented between the veins, and with narrow white incisions.

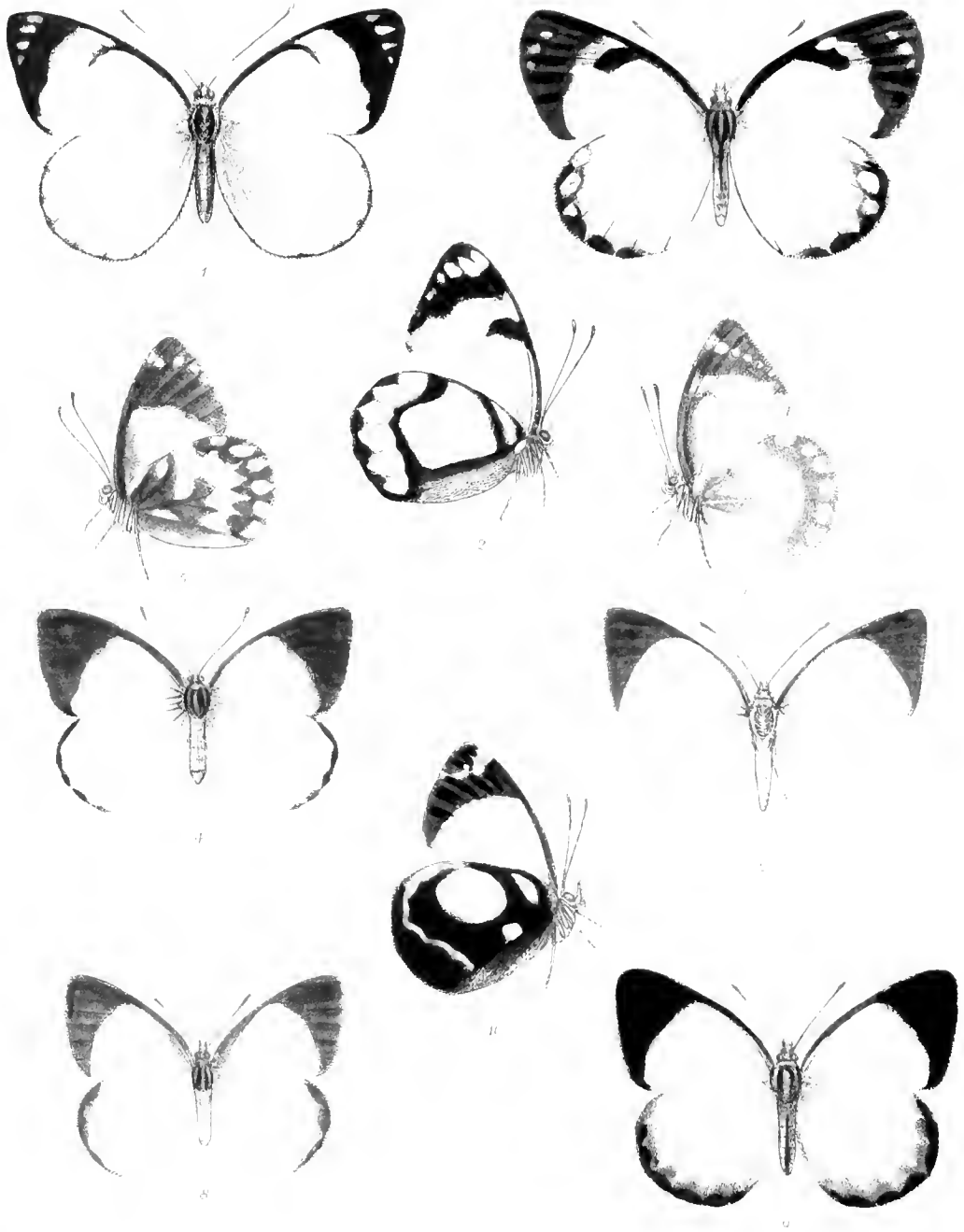
UNDERSIDE. Anterior wings greyish-black, with a subapical sinuate row of five conical yellow spots, inside which, about half-way between this row and the end of the cell, is a subcostal greyish-yellow spot. Posterior wings dark sericeous grey, with a broad white curved band crossing the wings from the costa, about its middle, to the inner margin a little above the apex, where it becomes almost obsolete, this band is deeply indented on either side by the grey ground colour. Beyond the band the disc is crossed by a row of subconical yellow spots with their apices extending outwardly and narrowly to the outer margin; in the basal dark area is a yellow spot on the shoulder, another below the costal nervure, another in the cell a little above its middle, and two others in the interspaces below the median nervure, the basal area being more or less densely irrorated with yellow scales; outer margins of both wings narrowly white between the veins.

Hab. Aroa River.

In the Collections of the Hon. Walter Rothschild and H. Grose-Smith.

Herr Ribbe has placed this species in the genus "Pieris," but I think it should be placed in the genus *Delias*.

PAPILIO RHODE
 FIG. 104
 DELLAS



1. a. Length 1.75 in.

W. Newman imp.

1. DELLAS ULTIS ♂
 ♀
 4. 8. " ARCHE ♂

6. 7. 101. S. A. EXEPI ♂
 ♀
 3. 11. " MIRILICA ♀

PAPILIONIDÆ.—PIERINÆ.

DELIAS. IX.

XXIX.—DELIAS ILTIS. ♂. Figs. 1, 2. ♀. FIG. 3.

Delias Iltis, Ribbe, "Insecten Börse," XVII., p. 346.

Exp. 2 $\frac{3}{8}$ inches.

Male. UPPERSIDE. White, anterior wings with the costa, a streak extending over the disco-cellular nervules, and the apical fourth black, two or three indistinct white spots in the black area a little before the apex. Posterior wings white, outer margin narrowly black, but rather wider at the ends of the veins.

UNDERSIDE. Anterior wings white, with the black streak on the disco-cellular nervules very wide, the costa more broadly black than on the upperside, and the black apical area very irregular on its inner edge; in the black area is a row of yellow spots, the three uppermost of which are the largest, those below them nearer the outer margin and diminishing in size; posterior wings yellowish-white in the middle with a rosy orange tinge in the cell; around the central white area is a broad black band, subquadrate, and very narrow about the middle of the costa, base black with an elongate yellow band below it; on the disc outside the black band, is a red bar intersected by the black veins, outside which is a row of six conical white spots, with the apices pointing outwardly and dividing the broad black outer margin, the area between the sub-median nervure and the abdominal margin is black, densely irrorated by yellow scales; abdomen grey above, white below, antennæ black above, white below, club yellow below.

Female. Anterior wings with the disco-cellular streak very much wider than in the male, and the black apical and outer-marginal area much more extended. Posterior wings with a much wider outer-marginal black band intersected by the white conical spots of the underside.

Hab. Aroa River, British New Guinea.

In the Collection of the Hon. Walter Rothschild.

XXX.—DELIAS AROÆ. ♂. FIGS. 4, 5.

Pieris Aroæ, Ribbe, "Insecten Börse," XVII., p. 346.

Exp. $1\frac{3}{4}$ inches.

Male. UPPERSIDE. Anterior wings white, the costa and apical third black, the inner edge of the black area undulated. Posterior wings white, with the outer margin narrowly black interrupted between the median nervules.

UNDERSIDE. Anterior wings white, with the base basal half of the cell costa and apical third greyish-black; in the black area towards the apex is an irregular row of pale yellow spots, the two spots nearest the apex being situate the farthest from the outer margin, the others gradually diminishing in size and becoming obsolete towards the outer angle. Posterior wings pale yellow, with the basal third greyish-black, the outer edge of the dark area very irregular, costa at the base yellow, a yellow spot above the subcostal nervure, another below it in the cell, which it nearly divides, and a third in the interspace above the sub-median nervure near the base; the outer third is greyish-black, with its inner edge deeply indented on the veins by the yellow ground colour of the central part of the wings; a marginal row of yellow spots between the veins which are subconical with the apices on the outer margin.

Hab. Aroa River, British New Guinea.

In the Collection of the Hon. Walter Rothschild.

Nearest to *D. Geraldina* Grose-Smith, and the following species.

XXXI.—DELIAS WEISKEI. ♂. FIGS. 6, 7. ♀. FIG. 8.

Delias Weiskei, Ribbe, "Insecten Börse," XVII., p. 329.

Exp. 2 inches.

Male. UPPERSIDE. Both wings white, anterior wings with a blackish-grey apical area less extended than in *D. Aroæ*, and not quite reaching to the outer angle.

UNDERSIDE. Anterior wings with the apical area, the costa, the upper part of the cell and the disco-cellular nervules glossy grey.

Posterior wings pale yellow, the basal part of the cell and a space above and below it very pale grey, the grey area in the cell being indented by the

yellow ground colour, a broad pale grey band on the outer margin, in which between the veins is a series of pale yellow conical spots with their bases near the outer margin.

Female. Upperside with the dark apical area on the anterior wings more extended than in the male. The posterior wings are bordered by a dark grey band, widest at the apex and narrowing to the lowest median nervule, where it becomes obsolete.

On the underside the disco-cellular nervules on the anterior wings are not marked with grey; otherwise the wings are as in the male.

Hab. Aroa River, British New Guinea.

In the Collection of the Hon. Walter Rothschild.

Very close to *D. Geraldina*, but in the female of *D. Weiskei* the black marginal border of the posterior wings does not extend round them as is the case in that sex of *D. Geraldina*.

XXXII.—DELIAS MIRIFICA. ♂. Figs. 9, 10.

Tachyris Weiskei, Ribbe, "Insecten Börse," XVII., p. 330.

Exp. 2 inches.

Male. UPPERSIDE. Anterior wings white, with the bright orange colour of the underside showing faintly through the wings, the apical third is black, the inner edge of the black area (which extends from the costa, at one-third from the apex to the outer angle) more regular than usual, slightly curved, and irrorated by white scales, costa rather narrowly black. Posterior wings white, with an outer-marginal black band, the inner edge of which is indented at the ends of the veins and diffused.

UNDERSIDE. Anterior wings bright orange with the apical third black, curved on its inner edge, which is well defined; towards the apex are four yellow spots; the uppermost is sub-ovate, the second rather truncate outwardly, the third narrowly lunulate, under which, close to the outer margin, is a fourth small and round spot.

Posterior wings black, with a large yellowish white space which extends over the upper central portion of the wings (but not reaching the costa) and the outer half of the cell; halfway between this space and the base are two crimson spots, the upper spot, which is situate in the interspace above the subcostal nervule, is subquadrate and crowned with a silvery white streak; the lower spot is in the interspace between the lowest median nervule and the

sub-median nervure, is suboval and dusted with black scales; the outer part of the disc is traversed by a narrow undulate crimson line, divided by the black veins; this line extends from the costa at about one-third from the apex to the sub-median nervure, and is situate about the middle of the black outer area following the contour of the wings, but at its lower end it is further from the outer margin; above the upper median nervule to the apex the crimson line is bordered outwardly by a diffused silvery white streak. The inner margin is irrorated by yellow scales; antennæ black.

Hab. Aroa River, British New Guinea, at an altitude of 8,000 feet.

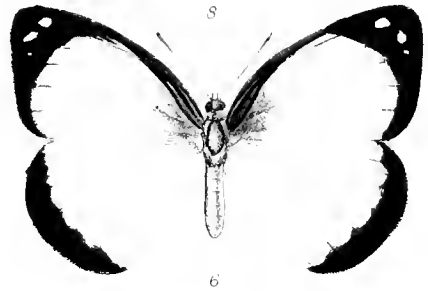
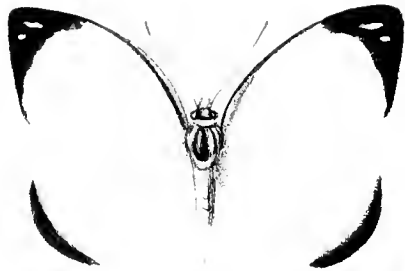
In the Collection of the Hon. Walter Rothschild.

The transposition by me of this species from the *Genus Tachyris*, in which it is placed by Herr Ribbe, to the *Genus Delias*, renders a change of its specific name necessary, a "*Delias Weiskei*" having been already described by Herr Ribbe (vide supra). I have re-named it "*Mirifica*" as appropriate to this marvellous insect.

PAPILIONIDÆ.

PIERIDÆ

DELIAS X



White night d.

all

White night d.

all

♀
100

100

White night d. ♂
100
100

100
100

White night d. ♂
100
100

100
100

PAPILIONIDÆ.—PIERINÆ.

DELIAS. X.

XXXIII.—DELIAS NELIANTHE. ♂. FIGS. 1, 2. ♀. FIG. 3.

Delias Neliante, H. Grose-Smith, "Novitates Zoologicæ." Vol. VII., p. 86 (March, 1900).

Exp. 2 inches.

Male. UPPERSIDE. Both wings white. Anterior wings with the costal margin narrowly black, and the apex and outer margin more narrowly black than in *D. Callistrate*, Gr.-Sm., but not dusted with grey scales as in that species; two subapical white streaks in the black area. Posterior wings with the outer margin from the anal angle to a little above the discoidal nervule black, rather more narrowly so than in *D. Callistrate*, and the inner edge of the black area more sharply defined than in that species.

UNDERSIDE. Anterior wings with the costa, apex, and outer margin much more narrowly black than in *D. Callistrate*, with a row of spots in the black area, of which the three uppermost are pale yellow, and the others white. Posterior wings with the basal third pale yellow; the black band as on the upperside, but much narrower than the black band of *D. Callistrate*; a row of lunular spots in the black band, but four only in number, and more orange in colour.

Female. UPPERSIDE. Both wings differ from the same sex of *D. Callistrate* in being whiter and the dark areas blacker; the upper part of the black area on the anterior wings towards the apex does not approach so closely to the cell, and on the posterior wings the inner edge of the dark area is less curved.

UNDERSIDE. Both wings with the dark areas much blacker. On the anterior wings the subapical spots are yellow and white as in the male, instead of all yellow as in *D. Callistrate*, and on the posterior wings the outer half is black with a submarginal row of narrow orange lunules extending from the apex to the anal angle, of which the second and third from the apex are almost obsolete; the basal third is pale yellow. In *D. Callistrate* only the outer fourth

of the posterior wings is greyish black, and the submarginal lunules are yellow, broader, and nearly uniform in size, the basal three-fourths of the wings being yellow.

Hab. Milne Bay, British New Guinea (Doherty).

In the Collection of the Hon. Walter Rothschild.

XXXIV.—DELIAS IERE. ♂. FIGS. 4, 5. ♀. FIG. 6.

Delias Iere, H. Grose-Smith, "Novitates Zoologicae," Vol. VII., p. 87 (1900).

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE closely resembles *D. Xelionthe*, but the inner edge of the black areas on both wings is less regular, being indented between the veins, especially on the posterior wings.

UNDERSIDE. Anterior wings as in *D. Xelionthe*, but tinged with yellow towards the base. Posterior wings bright yellow, becoming paler towards the apex, where there are two submarginal orange spots forming a continuation of the row of orange lunules in the black outer-marginal area.

Female. UPPERSIDE rather yellowish white, with the outer-marginal black areas considerably narrower than in *D. Xelionthe*, and indented on the inner edges. On the UNDERSIDE the outer-marginal black areas are also much narrower, and on the posterior wings the basal three-fourths is yellow, shading to whitish towards the apex.

Hab. Milne Bay (Doherty).

In the Collection of the Hon. Walter Rothschild.

XXXV.—DELIAS ZARATE. ♂. FIGS. 7, 8. ♀. FIG. 9.

Delias Zarate, H. Grose-Smith, "Novitates Zoologicae," Vol. VII., p. 87 (1900).

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE differs from *D. Gabia*, Boisd., in both wings being more yellowish white. On the anterior wings the costal and apical areas are blacker,

and the black outer-marginal area extends rather broadly to the inner margin. On the posterior wings the outer black band is wider.

UNDERSIDE. Anterior wings scarcely differ from those of *D. Gabia*. On the posterior wings the marginal black band is wider at the apex, and in it there is a row of narrow indistinct orange lunules; the basal three-fourths of the wings is rather brighter orange-yellow.

Female. UPSIDE with the marginal black bands of both wings wider than in *D. Gabia*, and there are no pale spots in the black area towards the apex of the anterior wings.

UNDERSIDE differs little from the same sex of *D. Gabia*, but the subapical spots in the black area of the anterior wings are all orange, and the row of orange lunules in the outer-marginal black area of the posterior wings is narrower.

The shape of the wings of both sexes differs from *D. Gabia*, being less produced at the apex of the anterior wings, and broader in the posterior wings.

Hab. Milne Bay (Doherty).

In the Collection of the Hon. Walter Rothschild



PAPILIONIDE.—PIERINÆ.

PLATE I.

I.—PIERIS IMPERATOR. Figs. 1, 2.

Pieris Imperator, Kirby, "Transactions of the Entomological Society of London," 1881, p. 257.

Exp. $3\frac{1}{2}$ inches.

"White; fore wings with a black spot at the end of the cell, and the tip black, as far as the outer third of the costa, and to beyond the middle of the hind margin; the extremities of all the nervules black, and the neighbourhood of the lower ones speckled with dusky on the hind wings; under surface of fore wings with the costa ashy, and the apical spot ashy, and not extending along the hind margin; hind wings beneath pearly-white; costa orange at the base; all the veins black, and with black lines running between them; a black band formed chiefly of dark scaling runs along the costa almost from the base to the hind margin; another covers the subcostal nervure, except at the base, and a broad lunule of similar character rests its upper and outer portion on the extremity of the discoidal cell.

"River banks, Copataza; also inhabits Bolivia (Buckley).

"Allied to *P. Phaloe*, Godt." (W. F. K., *loc. cit.*)

In the Collection of Henley Grose Smith.

One of the finest and largest species of the group to which it belongs.

II.—PIERIS SMITHII. Figs. 3, 4.

Pieris Smithii, Kirby, "Transactions of the Entomological Society of London," 1881, p. 337.

Exp. $1\frac{5}{8}$ inches.

"UPPERSIDE sulphur-yellow, base dusted with black; costa black as far as the end of the cell, the colour extending over the upper half of the cell. Beyond this, the costa is very narrowly edged with black till it meets the black border, which is deeply excavated opposite the cell, and grows very narrow towards the anal

angle, at which it ceases. Hind wings with black dots at the ends of the nervules, above and below.

“UNDERSIDE of fore wings yellowish; the tip, as well as the hind wings, pearly-white; cell of the hind wings broad, terminating in two black angular marks.

“Flying about the sulphur spring at Baños, Ecuador (Buckley).

“Allied to *P. Eleone*, Doubl. and Hew., from which it differs in the form of the band.” (W. F. K., *loc. cit.*)

In the Collection of Henley Grose Smith.

III.—PIERIS OLYMPIA. FIGS. 5, 6.

Pieris Olympia, Felder, “Wiener Entomologische Monatschrift,” V., p. 80, n. 27 (1861); Reise d. Novara, Lepidoptera, II., p. 178, n. 167 (1865).

Exp. about $1\frac{3}{4}$ inches.

UPPERSIDE white; fore wings dusted with ashy at the base and below the costa, hind margin broadly black, deeply bisinuate, and a short incomplete black streak running upwards from the first sinuation at the extremity of the cell; hind wings white, with a black border of moderate width, slightly continued along the nervures, and hardly extending to the anal angle.

UNDERSIDE of fore wings white, the nervures along the costa and at the tip marked with sulphur-yellow, the tip beyond the black band obliquely pearly-white; hind wings pearly-white, marked with a large sulphur-yellow spot at the base of the costa; fringes white.

In the Collections of Henley Grose Smith and others, from Ecuador; Felder received it from Venezuela.

IV.—PIERIS SUBFLAVESCENS. FIG. 8.

Pieris Subflavescens, Kirby, “Annals and Magazine of Natural History,” ser. 5, vol. 19, p. 362 (1887).

Exp. $2\frac{1}{4}$ inches.

Female. UPPERSIDE “white, dusted with bluish-grey at the base and on the basal part of the cell of the fore wings; the costa of fore wings narrowly

and the hind margin broadly blackish, and twice broadly indented with white; hind wings white, with a black border slightly extending along the nervures, and ceasing before the anal angle; fringe white.

UNDERSIDE. "Fore wings beneath as above, but the costa narrowly yellow, and the inner and lower part of the black border only present, the tip being obliquely yellowish, divided by the black nervures, and shading into whitish internally; hind wings buff-yellow, with narrow black veins (except the discocellular nervule), and slightly marked with orange at the base.

"Allied to *P. Tovarica*, Feld., and hardly distinguishable on the upperside." (W. F. K., *loc. cit.*)

In the Collection of Henley Grose Smith, from New Granada.

V.—DAPTONURA LIMBATA. FIG. 7.

Daptonura limbata, Kirby, "Annals and Magazine of Natural History, ser. 5, vol. 19, p. 361 (1887).

Exp. 2 inches.

Female. UPPERSIDE "white; fore wings dusted with ashy at the base and along the costal third, beyond which the costa, which is narrowly black from the base, becomes more distinctly so; the hind margin is moderately broadly brown, most broadly on the costa; opposite the middle of the hind margin is a long, shallow excavation into the white portion of the wing, and the brown border is again slightly continued along the inner margin at the anal angle; hind wings with a narrower ashy border, not indented externally and hardly extending either to the tip or anal angle.

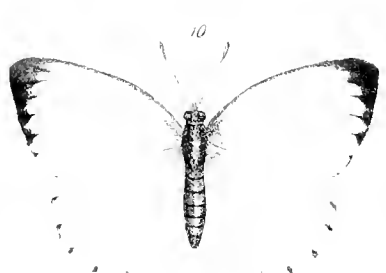
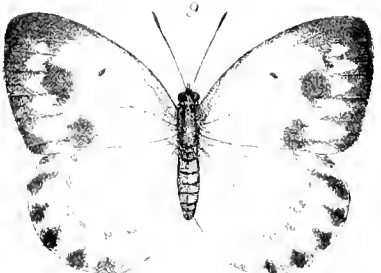
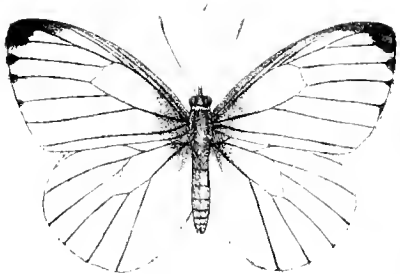
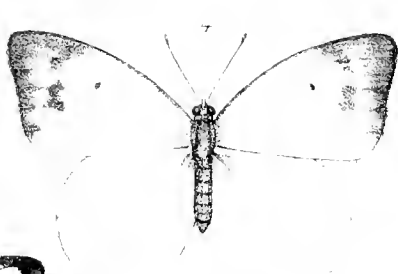
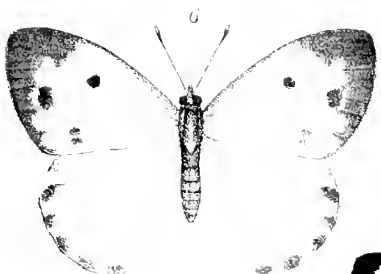
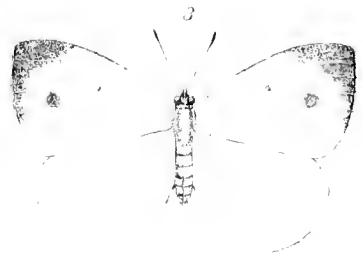
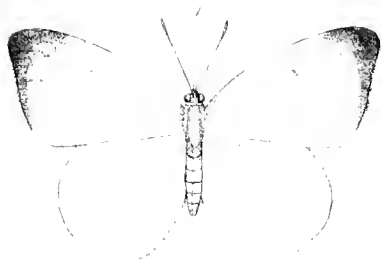
"UNDERSIDE white, immaculate; hind wings a little yellowish.

"Club of the antennæ tipped with yellow.

"Allied to *Pieris Haire*, Godt." (W. F. K., *loc. cit.*)

In the Collection of Henley Grose Smith, from Ecuador.

1897. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.



1. *Phalaena*
 2. *Phalaena*
 3. *Phalaena*
 4. *Phalaena*
 5. *Phalaena*
 6. *Phalaena*
 7. *Phalaena*
 8. *Phalaena*
 9. *Phalaena*
 10. *Phalaena*
 11. *Phalaena*

12. *Phalaena*
 13. *Phalaena*
 14. *Phalaena*
 15. *Phalaena*
 16. *Phalaena*
 17. *Phalaena*
 18. *Phalaena*
 19. *Phalaena*
 20. *Phalaena*
 21. *Phalaena*
 22. *Phalaena*
 23. *Phalaena*
 24. *Phalaena*
 25. *Phalaena*
 26. *Phalaena*
 27. *Phalaena*
 28. *Phalaena*
 29. *Phalaena*
 30. *Phalaena*
 31. *Phalaena*
 32. *Phalaena*
 33. *Phalaena*
 34. *Phalaena*
 35. *Phalaena*
 36. *Phalaena*
 37. *Phalaena*
 38. *Phalaena*
 39. *Phalaena*
 40. *Phalaena*
 41. *Phalaena*
 42. *Phalaena*
 43. *Phalaena*
 44. *Phalaena*
 45. *Phalaena*
 46. *Phalaena*
 47. *Phalaena*
 48. *Phalaena*
 49. *Phalaena*
 50. *Phalaena*
 51. *Phalaena*
 52. *Phalaena*
 53. *Phalaena*
 54. *Phalaena*
 55. *Phalaena*
 56. *Phalaena*
 57. *Phalaena*
 58. *Phalaena*
 59. *Phalaena*
 60. *Phalaena*
 61. *Phalaena*
 62. *Phalaena*
 63. *Phalaena*
 64. *Phalaena*
 65. *Phalaena*
 66. *Phalaena*
 67. *Phalaena*
 68. *Phalaena*
 69. *Phalaena*
 70. *Phalaena*
 71. *Phalaena*
 72. *Phalaena*
 73. *Phalaena*
 74. *Phalaena*
 75. *Phalaena*
 76. *Phalaena*
 77. *Phalaena*
 78. *Phalaena*
 79. *Phalaena*
 80. *Phalaena*
 81. *Phalaena*
 82. *Phalaena*
 83. *Phalaena*
 84. *Phalaena*
 85. *Phalaena*
 86. *Phalaena*
 87. *Phalaena*
 88. *Phalaena*
 89. *Phalaena*
 90. *Phalaena*
 91. *Phalaena*
 92. *Phalaena*
 93. *Phalaena*
 94. *Phalaena*
 95. *Phalaena*
 96. *Phalaena*
 97. *Phalaena*
 98. *Phalaena*
 99. *Phalaena*
 100. *Phalaena*

PAPILIONIDÆ.—PIERINÆ.

PINACOPTERYX. I.

I.—PINACOPTERYX MAHOBO. ♂. Figs 1, 2. ♀. FIG. 3.

Belenois Mahobo, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 8, p. 80 (July, 1891).

Exp. $1\frac{7}{8}$ inches.

Male. UPERSIDE glaucous white, with a few grey scales at the base. Anterior wings with the costa narrowly grey, edged by a very narrow black line, as is also a broad apical grey border extending from the apical third of the costa to two-thirds of the length of the inner margin, and a grey spot on the second discocellular nervule. Within the border are some slight greyish markings. Posterior wings without margins, but the fringes very slightly grey towards the anal angle.

UNDERSIDE. Anterior wings white, with the costa and apical third yellowish; a small black spot on the second discocellular nervule. Posterior wings uniform yellowish, with the costa saffron towards the base.

Female. UPERSIDE white, marked as in the male, except that on the anterior wings the apical grey markings are less extended, and that there is a large grey spot between the two upper median nervules.

UNDERSIDE. Anterior wings white, shading into buff towards the costa, apex and hind margin; the spots at the end of the cell, and that between the two upper median nervules, conspicuous. Posterior wings buff, the base of the costa tinged with saffron, a black dot on the second discocellular nervule, and a row of three rather indistinct grey dots on the disk, below the median nervules.

Hab. Mahobo, South-west Madagascar (Last).

In the Collection of H. Grose Smith.

II.—PINACOPTERYX MABELLA. ♂. Figs. 4, 5. ♀. FIG. 6.

Belenois Mabella, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 8, p. 79 (July, 1891).

Exp. 2 inches.

Male. UPPERSIDE glaucous white, dusted with grey at the base. Anterior wings with the costa and hind margin edged with a narrow black line; costa irrorated below this with grey; apical region and hind margin to below the lowest discocellular nervule ashy, the colour running inwards along the nervures to two large but ill-defined ashy spots, one confluent with the dark markings on the costa, and another extending over and beyond the two upper median nervules, and connected by a series of dusky atoms with an indistinct spot below the last median nervule; a conspicuous black spot on the second discocellular nervule, and the extremity of the submedian nervule is also slightly marked with black. Posterior wings white, with the region of the anal angle slightly shaded with yellow; fringes with traces of a dusky line towards the anal angle.

Both sexes show considerable resemblance to the female of *P. Lilliana*, from which they may at once be distinguished by the absence of the row of spots on the disk of the posterior wings. The male has considerable resemblance to that of *P. Mahoba*, but is larger, with the hind margin of the anterior wings slightly but distinctly emarginate, and the extremity of the submedian nervule on the same wings is marked with black.

UNDERSIDE nearly as in *B. Mahoba*, but rather more brightly coloured.

Female. UPPERSIDE yellowish white. Anterior wings nearly as in the male, but with the dark spots and markings more clearly defined, larger, and rather more extended, the border reaching the hinder angle; there is a well-marked oblong spot between the lowest median nervule and the submedian nervule. Posterior wings with rather large blackish spots at the extremities of all the marginal nervures.

UNDERSIDE. Anterior wings white, slightly greenish towards the base, and shading into buff towards the costa, apex and hind margin. Three conspicuous black spots, of nearly equal size; one discocellular, one between the two upper median nervules, and the third above the submedian nervule. Posterior wings buff, with the base of the costa marked with saffron.

Hab. Mahoba, South-west Madagascar (Last).

In the Collection of H. Grose Smith.

III. PINACOPTERYX LILLIANA. ♂. FIGS. 7, 8. ♀. FIG. 9.

Belenois Lilliana, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 122 (1889).

Pinacopteryx Nigropunctata, Miss E. Sharpe, "Annals and Magazine of Natural History," ser. 6, vol. 5, p. 336 (1890).

Exp. 2 inches.

Male. UPPERSIDE very faintly greenish white, with black veins. Anterior wings with the base and costa black, irrorated with bluish grey, which extends as far as the subcostal nervure until beyond the end of the cell, where the lower half of the subcostal area is white to about two-thirds of the length of the costa, beyond which the apex is blackish as far as the third subcostal nervule. The rest of the nervules are tipped with black, the lowest median very slightly, and the submedian nervure hardly at all. Posterior wings with the base irrorated with grey, and all the nervures more or less tipped with black.

UNDERSIDE glaucous white, with all the nervures, except the submedian on the anterior wings, and the costal nervure on the posterior wings, slightly tipped with black; a small spot in the middle of the second discocellular nervule on all the wings. Anterior wings with a blackish spot above and another below the third subcostal nervure near its origin, and a very large black spot covering the whole space between the two upper median nervules at about half their length. Posterior wings with a small grey spot towards the base above the subcostal nervure, a blackish spot above and another below the subcostal just beyond the termination of the costal; and an irregular curving row of three or four rather indistinct greyish spots on the disk.

Female. UPPERSIDE yellowish white, rather thickly dusted with grey, especially towards the base and costa, the second discocellular nervule with a small blackish spot in the middle on all the wings.

Anterior wings with the apex and hind margin rather broadly blackish brown, which colour extends inwards along the nervures to a row of irregular dark spots, the first not separated from the subapical dark markings, the second small, the third very large, and extending beyond the two upper median nervules in both directions, the fourth nearly isolated, and extending from below the lowest median nervule nearly to the inner margin. Posterior wings with a row of almost confluent marginal spots on all the nervures, which latter are marked at their extremities with black dots; and a curved row of smaller spots, partly connected by grey dusting, at about three-fourths of the length of the wing, but not extending to the inner margin.

UNDERSIDE. Anterior wings white, yellowish along the costa and on the upper part of the hind margin; a black dot on the middle of the second disco-

cellular nervule; of the series of spots visible above only the second, third and fourth are represented, the third being distinctly cut by the two upper pale median nervules. Posterior wings deeply tinged with ochreous yellow, the costa narrowly edged with saffron, a black spot on the second discocellular nervule, the marginal nervules tipped with small black dots; and the row of discal spots rather more sharply defined than above; the outer portion of the wing beyond them is whiter than towards the base.

Hab. Mombasa (Last).

In the Collections of H. Grose Smith, and others.

Allied to *P. Charina*, Hew., and *P. Simana*, Hopff, but larger, with comparatively shorter and rounder wings. In the male all the veins are black; and the female is widely different, having a superficial resemblance to the Indian *Pieris Jara*, Sparrm.

IV.—PINACOPTERYX GERDA. ♂. FIGS. 10, 11.

Exp. $1\frac{3}{4}$ inches.

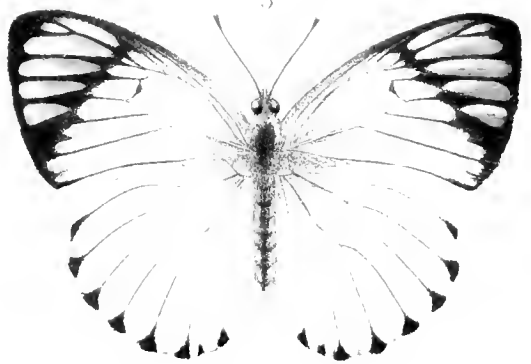
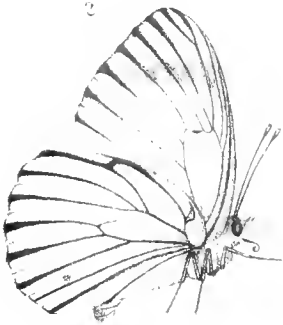
Male. UPPERSIDE of a slightly greenish white, the base irrorated with grey. Anterior wings with a black line on the middle of the second discocellular nervule; costa, apex and hind margin to below the median nervules moderately broadly black, the costa grey towards the base, the dark colour on the hind margins running inwards for a short distance along the veins, between which the border is rendered indistinctly macular by faint white lines; the lowest median nervule and the submedian nervure are tipped with black. Posterior wings with all the marginal nervules tipped with black, which colour shows a slight tendency to extend inwards.

UNDERSIDE glaucous white. Anterior wings very narrowly blackish along the costa, the marginal nervules tipped with black dots, a small black spot on the second discocellular nervule, and a large one between the two upper median nervules. Posterior wings with the submarginal nervules tipped with black, and a short white streak on the second discocellular nervule.

Hab. Mombasa (Last).

In the Collection of H. Grose Smith.

A small species, with no very characteristic markings.



PAPILIONIDÆ. PIERINÆ.

CALLOSUNE I.

I.—CALLOSUNE BACCHUS. ♂. Figs. 1, 2. ♀. Figs. 3, 4.

Teracolus Bacchus, Butler, "Proceedings of the Zoological Society of London," 1888, p. 73.

Exp. $2\frac{1}{4}$ to $2\frac{1}{3}$ inches.

"*Male*. Wings above white; primaries with narrow black costal margin; the base sprinkled with black scales; apical area blue-black, with dentate-sinate inner edge, and crossed by a wide belt of brilliant changeable purple (wider and bluer than in *T. Ione*); the spot at end of cell scarcely visible, reduced to two or three scales; secondaries white, with blackish veins terminating in minute black spots on the outer margin.

"Wings below white, the apex of primaries and whole of secondaries very pale sulphur-yellow, crossed by well-defined black veins terminating in small subconfluent black spots on the outer margin; costal margin of primaries black; a black dot at the end of the cell; secondaries with the basal half of the costal margin yellow; a black transverse dash from costal to subcostal vein, forming the commencement of an ill-defined oblique stripe, indicated by scattered black scales as far as the third median branch.

"*Female*. White above, the base rather broadly irrorated with blackish scales; primaries with the costal margin black; a broad external blackish border crossed by black veins, widest at costa, gradually diminishing in width from costa to first median branch, to which point it is internally dentate-sinate, and traversed by six white spots in an arched series, narrow and internally widely sinuated from first median branch to submedian vein; a black spot at the end of the cell; a transverse blackish spot at external third of interno-median area; secondaries with a marginal series of large subconfluent blackish spots crossed by black veins; a blackish subapical oblique stripe from costa, connected with the macular border by black veins; body quite normal.

"Primaries below white, the costa and apical area pale yellow; veins towards outer margin dark brown; a subapical series of angulated brown

dashes; a black spot at the end of the cell; two small black dots on interno-median area and three brown triangular spots at end of first median branch, interno-median fold, and submedian vein; secondaries pale yellow, base of costal margin and a spot at the end of the cell bright yellow; veins, on elbowed stripe beyond the middle, and the fringe, excepting at the extremity of the internervular folds, dark brown; body below white.

“ This species is readily distinguished from all its allies by the well-defined dark-coloured veins on the under surface.” (A. G. Butler, *loc. cit.*)

Hab. “ Lado, 20th August, 1884; Wadelai, 27th January, 1887 ” (Emin Pasha). Zanzibar (Last).

In the Collections of the British Museum and of Henley Grose Smith.

II.—CALLOSUNE ANAX. ♂. Figs. 5, 6. ♀. Figs. 7, 8.

Callosune Anax. Henley Grose Smith, “ Annals and Magazine of Natural History,” ser. 6, vol. 3, p. 125 (February, 1889).

Exp. ♂ $2\frac{1}{2}$; ♀ $2\frac{3}{4}$ inches.

“ *Male*. **UPPERSIDE**. Anterior wings white with black veins, except the subcostal and median nervure and the upper discocellular nervule, which are brownish-white; apical third with a large iridescent mauve patch, in some lights iridescent blue, broadly bordered with black all round, especially towards the inner angle; a narrow oblong spot at the end of the cell; basal area grey.

“ Posterior wings white, with the outer half of the veins black, tipped at the ends with rather large triangular black spots.

“ **UNDERSIDE**. Anterior wings white, with partially black veins, as on the upperside, tipped with black; outer margin black, the mauve colour in the patch on the upperside showing faintly through, in the middle of which between the veins is a curved row of five triangular black spots, the apices of the triangles pointing inwardly; the first spot beneath the second subcostal nervule, the middle spot the largest; a spot at the end of the cell.

“ Posterior wings creamy-white, with brown veins, tipped on the margin with black; on the disk is a row of black spots between the veins, the first below the costa, rather beyond its middle, the largest, the three next in a line beneath the first, the three lowest following the curve of the wing towards the inner

margin; a small spot at the end of the cell crowned with orange; basal third of the costal margin orange.

“*Female*. UPPERSIDE. Both wings white. Anterior wings with apical third black, internally dentate towards the inner angle; basal third irrorated with black scales, the apical patch traversed by a curved row of six white spots between the veins, inside which is a row of three mauve spots; a round spot at the end of the cell and another above the submedian nervure towards the anal angle.

“Posterior wings with a row of large triangular black spots at the tips of the veins almost contiguous; base grey.

“UNDERSIDE. Anterior wings white, apical third pale yellow, traversed by the broadly black veins from the outer margin as far as a row of confluent, broad, black spots, beyond which is a greyish area; a spot at the end of the cell, another near the angle, as on the upperside.

“Posterior wings creamy-yellow, shaded with orange near the inner margin and on the costa; tips of the veins black, shaded on each side with grey, the black extending along the veins almost as far as the discal row of spots, which are larger than in the male; a small spot at the end of the cell crowned with orange.

“Nearest to *C. Bacchus* and *C. Imperator* of Butler, but very distinct from each of them. It is one of the largest of the group.” (H. G. S., *loc. cit.*)

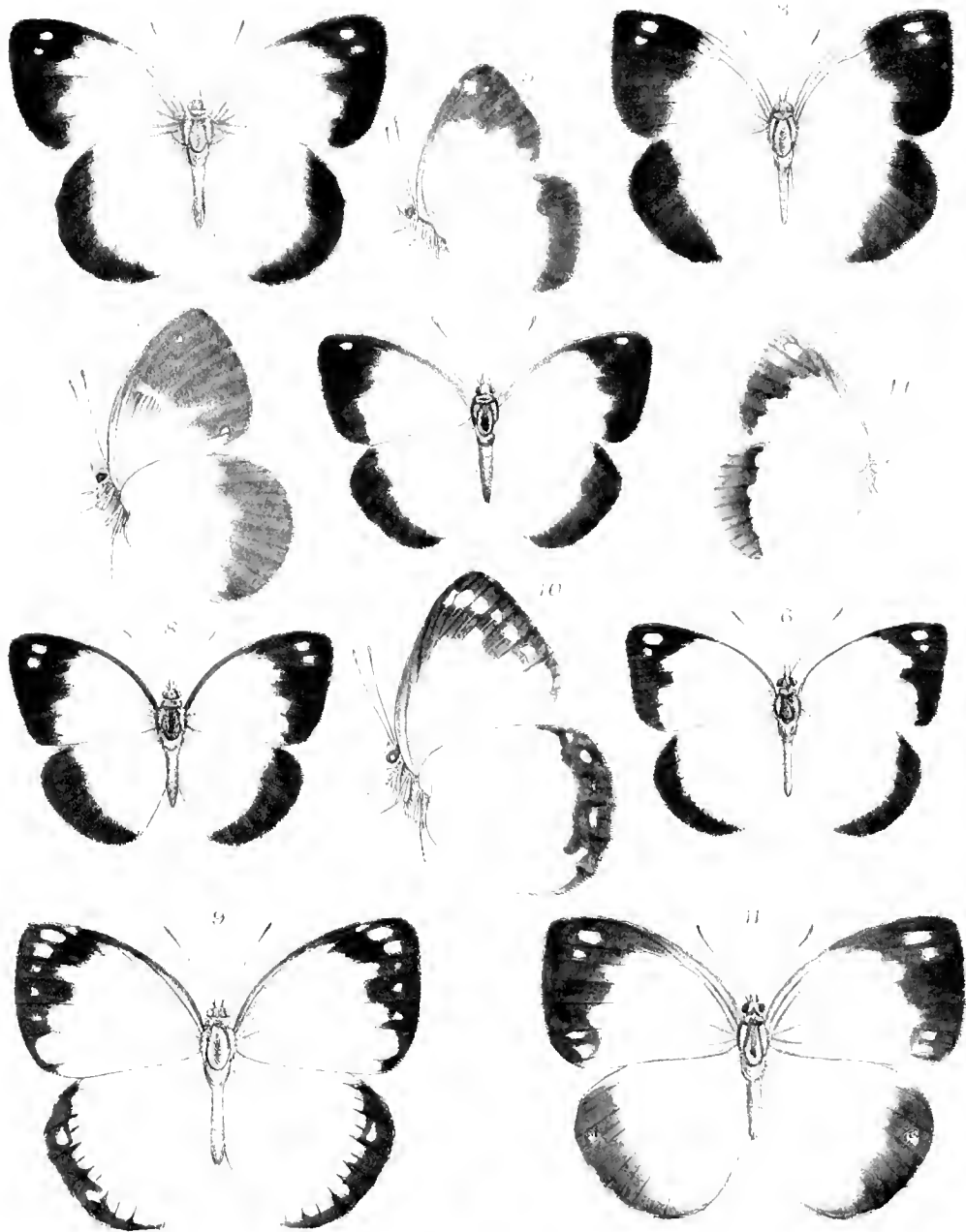
Hab. Mombasa, E. Africa (Last).

In the Collection of Henley Grose-Smith.

STOILIDAE

PLATE III

FIGS 1-11



W. H. K. 1907. 107-117

West. Ind. Mus. 107-117

1. *STOILIA MELANOTA* ♀
 2. " " ♂
 3. " *CONSANGUINEA* ♀
 4. " " ♂

5. *STOILIA MELANOTA* ♀
 6. " *MELANOTA* ♀
 7. " *MELANOTA* ♀
 8. " " ♂

PAPILIONIDÆ.—PIERINÆ.

HUPIINA I.

I.—HUPIINA MENTES. ♂. Figs. 1, 2. ♀. Fig. 3.

Pieris Mentes, male, Wallace, "Transactions of the Entomological Society of London," Vol. IV., p. 332 (18th February, 1867.)

Exp. 2 inches.

Male. "Above like *P. Pitys*, Godart, but with an ashy tinge on the forewings, and generally two spots at the apex. Beneath, the upper wings are black, with the basal half yellow-tinged, and the inner margin white, a small white mark at the end of the cell, and the apical spots (three or four) yellow; the hind wings as in *P. Pitys*."

Female. UPPERSIDE with the black area broader than in the male, the basal area more densely irrorated with black scales, and the white area of the posterior wings more tinged with yellow.

UNDERSIDE as above, but, on the anterior wings, with three subapical yellow spots, and a white spot in the black area above the submedian nervure; the yellow area of the posterior wings is paler than in the male.

Hab. Lombok, *male* (Wallace); Tambora, *female* (Doherty).

In the Collection of Mr. Grose-Smith and others.

The figure of the male is drawn from a specimen formerly in the Wilson-Saunders Collection referred to in Mr. Wallace's paper. The female has not hitherto been described.

II.—HUPIINA CONSANGUIS. ♂. Figs. 4, 5.

Exp. 1½ inches.

Male. UPPERSIDE. Both wings creamy-white, with the outer margins very broadly dark brown, the inner edges of the dark areas being irregular. The anterior wings are deeply indented between the two lower median nervules.

There is one rather large subapical white spot, and the costal area is broadly grey, shading into dark brown where it joins the outer dark area.

UNDERSIDE. Anterior wings as on the upperside, but with the base tinged with yellow, and three yellow subapical spots. Posterior wings with the basal three-fourths bright yellow, the outer fourth dark brown.

Female. UPSIDE closely resembles the male, but the outer dark areas are rather wider. UNDERSIDE as in the male, but the pale area of the anterior wings is lemon-yellow, shading into white below the submedian nervure.

Hab. Tenimber and Lotti (Doherty).

In the Collections of the Hon. Walter Rothschild and Mr. H. Grose-Smith. (Types ♂ and ♀.)

Near to *H. Pitys*, Godart, but smaller and with rounder wings.

III.—HUPHINA WETTERI. ♂. FIGS. 6, 7. ♀. FIG. 8.

Exp. $1\frac{1}{2}$ inches.

Male. UPSIDE. Closely resembles *H. Consanguis*, but on the upperside the outer margins are black instead of dark brown, the rest of the wings being white. On the anterior wings the black area becomes narrower towards the outer angle, and there are two subapical white spots. On the underside the whole of the pale area of the anterior wings is lemon-yellow, except towards the inner margins, where it shades into white, and the three yellow subapical spots are larger and more distinct. On the posterior wings the pale area is brighter yellow than in *H. Consanguis*.

Female only differs from the male in the dark outer areas being broader.

Hab. Wetter and Dili (Doherty).

In the Collections of the Hon. Walter Rothschild and H. Grose-Smith. (Type ♂ from Wetter, type ♀ from Dili.)

IV.—HUPHINA LEUCOPHORA. ♂. FIGS. 9, 10. ♀. FIG. 11.

Huphina Leucophora. H. Grose-Smith, "Annals and Magazine of Natural History," Ser. 6, Vol. XIX. (April, 1897).

Exp. $2\frac{1}{4}$ inches.

Male. UPPERSIDE. Both wings white, with broad black outer marginal bands. Anterior wings with the base and costal margin dusted with grey scales; the apical third and outer marginal area broadly black, having its inner edge irregularly indented between the veins and being narrowest at the outer angle; in the middle of the black area is a row of six white spots between the veins, the spot nearest the costa linear, the second (which is the largest of the series) and the third each bordered on the inner side by an elongate streak of white scales; the three lowest spots are smaller. The posterior wings are broadly bordered with black, in which, between the lowest subcostal and discoidal nervules, is a small patch of white scales near the inner edge of the black border.

UNDERSIDE. Anterior wings as on the upperside, but the costal area is rather broadly brownish-black and the base tinged with yellow; the row of white spots of the upperside is represented by the same number of spots, but they are more uniform in size, and the three upper spots are yellow. Posterior wings bright lemon-yellow, with a brownish-black outer marginal band, broader than on the upperside, in the middle of which is a series of indistinct yellow streaks or spots; the inner edge of the black band is very irregularly defined.

Female. UPPERSIDE. Both wings purer white than in the male, with the dark marginal areas broader and browner. Anterior wings with the costa and basal third densely irrorated with grey scales, and three subapical white spots, of which the middle spot is the largest and the uppermost nearly obsolete. Posterior wings with the white area more or less densely irrorated with grey scales, and a small cluster of white scales above the discoidal nervule in the dark area.

UNDERSIDE. Anterior wings with the series of yellow spots before the apex larger, and the three lowest spots nearly obsolete. Posterior wings pale yellow, with the veins crossing the pale area white, and two yellow spots situate before the apex in the dark area.

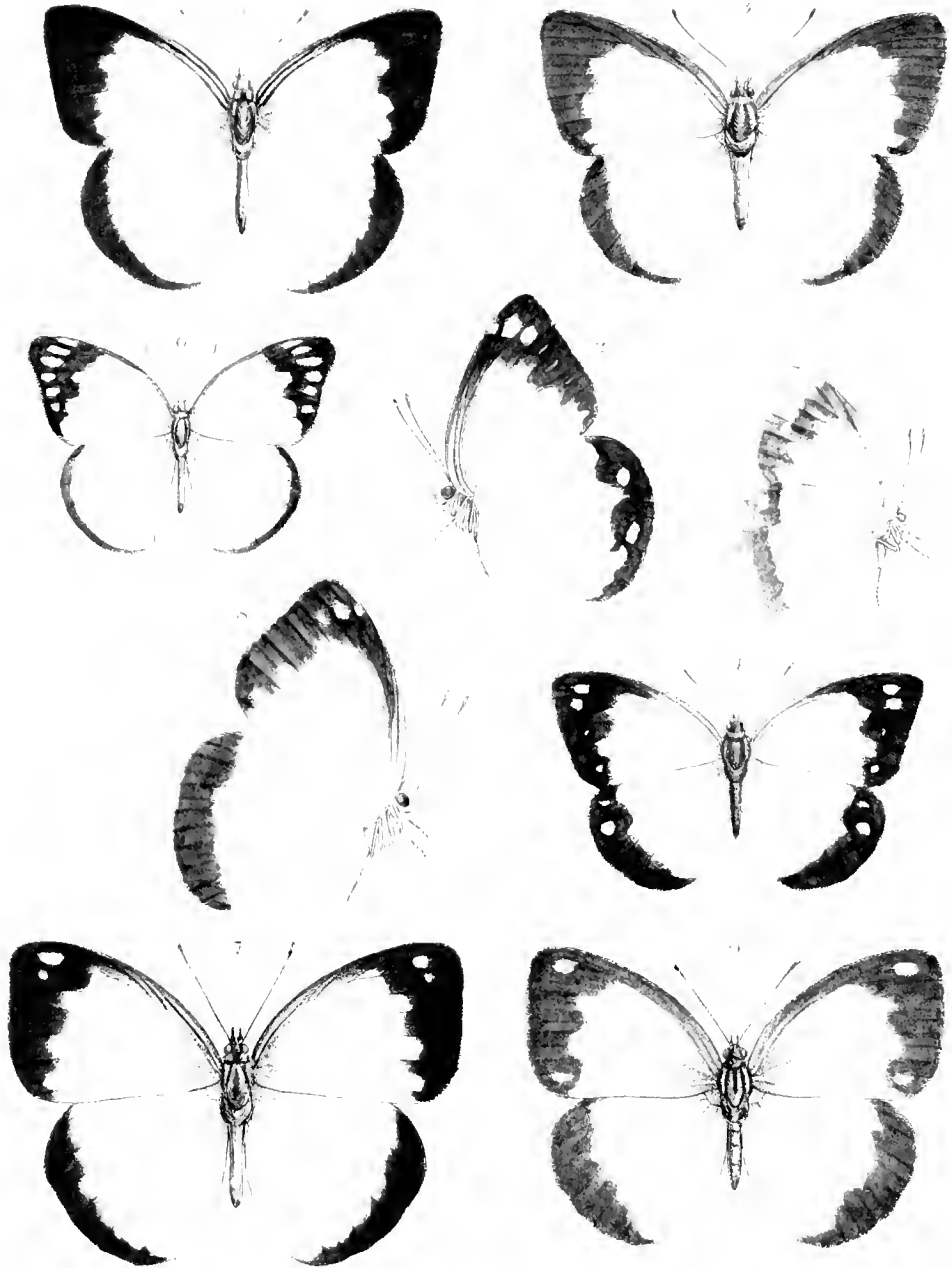
Hab. Kiriwini Island, Trobriands (Meek).

In the Collections of Mr. Grose-Smith and others.

Nearest to *H. Seyllara*, Macleay, *H. Lamassa*, Boisd., and *H. Pallida*, Grose-Smith.

PAPILIONIDÆ.

PERIMATA
 POLYPHALE



From the original.

Wells, the artist.

PLATE I. PERIMATA
 1. PERIMATA
 2. PERIMATA
 3. PERIMATA

PLATE II. PERIMATA
 4. PERIMATA
 5. PERIMATA

PAPILIONIDÆ.—PIERINÆ.

HUPHINA. II.

VI.—HUPHINA AGNATA. ♂. FIGS. 1, 2. ♀. FIG. 3.

Pieris Agnata, II. Grose-Smith, "Entomologist's Monthly Magazine," Vol. XXV., p. 301 (June, 1889).

Exp. $2\frac{1}{8}$ inches.

Male. UPPERSIDE. Both wings creamy-white, broadly bordered with black. Anterior wings, base and basal half of costa irrorated with grey, rather broadly black beyond, apex and outer margin very broadly black, with several narrow white streaks before the apex in some specimens, the inner edge of the black border rather deeply sinuate. On the posterior wings the black border narrows towards the anal angle, where it is irrorated internally with grey.

UNDERSIDE. Anterior wings white, greenish-yellow at the base, irrorated with grey; costal area, apex, and outer margin as on the upperside, but towards the apex are three distinct, bright yellow, conical spots, under which are three more or less defined smaller white spots. Posterior wings, inner three-fourths bright canary-yellow, outer fourth brownish-black, the inner edge of which is irregular, and in which are two irregular ill-defined yellow spots, the first below the second subcostal nervule, the other below the upper median nervule.

Female. UPPERSIDE resembles the male, but the wings are more stramineous and rather rounder.

UNDERSIDE. Anterior wings more grey, and spots paler. Posterior wings, with the basal three-fourths pale orange-yellow, traversed by white veins.

Hab. Rubiana and Guadalcanar, Solomon Islands (Woodford, and Captains Cayley Webster and Cotton).

In the Collections of Mr. Grose-Smith (Types ♂ ♀) and others.
Near *H. Latilimbata*, Butl., and *H. Quadricolor*, Godm. and Salv.

VII.—HUPHINA PERICLEA. ♀. FIGS. 4, 5.

Pieris Periclea, Feld., "Reise der Novara," Vol. II. p. 169.

Pieris Narses, Wallace, "Transactions of the Entomological Society," Vol. IV., p. 333 (November, 1867.)

Exp. $1\frac{3}{4}$ inches.

Female. UPPERSIDE. Anterior wings white, with the costa and base dusky and the apical third brownish-black, broadest on the costal margin, becoming rather narrower at the outer angle, deeply indented by the white ground-colour between the two lowest median nervules, and above the uppermost median nervule; two oval white spots in the black area before the apex, with indications of two others below them. Posterior wings white, with the outer fourth brownish-black, indented by the ground-colour above the uppermost median nervule, and above the discoidal nervule; a round white spot in the black area towards the apex and another smaller spot above it.

UNDERSIDE. Anterior wings with the dark apical area as on the upperside, but becoming rusty ochreous towards the apex, with three or four dusky white spots between the veins in the middle of the dark area, tinged with yellow towards the base. Posterior wings, pale dusky ochreous, with the outer fourth darker ochreous, in which are indistinct pale patches towards the apex, the basal portion of the costa orange.

Hab. Moreton Bay.

In the Collection of H. Grose-Smith.

The insect here figured is the specimen referred to by Mr. Wallace as the female of *P. Narses* in the Collection of Mr. W. W. Saunders, whence it passed into Mr. Grose-Smith's Collection. Mr. Kirby rightly gives *P. Narses* as a synonym of *P. Periclea*. The type male of *P. Periclea* in the Felder Collection is now before me. On the upperside there are three more white spots in the outer marginal dark area of the anterior wings, and the outer marginal dark area of the posterior wings is narrower; on the underside, the inner three-fourths of the posterior wings is rather darker, the outer fourth being somewhat paler. There can be little doubt that this is the dry season form of *H. Lanassa*, Boisdu., *H. Nabis*, Lucas, and *H. Perithea*, Feld., as lucidly explained by Dr. Butler in his paper on this species in the "Annals and Magazine of Natural History," Vol. XVII., Ser. 6, p. 231. The specimen in the Hewitson Collection, labelled underneath "*Narses*," is not a male but a female, to which the body of a male has been attached; Mr. Hewitson named it "*Primalc*," which is obviously an error.

VIII.—HUPHINA PERIMALE. ♂. FIG. 6.

Picris Perimale, Donovan, "Insects of New Holland," Plate XX., Fig. 1.

Exp. $1\frac{5}{8}$ inches.

The figure of this insect is taken from the specimen described by Mr. Wallace in his paper before mentioned, p. 333, under the name of "*Periclea*," from the Collection of Mr. Saunders, whence it passed into Mr. Grose-Smith's Collection. After a careful examination of the specimens of *H. Perimale* in the National Collection, in which I was assisted by Dr. Butler, we arrived at the conclusion that there could be no doubt as to their identity with *H. Perimale*. Donovan's figure is that of a female, and is very highly coloured. Mr. Walter Rothschild has lent me a female specimen from the Felder Collection, which is nearly white on the upperside, and there is a female specimen in the British Museum which is intermediate in colouring between the Felder specimen and Donovan's figure. On the underside the male here figured corresponds with the undersides of the females above referred to, and the submarginal dark band on the posterior wings is broken up into similar dusky spots.

Hab. New Caledonia.

In the Collections of the British Museum, the Honble. Walter Rothschild and Mr. Grose-Smith.

It is proposed to figure the underside of the male, and of one or both sides of the female in a subsequent Part of this book.

IX.—HUPHINA DOHERTYANA. ♂. FIGS. 7, 8. ♀. FIG. 9.

Belinois Dohertyana, H. Grose-Smith, "Novitates Zoologicae," Vol. I., p. 337 (April, 1894).

Exp. $2\frac{1}{8}$ inches.

Male. UPPERSIDE. Both wings creamy-white with broad black margins. Anterior wings with the base and costal margin to two-thirds of its length irrorated with grey scales, thence to the apex and along the outer margin to the outer angle broadly black, the inner edge of the black area deeply indented between the veins. In the black area towards the apex of the anterior wings is an oval white spot with an indication of two other spots, represented by a few white scales above and below it. The black band on the posterior wings is

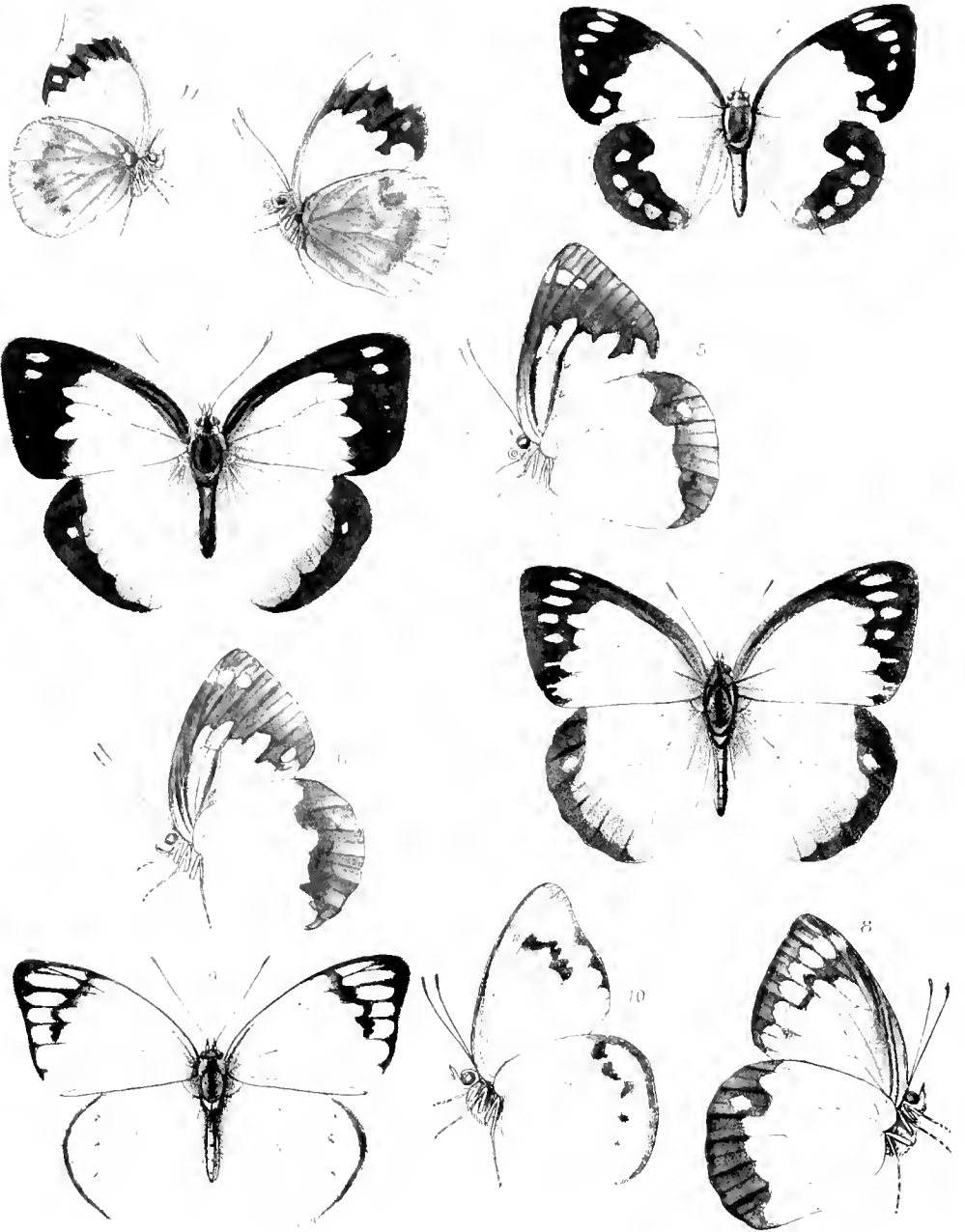
somewhat irregular on its inner edge, the broader dark band of the underside showing indistinctly within its inner edge.

UNDERSIDE. On the anterior wings the basal area is yellow, dusted with black scales on the costal margin. Towards the apex between the subcostal nervules are two yellow spots, the upper spot the smallest. Posterior wings bright yellow with broader black margins than on the upperside, somewhat deeply indented on the inner edge between the lower discoidal and upper median nervules.

Female. Resembles the male on both sides, but the black marginal bands are wider and more brownish-black, and the white area is tinged with yellow on the upperside, the posterior wings being pale orange-yellow; the subapical spots are more distinct.

HAB. British New Guinea, German New Guinea, and Fergusson Island (Doherty, Captains Cayley Webster and Cotton, and Meck).

In the Collections of H. Grose-Smith (Types ♂ ♀) and the Hon. Walter Rothschild.



1. HUPHIIA PENNYATA ♂
 2. " " ♀
 3. " " ♀
 4. " LATHIRATA ♂

5. HUPHIIA LATHIRATA ♀
 6. " " ♀
 7. " " ♀
 8. " " ♀
 9. " " ♀
 10. " MACULATA ♂

XI.—HUPHINA PALLESCENS. ♂. FIGS. 7, 8.

Belenois Pallida, H. Grose-Smith, "Novitates Zoologicae," Vol. I., p. 33 (April, 1894).

Exp. $2\frac{1}{4}$ inches.

Male. UPPERSIDE. Both wings lacteous white, with broad brownish-black marginal bands. Anterior wings with the base and costal margin to half its length dusted with grey scales, thence to the apex and along the outer margin broadly brownish-black; the inner edge of the black area, which is very irregular, extending across the apex, at half the distance between it and the cell, and tapering gradually to the outer angle where it is narrowest. In the apical dark area are six white streaks, the first and sixth being nearly obsolete. On the posterior wings the broad dark band on the underside shows indistinctly on the inner side of the brownish-black marginal band.

UNDERSIDE. Anterior wings as above, but the apical white streaks are enlarged into a row of broad spots, the uppermost of which are bright yellow; the lower spots are white, and almost cover the black marginal band, which is reduced on its inner edge to an irregular black streak, becoming obsolete below the lowest median nervule. Posterior wings bright yellow with a broad brownish-black band, the inner edge of which is very irregular, and rather deeply indented between the two upper median nervules; in the dark band is a row of indistinct yellow spots, of which that above the discoidal nervule is largely developed.

Female. UPPERSIDE. Both wings browner, the submarginal row of white streaks in the male being developed into a row of seven large yellowish-white spots extending from the costa to the submedian nervule. On the posterior wings the orange spots in the underside of the band are represented by four yellowish-white spots, of which that nearest the anal angle is the smallest.

The UNDERSIDE resembles the male, but the yellow colouring is represented by orange, and on the anterior wings the inside edge of the outer marginal band is continued as far as the submedian nervule.

Hab. Biak (Doherty).

In the Collections of the Hon. Walter Rothschild and Mr. H. Grose-Smith.

I have changed the name of this species, as I find that Lieutenant-Colonel Swinhoe has already described an "*Huphina Pallida*" from India.

Six specimens, of which two are females. Nearest to *B. Nabis*, Luc., *B. Latilimbata*, Butl., and *B. Aquata*, Grose-Smith.

PAPILIONIDÆ.—PIERINÆ.

HUPIINA. III.

VIII.—HUPIINA PERIMALE. ♂: FIG. 1. ♀: FIGS. 2, 3.

Vide antea, Huphina, Plate II., p. 6.

Figures of the underside of the male, and of the upper and undersides of the female of this species, are here supplied.

X.—HUPIINA LATULIMBATA. ♂: FIGS. 4, 5. ♀: FIG. 6.

Belenois Latulimbata, Butler, "Annals and Magazine of Natural History," Series IV., Vol. XVIII., p. 247.

Exp. about 2 inches.

Male. "UPPERSIDE, creamy white, basal area greyish, a broad and rather irregular dark-brown outer border; primaries with the veins dusky; costa black, tapering towards the base; two or three subapical creamy spots; outer border deeply sinuated in the first median and the discoidal interspaces; primaries below white; outline of outer border as above, but the apical area cupreous, crossed by thin bright yellow spots, basal area greenish-yellow; secondaries bright yellow; external border irregularly sinuated, cupreous, darker internally.

Female. Primaries whiter than in the male, several indistinct additional subapical spots, the two more prominent ones distinctly yellow; secondaries with an indistinct subapical spot; UNDERSIDE paler."

Hab. New Guinea.

In the Collections of Mr. Grose-Smith and others.

The female figured in the plate differs from the typical form, on the upperside, in having the pale basal areas of both wings yellower and more densely irrorated by grey scales, and the outer margins more broadly dark brown.

XII.—HUPHINA MACULATA. ♂. Figs. 9, 10.

Tachyris Maculata, H. Grose-Smith, "Annals and Magazine of Natural History," Series VI., Vol. XVII. (May, 1896).

Exp. $2\frac{1}{5}$ inches.

Male. UPPERSIDE. Both wings white; anterior wings with the costal and outer margins black, the latter rather broadly indented inwardly between the veins; the apical region crossed by an irregular band of contiguous greyish-black curved bars from the costa at one-fourth from the apex to the middle median nervule, the veins between the band and the outer margin being black. Posterior wings with a narrow greyish-black band on the margin from the apex to about the lowest median nervule; across the disc is a row of blackish dots representing the row of dark spots on the underside.

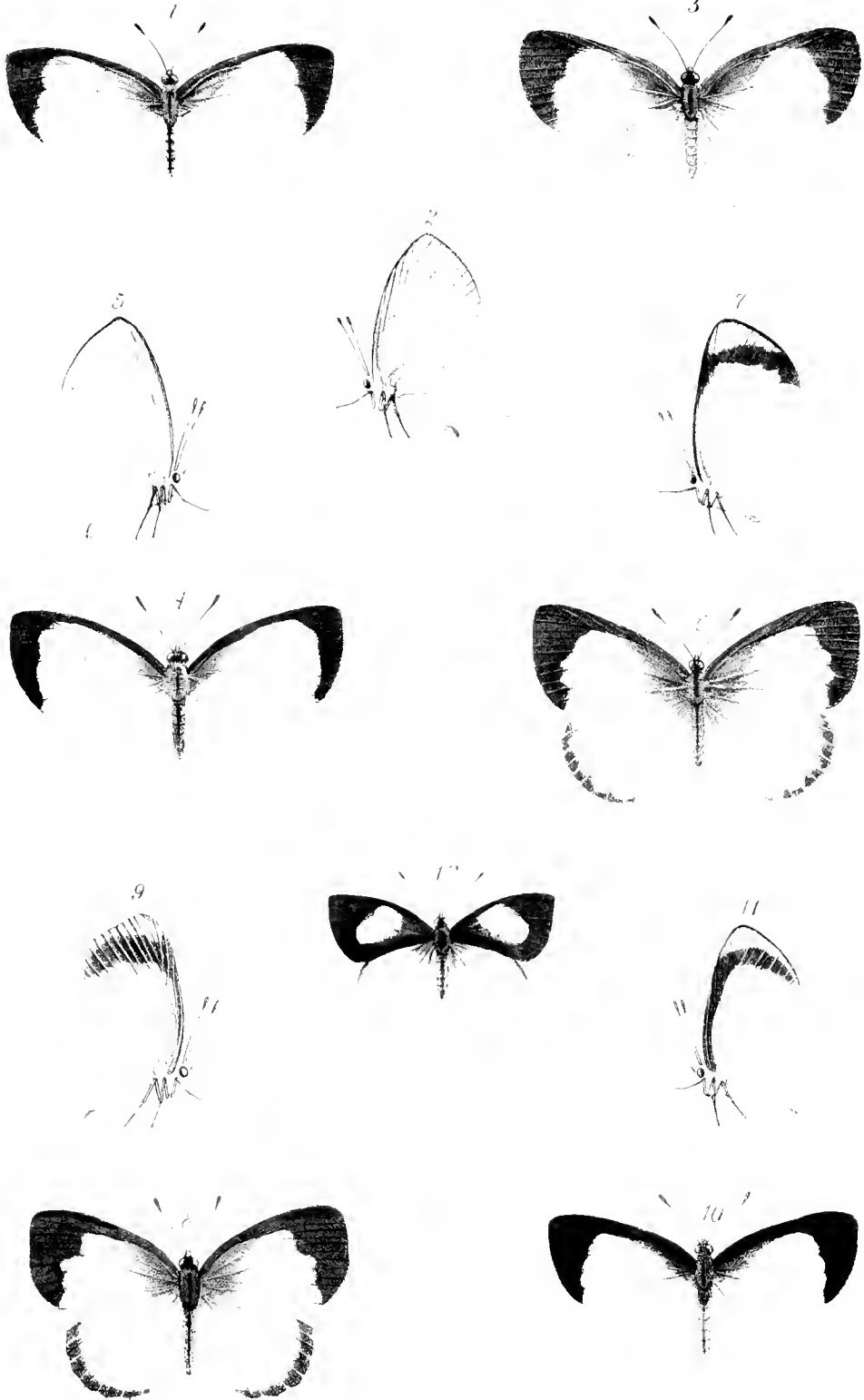
UNDERSIDE. Anterior wings white, tinged with yellow towards the apex; outer margin with a blackish band indented between the veins and terminating on the lowest median nervule; the subapical black band as on the upperside, the bar nearest the costa being nearly obsolete and the others wider than on the upperside. Posterior wings greenish-yellow, with a brownish-grey narrow border; the disc is crossed by a row of five brownish-grey spots, of which the uppermost is confluent with the dark marginal band, the third is out of line towards the margin, and the fifth spot is nearly obsolete.

Hab. New Britain.

In the Collection of Mr. Grose-Smith.

It is not near any described species. On the upperside the anterior wings somewhat resemble *Catophaqa Agave*, Feld.

PAPILIONIDÆ.
 PERIZÆ
 FLODINÆ



Montenap. det. 1899

London 1899

1, 2 FLODINA UMBRATICA. ♂
 3 " " ♀
 4, 5 " CITRINARIS.
 6, 7 " PRIMULARIS

8, 9 FLODINA ANDROPIS. ♂.
 10, 11. " ARGYPHEUS
 12 " SIGNATA

PAPILIONIDÆ.—PIERINÆ.

ELODINA. I.

I.—ELODINA UMBRATICA. ♂. Figs. 1, 2. ♀. Fig. 3.

Elodina Ubratica, Henley Grose Smith, "Entomologist's Monthly Magazine," vol. 25, p. 302 (June, 1889).

Exp. $1\frac{7}{8}$ inches.

"*Male*. UPPERSIDE white; anterior wings with the base, basal part of the cell, and costal margin as far as the middle, broadly grey, thence along the costa narrowly grey, until it joins a broad apical and outer marginal dark grey band, which on its inner edge at the upper median nervule is slightly sinuate; the band tapers towards the posterior angle.

"UNDERSIDE white, slightly tinged at the base of both wings and at the apex of anterior wings with greenish-yellow; the dark apical area on the upperside of anterior wings is indistinctly visible." Costa of anterior wings dusted with grey at the base, and hind margin edged with a black line. Antennæ, black, ringed with white.

"*Female*. UPPERSIDE resembles the male, but is greyer.

"UNDERSIDE, with the base, costal and outer margins, and apex of anterior wings, and the whole of the posterior wings, stramineous." (H. G. S., *loc. cit.*)

Hab. Ulawa Island, Solomon Islands (C. M. Woodford).

"Nearest to *E. Bourneensis*, Wall. and *E. Hypatia*, Feld., but wings more elongated, especially in the female; they also differ on the underside."

In the Collection of H. Grose Smith.

II.—ELODINA CITRINARIS. ♂. Figs. 4, 5.

Exp. $1\frac{9}{10}$ inches.

Male. UPPERSIDE lemon-yellow, anterior wings dusted with grey at the base; costa bordered with blackish above the subcostal nervure nearly to the end of the cell, and thence rather more narrowly till it meets the moderately

broad hind-marginal border, which on its inner edge is sinuate, and narrows gradually, and ceases just above the anal angle.

UNDERSIDE lemon-yellow, anterior wings with the costa and hind margin narrowly edged with black, the broad hind-marginal border of the upperside showing faintly through.

Body, yellowish-grey, abdomen yellowish-white beneath, antennæ black, narrowly ringed with white.

Hab. New Britain.

In the Collection of Henley Grose Smith.

Allied to *E. Primularis*, Butl.

III.—ELODINA PRIMULARIS. ♀. FIGS. 6, 7.

Elodina Primularis, A. G. Butler, "Annals and Magazine of Natural History," ser. 5, vol. 10, p. 152 (August, 1882).

Exp. 2 inches.

Female. UPPERSIDE primrose-yellow, anterior wings with the base and costa grey, and the hind margin black, as in the last species, but much more broadly; the border extends to the hinder angle, and its lower part is distinctly bidentate within. Posterior wings with an ill-defined but moderately broad grey border, more or less broken into spots.

UNDERSIDE. Anterior wings primrose-yellow, darker towards the costa, costa and hind margin edged with a black line; the dark border extends further towards the base than above, and is scarcely indented within; it cuts off a long subapical stramineous triangular space; posterior wings uniformly stramineous.

Body and antennæ nearly as in the last species.

Hab. Duke of York Island.

In the Collections of the British Museum and of Henley Grose Smith.

IV.—ELODINA ANDROPUS. ♂. FIGS. 8, 9.

♀ *Elodina Andropis*, A. G. Butler, "Annals and Magazine of Natural History," ser. 4, vol. 18, p. 246 (September, 1876).

Exp. 2 inches.

Male. UPPERSIDE white, base smoky-grey, on the anterior wings to the end

of the upper part of the cell; thence above the subcostal nervure to the border, which is dark brown, broad above, but narrowed below by indentations, and ceasing just above the hinder angle. Posterior wings white, with a moderately broad regular dark grey border, running from the costa nearly to the anal angle.

UNDERSIDE silvery-white, costa above the subcostal nervure mostly grey, conterminous with a brown submarginal band indented as above, but ceasing a little below the second submedian nervure; a subapical whitish space before the apex and upper half of the hind margin.

Thorax bluish, head and abdomen brown above; body mostly white beneath; antennæ black, very narrowly ringed with white.

Hab. Port Moresby, New Guinea (W. Y. Turner).

In the Collections of the British Museum and of Henley Grose Smith.

V.—ELODINA ARGYPHEUS. ♂. Figs. 10, 11.

Exp. about $1\frac{3}{4}$ inches.

Male. UPPERSIDE white; anterior wings greyish-black along the costa, this colour extending obliquely across the cell, and conterminous with the darker hind-marginal border, which is but little indented within, and narrows gradually to the anal angle; posterior wings white.

UNDERSIDE silvery-white, slightly tinged with yellow at the base of the anterior and along the costa of the posterior wings; anterior wings with the costa and hind margin edged with a black line; costa broadly greyish-black above the median nervure to three-fourths of its length, and then curving obliquely downwards to two-thirds of the length of the hind margin, which it does not touch.

Hab. Guadalcanar, Solomon Islands (C. M. Woodford).

In the Collections of Messrs. Goldman and Salvin and of Henley Grose Smith.

VI.—ELODINA SIGNATA. Figs. 1, 2.

Elodina Signata, A. R. Wallace, "Transactions of the Entomological Society of London," ser. 3, vol. 4, p. 319 (1867).

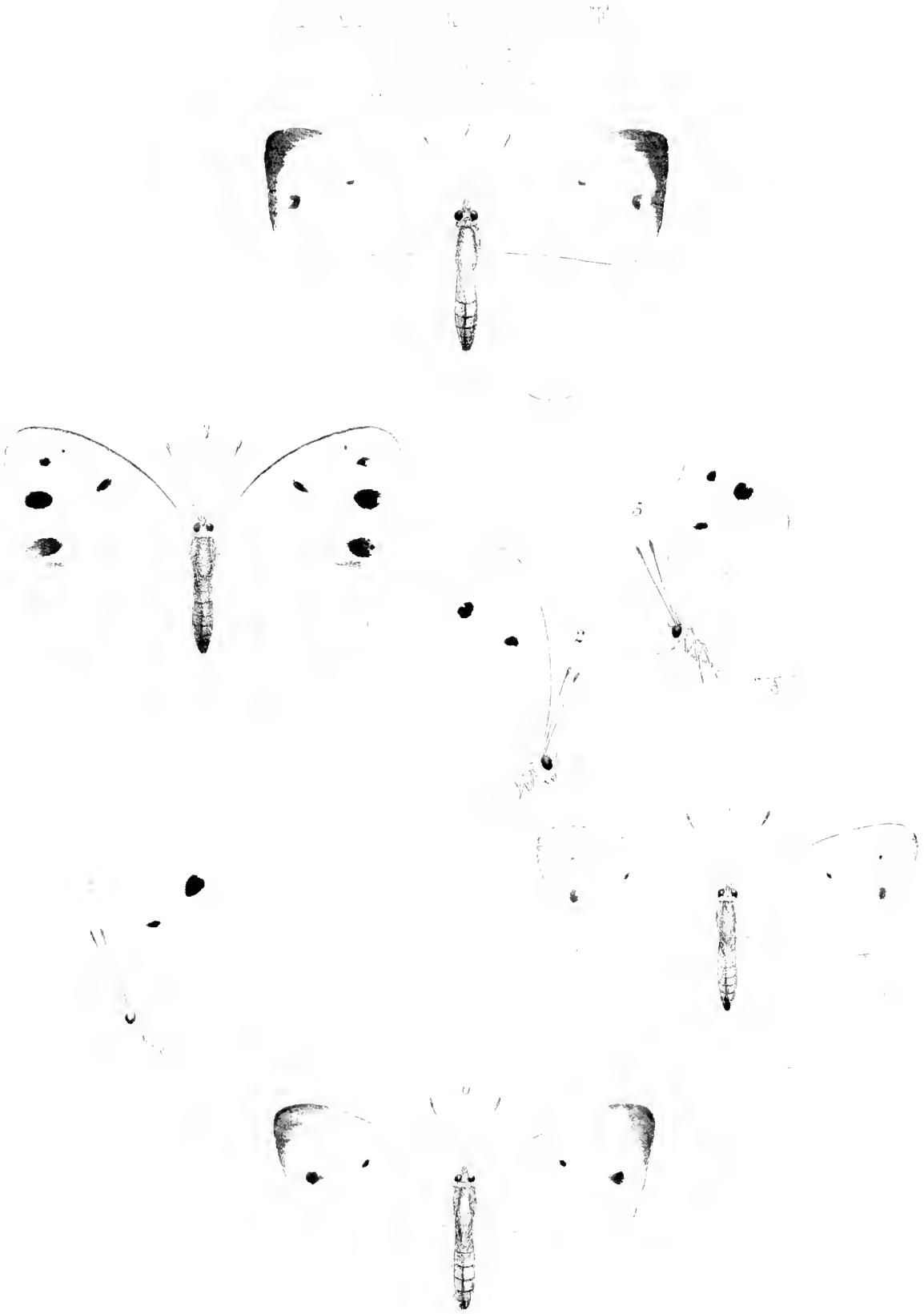
Expands $1\frac{1}{4}$ to $1\frac{1}{2}$ inches.

UPPERSIDE. Anterior wings slightly pointed, black or dark brown, with a large oval white patch running obliquely from near the costa two-thirds of the distance towards the hinder angle. Posterior wings white, blackish towards the base and along the costa.

UNDERSIDE white, with a slight yellowish shade in the centre; blackish along the subcostal nervure and along the costa to two-thirds of its length, when it joins an oblique band curving to the anal angle, and continued along the inner margin; the apex broadly silvery-white, the white space gradually narrowing nearly to the hinder angle. Posterior wings silvery-white, with a short black dash before the end of the cell. In other specimens, immaculate, or dusky at the base, and a transverse band of dusky lunules between the cell and hind margin.

Hab. New Caledonia.

In the Collections of the British Museum, Henley Grose Smith, and others.



1. *Hesperia* *pasiphaea*, ♀

+

2. *Hesperia* *pasiphaea*, ♂ (dorsal view)

3. *Hesperia* *pasiphaea*, ♀ (ventral view)

4. *Hesperia* *pasiphaea*, ♀ (dorsal view)

5. *Hesperia* *pasiphaea*, ♀ (lateral view)

6. *Hesperia* *pasiphaea*, ♀ (ventral view)

7. *Hesperia* *pasiphaea*, ♀ (ventral view)

PAPILIONIDÆ.—PIERINÆ.

BELENOIS. I.

Belenois, Hübn. Verz. bek. Schmett., p. 92 (1822 (?)); Butl. Cist. Ent., I., pp. 37, 50 (1870). (Type, *B. Calypso*, Cram.)

* * * By inadvertence, the plate has been lettered NEPHERONIA instead of BELENOIS.

I.—BELENOIS ANTSIANAKA, WARD.

Pieris Antsianaka, Ward, "Entomologist's Monthly Magazine," vol. 7, p. 30 (1870); "African Lepidoptera," p. 2, pl. 2, figs. 5, 6.

Exp. $2\frac{2}{10}$ inches.

Male. — UPPERSIDE. Anterior wing white, a small black spot at extremity of cell, a larger black spot between first and second discoidal nervules. Apex black. Posterior wing entirely white.

— UNDERSIDE. Anterior wing white, with base broadly marked with orange. Black spots as on the upperside, but more clearly defined, and with two additional, near the anterior margin. Posterior wing entirely white." (Ward, *loc. cit.*)

Hab. Madagascar.

In the first paragraph of this description, we should read "between the two upper median nervules," for "between first and second discoidal nervules."

Mr. Ward adds, "Allied by its plumule to *P. Healyi* Cram., but quite distinct in appearance."

Several closely-allied forms occur in Madagascar, two of which we have figured provisionally under varietal names, not considering them sufficiently distinct to be regarded as distinct species until they are better known.

IA.—BELENOIS ANTSIANAKA, *var.* DRURII. ♂. Figs. 4, 5.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE white. Anterior wings with the costa very narrowly

edged with black, nearly to the apex; three black spots, one at the end of the cell, and two submarginal, one of which is small, between the discoidal nervules, and the other is much larger, between the two upper median nervules. The black apex of the type, as figured in Mr. Ward's book, is represented in the variety here figured by a few scarcely visible black scales at the extreme apex.

UNDERSIDE similar, but the spots much larger; anterior wings suffused with saffron-yellow at the base as high as the costal nervure; posterior wings with the basal third of the costa orange.

Hab. Salary, Madagascar (Last).

In the Collection of Henley Grose Smith.

This insect is called var. *Lasti* on the plate, but as there is already a species called *Mylothris Lasti*, which is apparently also referable to the genus *Belemais*, we propose the name of *Belemais Antsianaka*, var. *Drurii*, for the present form, in remembrance of the eminent entomologist of the last century, and also of Robert Drury, who was one of the first Englishmen who is recorded to have visited Madagascar.

1b. BELENOIS ANTSIANAKA, var. PERSIMILIS. ♂. FIGS. 6, 7.

Exp. $2\frac{1}{2}$ inches.

Male. UPSERSIDE white, anterior wings with the costa narrowly edged with black, and the apex rather broadly blackish, dusted with white; two black spots, one at the end of the cell, and one submarginal, between the two upper median nervules. The small spot between the discoidal nervules is wanting both above and below.

UNDERSIDE otherwise as in var. *Drurii*.

Hab. Salary, Madagascar (Last).

In the Collection of H. Grose Smith.

II.—BELENOIS RAMONA. ♂. FIGS. 1, 2. ♀. FIG. 3.

Pieris Ramona, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 7, p. 123 (January, 1891).

Exp. $2\frac{3}{4}$ inches.

“*Male*. UPPERSIDE. Both wings white. Anterior wings with the inner three-fourths of costal margin narrowly, thence to the apex broadly black, the black gradually narrowing along the outer margin to a little beyond the middle median nervule, where it ceases; a small black spot at the end of the cell, a cluster of black scales forming an indistinct submarginal spot between the upper and middle median nervules, the space from the outer third of the cell, and thence over the disc to the black apical band, and nearly as far as the posterior angle, bright orange.

“UNDERSIDE. Anterior wings very pale orange-stramineous, brighter towards the base, inner margin nearly white; the spots as on the upperside, but larger and very black. Posterior wings, inner half of costal margin bright orange, the rest of the wings stramineous.

“*Female*. UPPERSIDE. Anterior wings pale orange, costal and outer margins narrowly black, a black spot at the end of the cell; four submarginal black spots, the first below the third subcostal nervule minute; the second larger, below the first discoidal nervule, the third the largest, below the upper median nervule, the fourth below the lowest median nervule, about the same size as the third spot, but less defined; a few black scales at the posterior angle. Posterior wings brighter orange.

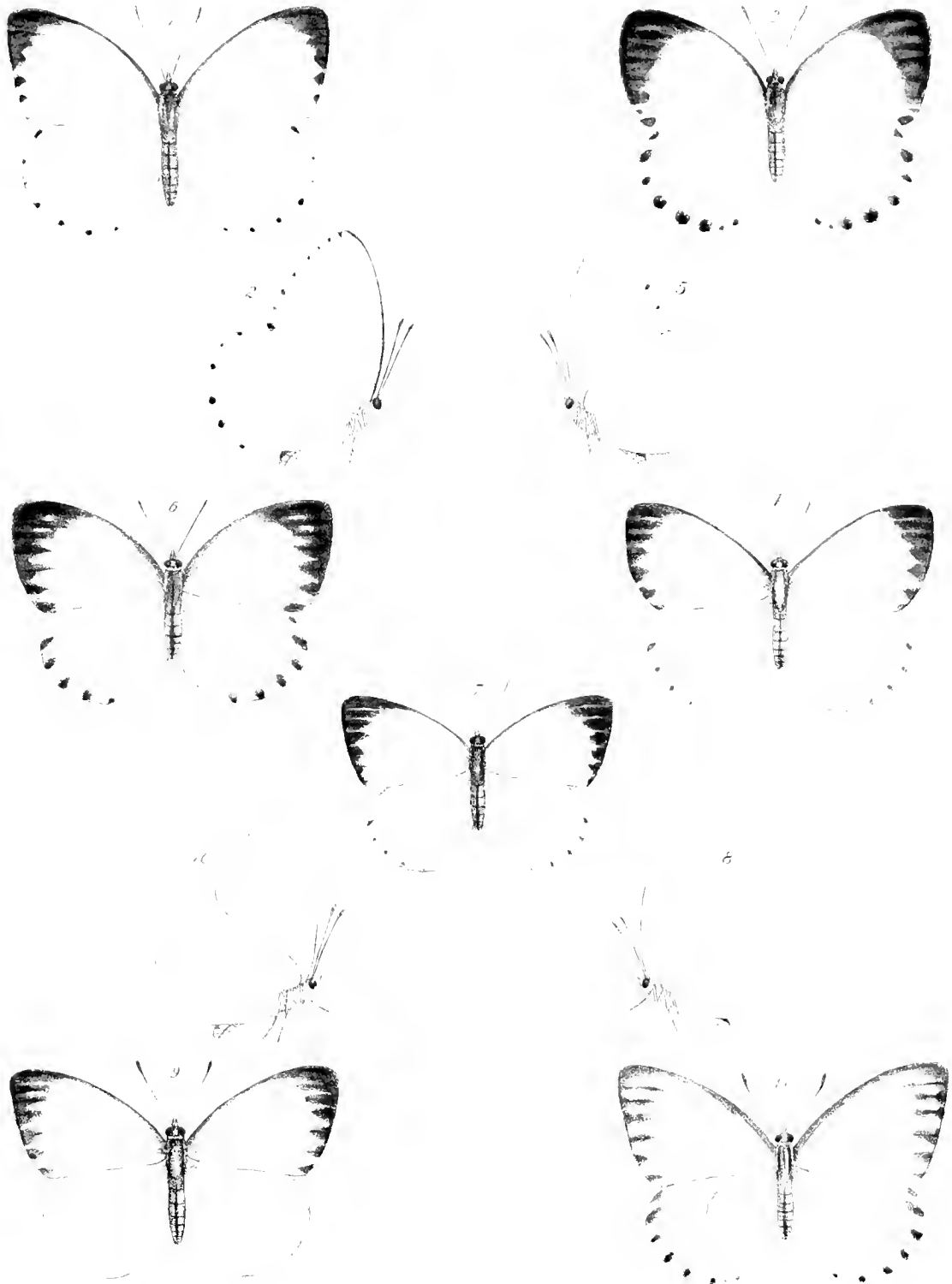
“UNDERSIDE. Anterior wings brighter, and posterior wings paler orange than on the upperside, the spots on anterior wings as on the upperside; the costal margin of posterior wings at the base bright orange.” (H. G. S., *loc. cit.*)

Hab. Madagascar, N.W. Coast (Last).

In the Collection of H. Grose-Smith.

Nearest allied to *B. Antsianaka*, Ward, and *B. Affinis*, Mabille.

PLATE 11
 FIGURES 1-11
 PELENO'S II



100000. Fisher del et lith.

MUSEUM OF COMPARATIVE ZOOLOGY

1. PELENOIS LASTIS
 3. " " ♀
 4.8. " " NAGARE ♂
 6. " " " ♀

7. PELENOIS MAJUNGANA ♂
 9.10. " " ISOKANI ♂
 11. " " " ♀

PAPILIONIDÆ. PIERINÆ.

BELENOIS. II.

III.—BELENOIS LASTI. ♂. Figs. 1, 2. ♀. FIG. 3.

Mylothris Lasti. H. Grose-Smith. "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 121 (February, 1889).

Exp. 2 inches.

Male. UPPERSIDE. Anterior wings white, broadly tipped with greyish-black, the black extending down the outer margin, gradually decreasing to the end of the second median nervule; the lowest median nervule and submedian nervule tipped with black, the latter minutely. Costa narrowly edged with black. Posterior wings lemon-yellow, the nervures tipped with black spots, those on the second subcostal nervule and the submedian nervule the smallest.

UNDERSIDE. Anterior wings white, the apex yellow, and the base slightly marked with yellow in the cell. Costa narrowly edged with black; hind margin with a row of rather small black spots at the extremities of the nervures, that at the extremity of the lowest median nervule the largest. Posterior wings yellow, slightly orange along the costa, especially towards the base; hind margin with the extremities of the nervures spotted with black, the spot at the extremity of the second subcostal nervule the smallest.

Female. UPPERSIDE. Anterior wings white, costa narrowly, and apex and hind margin rather broadly black, the black border becoming narrower towards the hinder angle, which it does not quite reach, and above which it is interrupted by two white streaks. Towards the apex is a slight yellow streak. Base slightly dusted with grey. Posterior wings lemon-yellow, with a row of rather large black spots at the extremities of the nervures; that at the extremity of the submedian nervule the smallest, except a rudimentary spot between the nervures which precedes it.

UNDERSIDE. Both wings nearly as in the male; anterior wings with the fringes black; posterior wings with the marginal spots smaller than on the upperside, the small spot preceding that at the extremity of the submedian

nervure smaller, but better defined than above; in the male it is scarcely indicated.

Antennæ black, very narrowly ringed with white. Body black, clothed with pale hair beneath; abdomen with yellow hair, male with a very distinct grey tuft before the extremity of the abdomen beneath.

Hab. Mombasa (Last).

In the Collections of H. Grose Smith, and others.

"Nearest to *B. Trimenia*, Butl.; but the wings are shorter and broader, the apical black patch in both sexes is much broader, and the marginal spots on the posterior wings of the female are much larger. In another form of the female the posterior wings on the upperside are creamy white, and on the underside buff." (H. G. S., *loc. cit.*)

IV.—BELENOIS NAGARE. ♂. FIGS. 4, 5. ♀. FIG. 6.

Mylothris Nagare, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 124 (1889).

Exp. $1\frac{7}{8}$ inches.

Male. UPPERSIDE. Both wings white, base slightly dusted with grey; costa black, dusted with grey; apex and hind margin black, the lower half dentated and irregular on the inner edge of its lower half, and ceasing just above the hinder angle. Posterior wings with a row of blackish spots before the fringes at the extremities of all the nervures except the costal and submedian.

UNDERSIDE. Anterior wings white, the costa and apex very narrowly black, the base and more faintly the apex, tinged with yellow; two blackish spots near the extremities of the two lowest median nervures. Posterior wings pale creamy-white; base of costa pale orange.

Female. UPPERSIDE white, dusted with blackish towards the base, and inclining to buff towards the costa; costa blackish, strongly dusted with grey; apex and hind margin more broadly black than in the male, the folds between the nervures marked with yellowish or whitish on the border, which is deeply dentated on the inner side, and extends quite to the hinder angle. Posterior wings inclining to buff, thickly irrorated with grey on the inner and hind margins, and with a row of blackish spots before the extremities of the nervures.

UNDERSIDE. Anterior wings white, base and costa yellowish, apex buff, a row of six blackish spots curving inwards and upwards near the extremities of the discoidal and median nervures. Posterior wings buff, the costa pale orange at the base.

Antennæ black, narrowly ringed with white; body black, clothed with paler hairs; a black tuft before the extremity beneath in the male.

Hab. Mombasa (Last).

In the Collection of H. Grose Smith.

V.—BELENOIS MAJUNGANA. ♂. Figs. 7, 8.

Mylothris Majungana, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 7, p. 124 (1891).

Exp. $1\frac{2}{5}$ inches.

Male. **UPPERSIDE**. Anterior wings white, costa narrowly, and apex and hind margin more broadly black, the neighbourhood of the costa dusted with grey, and the border lined and dusted with grey, much dentated on the inner edge on the lower half, and ceasing just above the hinder angle; cell pale red from the base to beyond the middle. Posterior wings pale yellow, with a row of five small black spots at the extremities of the nervures, except the first subcostal nervule, and the submedian nervure.

UNDERSIDE. Anterior wings white, costa very narrowly black, spotted with grey, apex buff, cell reddish-orange nearly to the extremity. Posterior wings buff, darker towards the margins, costa reddish-orange towards the base.

Antennæ black, very slightly ringed with white, body black, clothed with grey hairs; tuft before apex of abdomen beneath apparently buff.

Hab. North-West Coast of Madagascar (Last).

In the Collection of H. Grose Smith.

VI.—BELENOIS ISOKANI. ♂. Figs. 9, 10. ♀. Fig. 11.

Belenois Isokani, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. 3, p. 123 (1889).

Exp. $2\frac{1}{5}$ inches.

Male. **UPPERSIDE** white. Anterior wings with the costa, apex and hind margin black, irrorated with grey. The border is deeply indented on the inner side of its lower portion, and interrupted above the spot at the extremity of the submedian nervure, with which it ceases. Posterior wings with four minute blackish spots at the extremities of the median nervules and submedian nervure.

UNDERSIDE white, unspotted. Anterior wings with the costa very narrowly edged with black; base tinged with yellow. Posterior wings with the base very slightly tinged with yellow, and the base of the costa marked with orange.

Female. UPPERSIDE. Anterior wings creamy white, base tinged with reddish orange nearly to the extremity of the cell; costa blackish, irrorated with grey; the dark border so much irrorated and interrupted with yellowish white and grey that it is reduced to a narrow edging with blackish suffused stripes on the nervures. Posterior wings creamy white, shading into yellowish towards the base and inner margin, with rather large blackish spots at the extremities of the nervures.

UNDERSIDE. Anterior wings white, yellowish towards the costa and hind margin, base bright reddish orange, costa very narrowly black, irrorated with grey, nervures with very small blackish spots at the extremities, that on the submedian nervure most distinct, and the two lowest median nervures irrorated with blackish before the terminal spots. Posterior wings creamy white, with small dots at the extremities of all the nervures, and the base of the costa orange.

Body black, clothed with white hair; legs inclining to yellowish, especially in the male; male with a black tuft before the apex of the abdomen beneath.

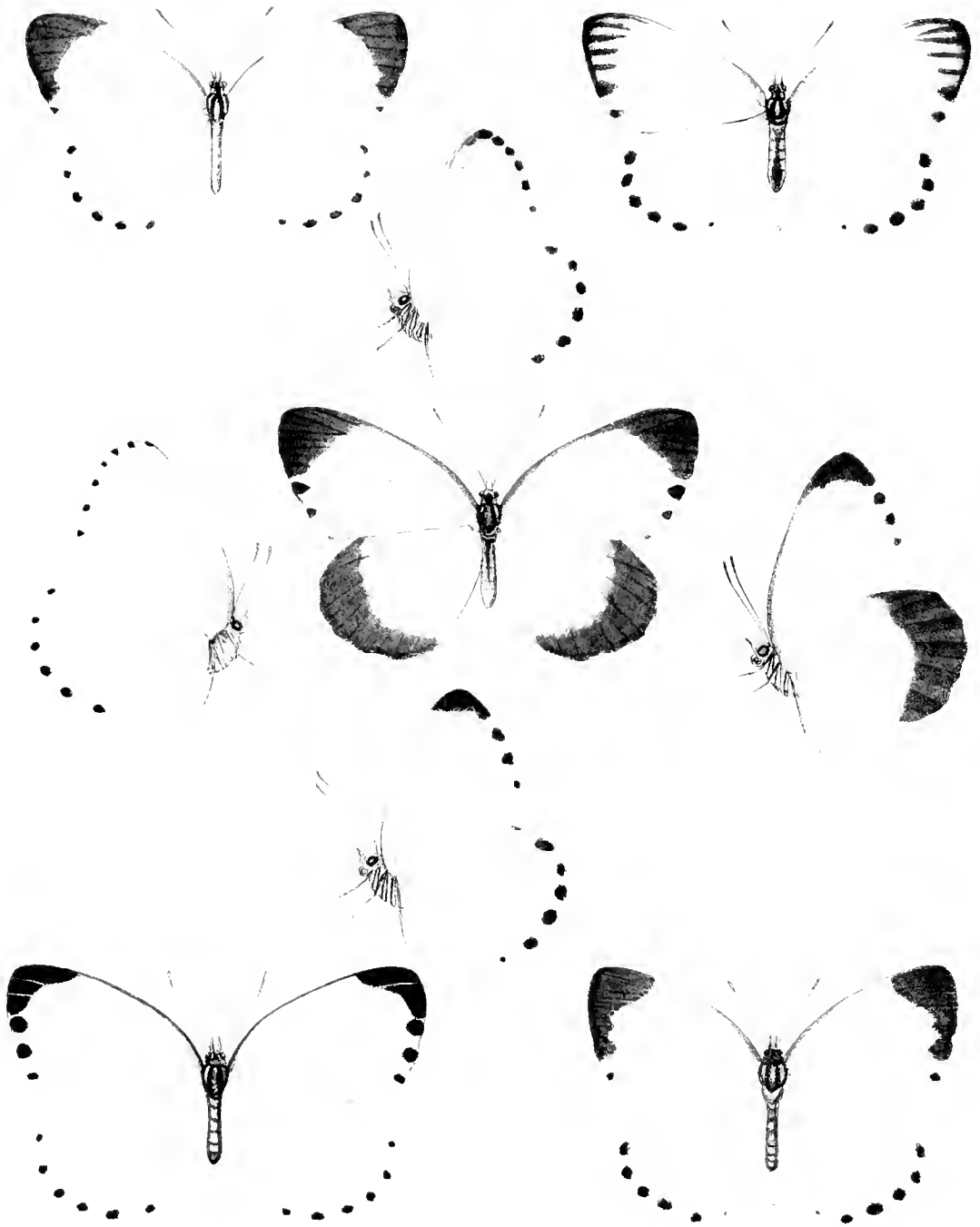
Hab. Mombasa (Last).

In the Collection of H. Grose Smith.

Allied to *B. Coniata*, Butl.

The group of *Pierina* figured on the present plate is now placed with *Phrissura* in the Collection of the British Museum, on account of the presence of a tuft of hair near the apex of the undersurface of the abdomen in the males. But these species differ entirely in venuration from the types of *Phrissura*, agreeing in this particular with *Beleinois*, in which genus we prefer to include them.

PIERIDÆ
MYIOTHRIS L.



From Knappt, near elth

West, Newmann 1844

1. 2. MYIOTHRIS RUPPELLI AMPHOTELUS ♂
 3. " " " ♀
 4. 5. " " CLARIANA ♀

MYIOTHRIS RUPPELLI ♀
 8. 9. " FLAVIANA ♂

PAPILIONIDÆ.—PIERINÆ.

MYLOTHRIS. I.

I.—MYLOTHRIS ASPHODELUS. ♂. FIGS. 1, 2. ♀. FIG. 3.

Mylothris Asphodelus, Butler. "Proceedings Zoological Society," 1887, p. 572.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE "white; primaries above with the basal fourth gamboge-yellow; base of costa greyish, a broad apical black border, tapering on costal margin, interrupted so as to form a separate spot at the end of the second median branch and followed by a black dot at the end of the first median branch; secondaries with six marginal black spots; body greyish, quite normal. Under surface white, slightly pearly; all the wings with rather large black spots on the outer margin; primaries with the basal yellow patch more restricted and rather more golden than above, the apical area tinted with sulphur-yellow; base of secondaries bright yellow towards costa; body below white, legs with a black longitudinal stripe; a black spot on each side of the anal valves."

Female. UPPERSIDE. Anterior wings saffron, becoming paler and almost white towards the inner margin; apex and outer margin with rather broad grey streaks along the veins, most elongate at the apex, becoming shorter towards the outer angle. Posterior wings white with round grey spots at the ends of the veins.

UNDERSIDE as above, but brighter saffron and a more extended white inner marginal area on the anterior wings. Posterior wings with an indistinct narrow band of yellowish saffron on the outer margin. The spots at the ends of the veins on the outer margins of both wings are brighter grey, almost black.

Hab. Cameroons.

In the Collections of the British Museum and H. Grose-Smith.

 II.—MYLOTHRIS CLARISSA. ♀. FIGS. 4, 5.

Mylothris Clarissa, Butler, "Proceedings Zoological Society," 1888, p. 70.
Exp. $2\frac{3}{8}$ inches.

Female. "Primaries as in the male of *M. Chloris* (Fabr.), except that the apical patch is cut rather more obliquely on its inner edge, and that the marginal spots are both well defined; secondaries creamy ochreous, with a broad grey brown external border, considerably narrower, however, than in *M. Chloris*, and with nearly rectangular inner edge; under surface much like the male of *M. Chloris*, excepting that the border of secondaries has a nearly rectangular inner edge, and extends further along the costal margin; the primaries, however, are more widely orange at base, and the subapical area is decidedly yellower."

Hab. Wadelai.

In the Collection of the British Museum.

III.—MYLOTHRIS RÜPPELLI. ♀. FIGS. 6, 7.

Mylothris Ruppelli, Koch, "Indo-Austr. Lep. Fauna" (1865), p. 88.
Exp. $2\frac{1}{4}$ inches.

Female. UPPERSIDE with both wings brighter yellow than the male, and the basal orange areas more extended. On the anterior wings the apical dark area is wider, somewhat greyer and more diffused on its inner edge; the marginal spots on the posterior wings are larger and more oval.

The UNDERSIDE does not differ from the male, except that it is slightly yellower.

Hab. Caffraria.

In the Collection of Mr. Grose-Smith.

IV.—MYLOTHRIS FLAVIANA. ♂. FIGS. 8, 9.

Mylothris Flaviana, H. Grose-Smith, "Annals and Magazine of Natural History," Ser. 7, Vol. I., p. 246, March, 1898.

Exp. 2½ inches.

Male. UPPERSIDE differs from *M. Ochracea*, Auriv., in the colour of the wings, which are uniform yellow, not ochreous, and in the broader greyish-black apex of the anterior wings.

On the UNDERSIDE the dark apical area of the anterior wings is restricted to half the area of the dark markings on the upperside.

Hab. Cameroons.

In the Collection of Mr. Grise-Smith.



PAPILIONIDÆ.—PIERINÆ.

MYLOTHRIS. II.

V.—MYLOTHRIS PRIMULINA. ♂. Figs. 1, 2.

Mylothris Primulina, Butler, "Annals and Magazine of Natural History," Ser. 6, Vol. XIX., p. 627 (1897).

Exp. $2\frac{1}{5}$ inches.

Male. "Above milk-white, the costa and the basal area of primaries to end of cell bright cowslip-yellow, changing at base and on the basal half of costa to bright cadmium-yellow; a smoky black apical patch, rather broader than in *M. Sulphurea*, Auriv., a large spot almost confluent with the latter at end of second median branch, and a dot at end of first median branch also black; secondaries bright cowslip-yellow at base, six small black marginal spots. Body above greenish-grey; abdomen creamy-white at the sides. Primaries below with the cadmium-yellow at the base, more extended, and the apical third of the wing traversed by greenish-yellow internervular streaks; apical patch only visible through the wing, but seven black marginal spots; secondaries with the yellow at base slightly more extended and the base of costa cadmium-yellow, the outer border faintly tinted with primrose-yellow, the black marginal spots rather larger than above. Body below creamy-white, the pectus with a feeble tint of primrose."

Hab. Ondo Country, Lagos (Sir G. Carter).

In the Collection of the British Museum, from the Godman and Salvin Collection. "Intermediate in character between *M. Asphodelus*, Butl., and *M. Sulphurea* from the Cameroons."

VI.—MYLOTHRIS NARCISSUS. ♂. Figs. 3, 4. ♀. Fig. 5.

Mylothris Narcissus, Butler, "Proceedings Zoological Society," p. 95 (1888).

Exp. Nearly 2 inches.

Male. UPPERSIDE "nearest to *M. Trimenia*, Butler, of the same colours.

but the primaries quite distinct in pattern, the base being broadly black (to the middle of the discoidal cell) and dark brown in the female; the costal margin black; apical black border and marginal spots of male fully three times as broad as in *M. Trimenia*; in the female there is a broad dark brown external border tapering on the costal margin, its inner edge acutely tridentate on the median branches and its posterior termination, obtusely pointed, extending one-third towards the base; first marginal black spot of secondaries enlarged in both sexes, but especially in the male, other spots smaller than in *M. Trimenia*. On the under surface the apex of primaries and entire surface of secondaries are sulphur-yellow in the male and chrome-yellow in the female, not gamboge-yellow as in the South African insect; there are also no black marginal spots on the primaries and those of the secondaries are smaller."

Hab. Forests of Tiveta (Hannington).

In the Collection of the British Museum.

"The costal margin of the primaries is noticeably shorter in this species than in *M. Trimenia*."

VII.—MYLOTIRIS FLAVIA. ♂. Figs. 6, 7.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE. Anterior wings lemon-yellow shading into orange at the base, apex broadly greyish-black, narrowing along the outer margin to half-way below the upper median nervule, where it ceases bluntly, and is followed by two subconical spots, of which the lower is half the size of the upper. Posterior wings white, with six round black spots at the ends of the veins.

UNDERSIDE. Anterior wings with the base, cell, and middle part of the disc bright orange, shading into lemon-yellow and becoming white towards the apex, outer and inner margins; seven marginal round black spots commencing on the costa a little before the apex at the ends of the veins, the apical black area of the upperside showing through the wings. Posterior wings orange at the base; shading into lemon-yellow in the cell and the area round it, the rest of the wings white, with six black spots on the outer margin at the ends of the veins.

Hab. Barombi, Cameroons.

In the Collections of Dr. Staudinger, Mr. Grose-Smith, and others.

I received this species from Dr. Staudinger under the name of *Flavia*, but I cannot find he has described it; it is very close to *M. Sulphurea*, Auriv., but the wings are more elongate.

VIII.—MYLOTHRIS SWAYNEI. ♂. Figs. 8, 9.

Mylothris Swaynei, Butler, "Proceedings Zoological Society," p. 821 (1898).
Exp. 2 inches.

Male. **UPPERSIDE.** "Primaries milk-white, the costal border blackish, widening gradually into an apical patch which curves round to join the first of three trigonal marginal spots between veins four and five; internal border also blackish to external angle; secondaries bright lemon-yellow; seven small marginal black spots, the first of which (at end of costal vein) is the largest and elongated; body normal."

UNDERSIDE. "Primaries white, costal border sprinkled with grey scales; base of cell slightly washed with lemon-yellow; apical border lemon-yellow; a marginal series of seven black dots; secondaries as above; body normal, the pectus clothed with greenish-white hair becoming somewhat fulvous at the side of the eyes."

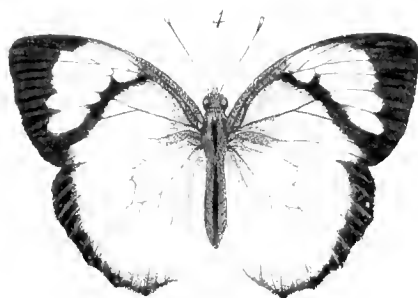
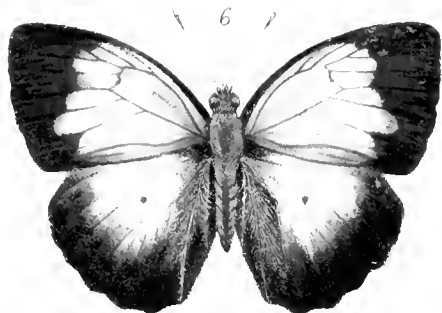
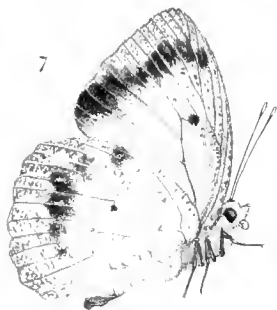
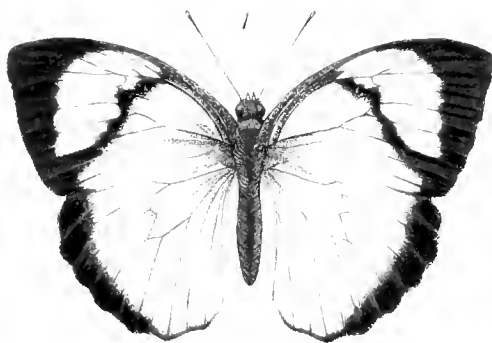
Hab. Harar Highlands (Captain H. G. C. Swayne, R.E.).

In the Collection of the British Museum.

"Intermediate in character between *M. Trimenia*, Butl., and *M. Narcissus*, Butl."

PIERIS 11

IXIAS



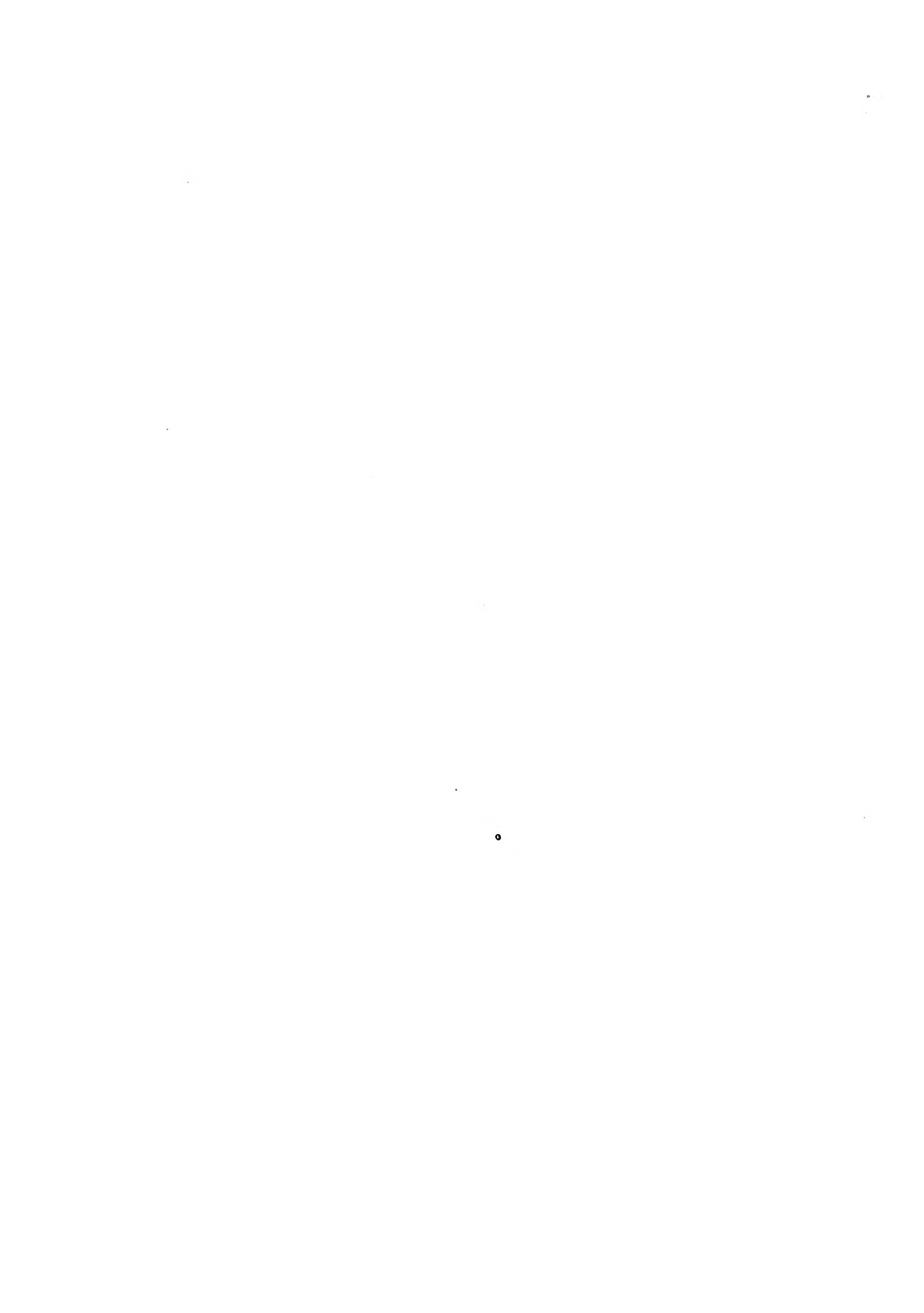
Rose Monteiro del et lith. 1888.

1, 2 IXIAS ANDAMANA ♂
3 IXIAS ANDAMANA. ♀

4, 5 IXIAS MEIPONA ♂
6, 7. IXIAS FLAVIPENNIS ♀

Hanhart imp





PAPILIONIDÆ.—PIERINÆ.

IXIAS. I.

I.—IXIAS ANDAMANA. ♂ FIG. 1; ♀ FIGS. 2, 3.

Ixias Andamana, Moore, "Proceedings of the Zoological Society of London," 1877, p. 590.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE pale primrose, shading into a rather deeper colour at the edges, especially at the anal angle of the hind wings, where the colour is almost sulphur-yellow; fore wings with the apical half black, with a broad oblique orange-red band, divided into nine spots by the nervures (eight longitudinal and one irregularly-shaped) at the upper extremity of the cell; base narrowly and costa to the cell blackish, dusted with pale yellow. Hind wings with a moderately broad black border, which narrows and ceases rather suddenly at the anal angle. Fringes of all the wings pale yellow.

UNDERSIDE bright yellow, paler on the lower half of the fore wings. Fore wings with the costa narrowly black, a large irregular black spot at the end of the cell, and a recurved row of seven black spots running from the costa before the tip to the hinder angle, where the seventh spot forms a large blotch. Hind wings with a small irregular black mark at the end of the cell, and a sub-marginal row of dull orange spots, that nearest the costa being the largest, and dusted with black, and only the three first of the following spots distinct. The ends of the nervules are marked with black dots on all the wings.

Female. UPPERSIDE rather paler than in the male, the orange-red band much narrower and shorter, the spot at the end of the discoidal cell merely indicated; the last but two of the longitudinal spots is contracted on both sides, forming the narrowest part of the band; the spot beneath this is the largest, and is marked with a large black spot, hardly disconnected from the border, at the extremity; of the lowest spot only a curved rudiment is visible at the extremity.

UNDERSIDE as in the male, but the spots are much larger and darker, being distinctly blackish, the four upper ones on all the wings, and the discoidal spot of the fore wings centred with white.

Hab. Andamans.

In the Collection of Henley Grose Smith.

 II.—IXIAS MEIPONA. FIGS. 4, 5.

Ixias Meipona, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 19, p. 296 (April, 1887).

Exp. $1\frac{5}{8}$ inches.

Male. "UPPERSIDE. Anterior wings: apical half dark brown, basal half sulphur-yellow, irrorated near the base with black, the brown area crossed beyond and partly above the cell by a broad irregular transverse orange band, which extends into the cell at its upper angle. Posterior wings sulphur-yellow, with a rather broad dark brown margin, tapering towards the anal angle.

"UNDERSIDE sulphur-yellow, very sparingly irrorated with black. Anterior wings paler towards the inner margin, with a black spot at the end of the cell, and another indistinct spot near the inner angle. Posterior wings with a smaller black spot on the upper discocellular nervule. Both wings with minute black spots on the margins at the ends of the veins.

"Hab. Burmah.

"In the Collection of Henley Grose Smith.

"Near *I. Latifasciatus* of Butler, but smaller, the dark margins on the upperside of the posterior wings much narrower, and the upperside is almost clear sulphur-yellow, instead of being densely irrorated." (H. G. S., *loc. cit.*)

On the upperside of the fore wings, the costa above the cell, as well as the base (narrowly) is blackish, irrorated with yellow. On the under surface, the inner margin of the fore wings is whitish, and there is a double blackish patch on the hind margin just above the hinder angle.

III.—IXIAS FLAVIPENNIS. FIGS. 6, 7.

Ixias Flavipennis, Henley Grose Smith, Forbes' "Naturalist's Wanderings," p. 275 (1885).

Exp. $2\frac{1}{4}$ inches.

Female. "UPPERSIDE both wings orange-yellow from the base, extended over about two-thirds of the wings, shaded with grey, the nervures and remainder of the wings dark brown.

"UNDERSIDE both wings yellow, mottled with brown, anterior wing with a black spot at the end of the cell, and an irregular submarginal row of brown confluent spots, extending from the outer to the hinder angle; posterior wing with a submarginal row of brown spots, commencing on the costa, between the nervures, and extending to the third median nervule, with a black spot on the first discocellular nervule.

“Hab. Mount Dempo (Sumatra), at a height of 4,000 feet.” (H. G. S., *loc. cit.*)

In the Collection of Henley Grose Smith.

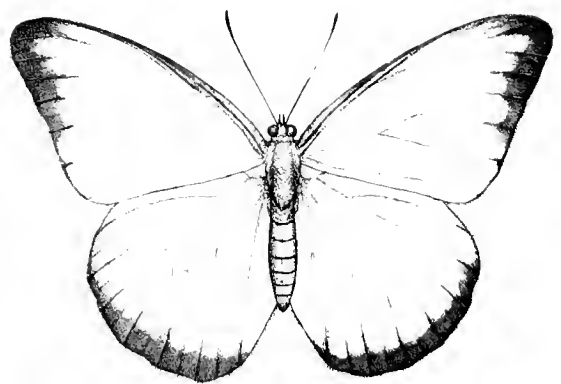
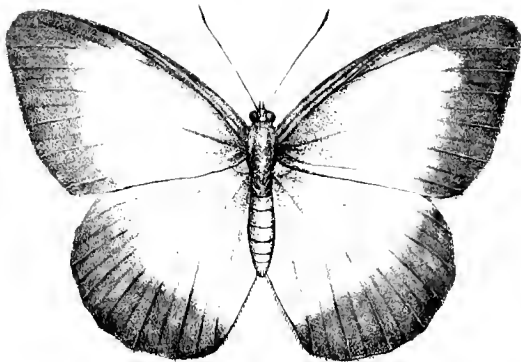
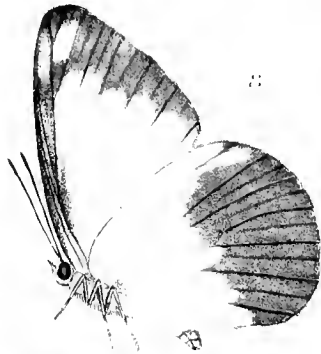
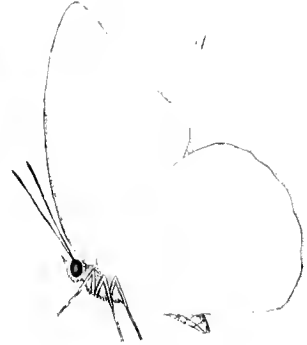
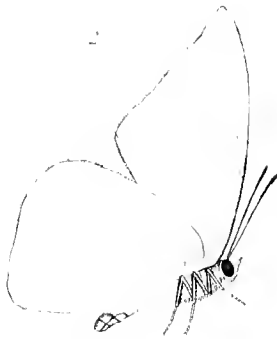
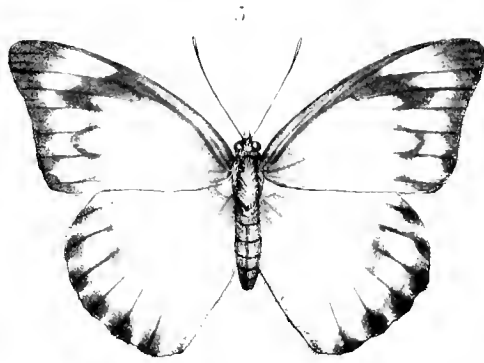
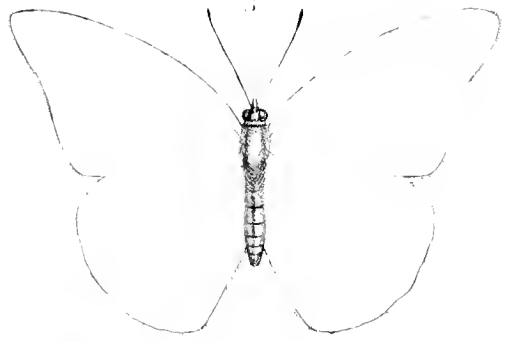
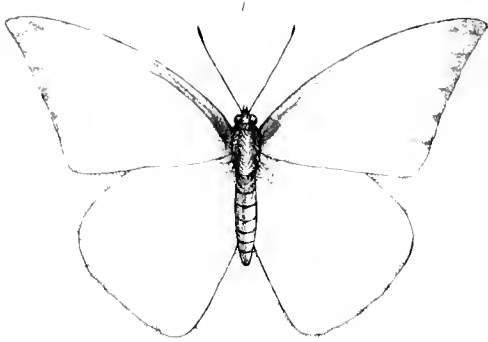
The deep orange of the fore wings is much clouded with brown, and the costa is narrowly black. On the hind wings the inner margin is black, and clothed with yellowish hairs; and there is a small black spot at the end of the cell, crossed by the yellow discocellular nervule. On the under surface some of the larger submarginal spots are indistinctly centred with whitish, and the costa of the fore wings is narrowly black.

This remarkable species has no near ally in the genus, and it is to be regretted that only a single female was obtained.

PAPILIONIDÆ.

PIERINÆ

APPIAS I.



171 Les del et aith.

Mus. v. G. 10

L. S. APPIAS NEBO.

3, 4. APPIAS FLAVIUS, ♂

6 APPIAS FLORENTIA, ♂

F " " ♀

7, 8 " " ♀

PAPILIONIDÆ.—PIERINÆ.

APPIAS. I.

I.—APPIAS NEBO. ♂. Figs. 1, 2.

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE pale orange, anterior wings very acute and somewhat falcate, costal area and hind margin narrowly blackish, dusted with yellowish-grey, nervures mostly blackish, and widening into the dark hind margin. Posterior wings somewhat elongate towards the anal angle, and less rounded in general contour than in *A. nero*, Fabricius, much paler on the costa and inner margin, the nervures concolorous.

UNDERSIDE buff, anterior wings with the greater part of the base and centre suffused with orange.

Antennæ black, ringed with white. Body greenish above, white below.

Hab. The upper reaches of the Chindwin River, Upper Burma (Adanson).

In the Collection of Major Adanson.

II.—APPIAS FLAVIUS. ♂. Figs. 3, 4. ♀. Fig. 5.

Appias Flavius, H. Grose Smith, "Annals and Magazine of Natural History," ser. 6, vol. x., p. 426 (December 1892).

Exp. $2\frac{1}{2}$ inches.

Male. UPPERSIDE. Resembles *A. nero*, Fabr., but is more yellowish-orange, the veins are the same colour as the wings, not black as in *A. nero*, nor is there any dusky shading towards the margins.

UNDERSIDE. Anterior wings paler, and posterior wings yellower than on the upperside. The dusky indistinct submarginal bands which cross the disk of both wings of *A. nero* are absent on the anterior wings, and on the posterior wings are represented by a dusky patch beyond the cell.

Female. UPPERSIDE. Both wings paler yellowish-orange than in the same

sex of *A. nero*. On the anterior wings the discocellular nervules, and the median nervure from the base to its junction with the lowest median nervule are narrowly black, all the rest of the veins in the centre of the wings being flavous; the sinuate dark band which crosses the disk of the female *A. nero* is in *A. flarius* narrower, and not interrupted between the lowest median nervule and the submedian nervure; the space towards the base of both wings which is irrorated with dusky scales, is more restricted than in the female *A. nero*."

Hab. Taganae Island, North-east Borneo (Cator).

"From a good series of this insect, in which the characteristics above described are uniform, I am induced to consider this variety as worthy of description. The ordinary form of *A. nero* was not captured in the island. Some of the male specimens are more red than others, a variation which also occurs with *A. nero*, but in all of them the veins are the same colour as the rest of the wings. In coloration it approaches the variety of *A. nero* from the Island of Palawan, but it is less bright, though brighter than *A. zarintha*, Boisduval, from Celebes."

III.—APPIAS FLORENTIA. ♂. FIG. 6. ♀. FIGS. 7, 8.

Exp. $2\frac{3}{4}$ inches.

Male. UPPERSIDE, white, with black borders. Anterior wings with the costal region black, dusted with white; apex and hind margin black, most broadly to half the length, and linear towards the hinder angle, the adjacent parts of the nervures black, a white bar projecting into the black below the apex. Posterior wings with the black border moderately broad, linear at the apex and along the inner margin; the adjacent parts of the nervures black, the white projecting furthest into the border below the apex; just within the border the white ground colour is thickly dusted with black.

UNDERSIDE. Anterior wings white, costa, apex and hind margin black, costa slightly speckled with black, an oval white spot, yellowish externally, before the apex; hind marginal border linear at the hinder angle. Posterior wings canary-yellow, with a very broad black border occupying two-fifths of the wing; a large orange spot dusted with black at the apex, divided by the fine subcostal nervure, which is black where it crosses the spot. Below this orange spot the black border begins. There is a large orange blotch occupying the middle third of the inner margin, and extending over the inner third of the disc.

Body white, varied with grey; antennæ and legs black, the former ringed and the latter lined with white.

Female. UPPERSIDE. Anterior wings creamy-white in the middle, with broad black costal and hind marginal borders; base bluish-grey. Posterior wings bluish-grey, whiter towards the costa, with a very broad black border occupying the outer two-fifths of the wing.

UNDERSIDE. As in the male, except that on the anterior wings the pale part is yellow instead of white, the subapical spot being deepest in colour, and the dark band along the outer margin extends down to the hinder angle. On the posterior wings the dark band extends considerably within the cell.

Hab. Guadalcanar, Solomon Islands (C. M. Woodford).

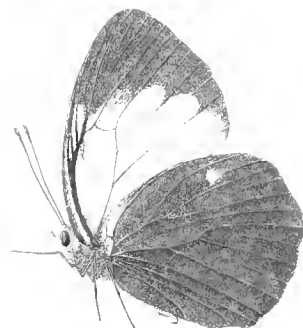
In the Collections of Messrs. Goldman and Selvin, Crowley, and H. Grose-Smith.

This species is very near to *A. Ada*, Cramer, and differs principally in the female, that sex of *Ada* having a very much narrower dark marginal band, the inner edge of which on both wings is more or less dentate, while that of *Florentia* is more regular; further, on the anterior wings the dark band of the female *Ada* on the outer margin gradually tapers to the anal angle, the band of *Florentia* being of almost uniform width and reaching broadly down to the inner margin, where it extends to a width of one-fourth of the wings.

In the male of *Ada* the subapical spot on the underside of the anterior wings is yellow or orange, while in the male of *Florentia* that spot is white, and the greyish black band on the outer margin is much wider, but less dentate on its inner edge than in *Ada*; and on the upperside of the posterior wings of *Florentia* (male) the dark marginal border is more suffused, its inner edge being less clearly defined.

PAPILOMORPHAE.

PIERIDAE.



1 APPIAS LALASSIS. ♂ 4 & APPIAS WHITEHEAD. ♂
2 " " " " " " 6, 7 TACHYRIS ABNORMIS. ♂
3 " " " " " " 8 9 METAFORIA BELUCHA. ♀

Hartshorn.

PAPILIONIDÆ.—PIERINÆ.

PLATE II.

VI.—APPIAS LALASSIS. ♂ . FIG. 1. ♀ . FIGS. 2, 3.

Appias Lalassis, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 265 (October, 1887).

Exp. $2\frac{3}{4}$ inches.

UPPERSIDE white, anterior wings falcate, with a small black spot at the end of the cell, and (in the female) a second between the lower discoidal and first median nervules; the apex and outer margin as far as the second median nervule irrorated with ashy in the male, and more extensively with black in the female; costa edged with a narrow black line.

UNDERSIDE. Anterior wings white, with the two spots well marked in both sexes; apex pale pinkish-brown.

Posterior wings pale pinkish-brown, shaded with indistinct brown markings.

Hab. Burmah, near the Siamese frontier. (Major Adamson.)

In the Collections of Major Adamson and H. Grose Smith.

May be compared with *A. Lalage*, Doubl., but is not closely allied to any known species.

VII.—APPIAS WHITEHEADI. ♂ . FIGS. 4, 5.

Appias Whiteheadi, Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 434 (December, 1887).

Exp. $2\frac{5}{8}$ inches.

Male. UPPERSIDE: Anterior wings rather pointed, white to beyond the cell, at the extremity of which is a distinct black spot; base of wings ashy, costa above the cell, apex and hind margin broadly black, the inner edge of the black border running irregularly to the hinder angle; a small white rather elongated spot near the apex, and another just below the middle of the hind

margin. Posterior wings white, with a broad black border, within which the white shades into greyish.

UNDERSIDE. Anterior wings nearly as above, but the apex is pinkish-grey, covering the subapical white spot; the spot near the middle of the hind margin is larger than above. Posterior wings with the basal third light ochraceous, very slightly irrorated with grey towards the base; the remainder of the wing pinkish-grey, crossed with an indistinct irregular dark band, bordered externally towards the apex with pale pinkish-grey; the spot at the end of the cell is bright ochraceous.

Fringes of all the wings grey.

Hab. Kina Balu Mountain, North Borneo. (John Whitehead.)

In the Collections of Messrs. Whitehead and H. Grose Smith.

Allied to *A. Pandione*, Hübn.

VIII.—DELIAS ABNORMIS. ♂. Figs. 6, 7.

Tachyris Abnormis, Wallace, "Transactions of the Entomological Society of London," ser. 3, vol. 4, p. 368, pl. viii. fig. 5 (1867).

Exp. $2\frac{1}{2}$ to $2\frac{3}{4}$ inches.

Wings short and broad, as is also the cell of the anterior wings; pearly white, slightly greenish towards the base, anterior wings with the costa dusky, and apex and hind margin with a broad blackish-brown border, indented between the nervures, commencing on the costa beyond the cell, and diminishing to the hinder angle; hind wings with a moderately broad blackish-brown border, which becomes linear at the anal angle.

UNDERSIDE. Anterior wings as above, but the costal region brown above the cell, with a white spot above and below the base of the first branch of the subcostal nervure; upper part of cell greenish-yellow at the base, followed by a long cinnabar-red streak, the space between this and the extremity of the cell brown. Posterior wings blackish-brown, the base of the costa with a short greenish-yellow stripe, the male with a red spot towards the tip, and another towards the anal angle.

Hab. N.W. Papua (Wallace); New Guinea (H. G. S. Coll.).

In the Hewitson Collection in the British Museum (*type*), and in that of Henley Grose Smith.

IX.—METAPORIA BELUCHIA. ♀. Figs. 8, 9.

Aporia Belucha. Marshall, "Proceedings of the Zoological Society of London," 1882, p. 760.

Metaporia Sorax. Henley Grose Smith, "Annals and Magazine of Natural History," ser. 5, vol. 20, p. 129 (August, 1887).

Exp. $1\frac{3}{4}$ to 2 inches.

“UPPERSIDE. Both wings white. Anterior wings with the margins and nervures black, a broad black patch at the end of and beyond the cell, the inner side of which curves towards the base, the outer side irregular, and the black extending partially along the first and second median nervures: an irregular submarginal black band from the costal margin to the third median nervule: between the band and the outer margin, which is broadly black, between the nervures, which are also broadly black, are seven white streaks,—the first small, the second linear, the third and fourth larger than the first, the fifth nearly obsolete, the sixth the largest, and the seventh smaller than the sixth, but larger than the fifth. Posterior wings with the margins and ends of the nervures black; an obscurely-defined submarginal row of hastate spots, and a small black spot at the end of the cell between the discoidal and first median nervule.

“UNDERSIDE. Anterior wings as above, with the costal margin and apex pale yellowish-brown; the outer margin and ends of the nervures narrowly black. Posterior wings yellowish-brown, with black nervures and margins, and a well-defined submarginal band of hastate spots.” (H. G. S., *loc.*)

Hab. Ziàrut Pass, near the Keewàs Valley (Beluchistan), at an elevation of 8,000 feet above the sea. (Col. A. M. Lang, R.E.; June 18.) Gwashiki, fifty-seven miles S.E. of Quettah, at an elevation of 8,600 feet. (Mr. Dodgson, R.A.)

In the Collections of Major Marshall and Mr. Henley Grose Smith.

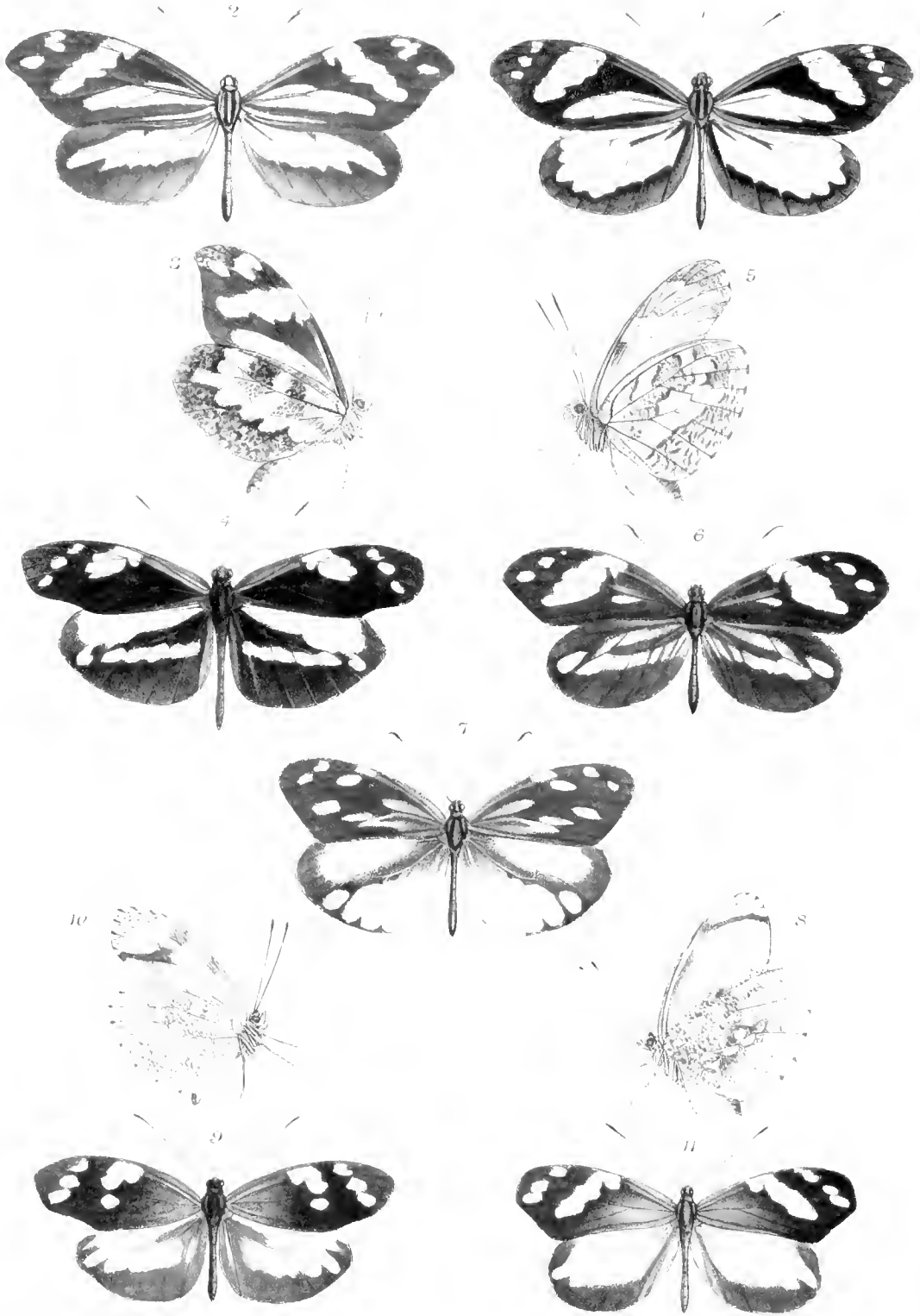
Major Marshall mentions that in some specimens [probably males] the submarginal white spots on the anterior wings extend to the hind margin, leaving only a conspicuous submarginal dark band.

Intermediate between *M. Sorax*, Moore, and *M. Leucalica*, Eversm., size of the latter more distinctly related to *M. Nabellica*, Boisdu, and *M. Bicti* and *Larcaldoi*, Oberth., &c.

ΠΑΡΟΥΣΙΑΣ

ΠΕΡΙΝΕ

ΔΙΣΜΟΡΦΙΑΣ



Char. Gen. 1861 et 6th

West, Neveu an 1861

1 ΔΙΣΜΟΡΦΙΑ ΧΥΡ Ν. ♂
 2,3 " " ♀.
 4,5 " ΜΕΔΩΡΙΛΛΑ ♀.
 6 " " ♀

8 ΔΙΣΜΟΡΦΙΑ ΜΙΡΑΝΔΟΛΑ ♂
 9,10 " ΜΕΔΩΡΙΝΑ ♂
 11 " " ♀

PAPILIONIDÆ.—PIERINÆ.

DISMORPHIA. 1.

I.—DISMORPHIA CUBANA. ♂. FIG. 1. ♀. FIGS. 2, 3.

Leptalis Cubana, Herrich-Schäffer, "Correspondenz-Blatt des zoologisch-mineralogischen Vereins in Regensburg," XVI., p. 120 (1862).

Dismorphia Cubana, Gundlach, "Contribucion á la Entomología Cubana," p. 81 (1881).

Leptalis Spio, var. A. Boisduval, "Species Général des Lépidoptères," I., p. 421 (1836).

Exp. about $2\frac{1}{2}$ inches.

Male. UPERSIDE. Anterior wings black, with an orange-tawny band running from the base above and below the median nervure, and for more than half the distance between the two lowest median nervules; beyond the middle of the wing an oblique yellow band runs from the costa to below the upper median nervule; and there is an oblique subapical row of four yellow spots, the second smallest. Posterior wings orange-tawny, with a rather broad blue-black border, and a black basal streak running through the middle of the cell nearly to its extremity.

UNDERSIDE. Anterior wings brown, with the yellow markings as above; but the orange-tawny band replaced by pale rosy. Hind wings brown, mottled with white, and towards the anal angle with yellowish-green; a row of buff spots runs below the cell, and curves up to the costa before the tip; and there are three other spots above, and one at the end of the cell.

Female. UPERSIDE black; anterior wings with all the markings yellow; posterior wings with a broad yellow band running from the base on both sides of the median nervure, and above the discoidal nervule nearly to the hind margin.

UNDERSIDE as in the male, but all the principal markings are yellow, and

there is a yellow subcostal line from the base, which is more distinct than in the male.

Hab. Cuba (Gundlach).

In the Collection of Mr. Adams.

This species differs from *L. Spio* (Godart), which inhabits St. Domingo, by the less acute anterior wings, and the absence of any fulvous markings in the female, and in the outer bands and spots in the male.

II.—DISMORPHIA MEDORILLA. ♂. FIGS. 4, 5. ♀. FIG. 6.

Leptalis Medorilla, Hewitson, "Equatorial Lepidoptera collected by Mr. Buckley," V., p. 81 (1877).

Exp. $2\frac{1}{2}$ inches.

"*Male*. UPPERSIDE. Dark brown. Anterior wing with a large quinquefid yellow spot below the middle of the costal margin, and three separate and equidistant spots of the same colour near the apex. Posterior wing with the costal margin where it meets the upper wing dull orange-yellow, crossed below it by a straight band of five yellow spots.

"UNDERSIDE steel-grey, clouded with brown, which is irrorated with yellow; the yellow spots and bands as above, but paler on the posterior wing.

"*Female*. Like the male, except that the anterior wing has a small yellow spot between the first and second median nervules, that the large yellow spot is lengthened into a band, and that the posterior wing has a second short band of yellow from the base" (Hewitson). The orange space on the costa of the posterior wings is wanting in the female.

Hab. Ecuador (Buckley).

In the Hewitson Collection (Natural History Museum), and in Mr. Grose-Smith's Collection.

III.—DISMORPHIA MIRANDOLA. ♂. FIGS. 7, 8.

Leptalis Mirandola, Hewitson, "Entomologist's Monthly Magazine," vol. XIV., p. 180 (1878).

Exp. $2\frac{1}{5}$ inches.

Male. UPPERSIDE. Anterior wings dark brown, with three rather indistinct greenish-yellow bands running from the base, the first costal, the second in the

lower half of the cell, and the third near the inner margin. The costal stripe terminates, just beyond the middle of the wing, in a bright yellow oblong spot, obliquely below which is an oval yellow spot at the end of the cell. Towards the hind margin, between the two upper median nervules, is another oval yellow spot, towards which runs the lowest of the basal bands, which terminates in two long yellow spots, separated by the lowest median nervule. There are also two yellow spots (the uppermost bisected by a nervule) situated obliquely towards the tip of the wing. Posterior wings with a very large oval orange space on the costa, bordered by a broad pale brown band, which covers the base and lower part of the cell, and then curves upwards on the hind margin; the fringes towards the apex are sulphur-yellow. Below the cell, the wing is sulphur-yellow, bordered with brown above the lowest median nervule, and also on the hind margin, a detached yellow spot being cut off by the upper median nervule.

UNDERSIDE. Anterior wings white, the costa and apex yellow, mottled with brown on the basal half, and again below the termination of the costal nervure. This is bordered below by a very narrow brown band, which curves downwards along the hind margin to form a slight border. Posterior wings yellow, mottled with brown on the basal half, and with several rather indistinct pearly white spots, in the cell, and all around it.

Hab. Ecuador (Wolf).

In the Hewitson Collection (Natural History Museum), and in that of Mr. H. Grose-Smith.

Resembles *D. Zacha* (Hewitson) in form and general appearance, and *D. Medora* (Double-day) in colour.

IV.—DISMORPHIA MEDORINA. ♂. Figs. 9, 10. ♀. Fig. 11.

Leptalis Medorina, Hewitson, "Entomologist's Monthly Magazine," vol. XII., p. 9 (1878).

Male. UPPERSIDE dark brown. Anterior wings crossed by two oblique rows of yellow spots, the first just beyond the middle, and composed of two spots, the uppermost very large, and indented below, the second round, and rather small. Between this and the apex of the wing is the other row of three round spots. Posterior wings silvery towards the costa; below this is an irregular yellow band, inclining outwardly to orange; hind and inner margins broadly dark brown.

UNDERSIDE. Anterior wings yellow towards the costa and apex; basal half of costal area dusted with blackish. Apical area bordered inside with blackish; the rest of the wing pearly bluish-grey, with a large whitish spot on the inner margin, and the two innermost yellow spots of the upper side faintly visible. Posterior wings yellow, mottled with brown, especially about and above the end of the cell; a row of pearly white spots curves from below the costal nervure, to the middle of the inner margin, in addition to which there is a large spot nearer the base in the subcostal area, and another beyond the cell, between the discoidal and upper median nervules.

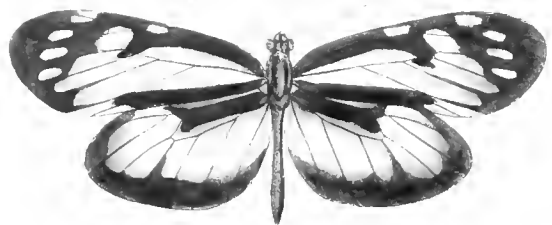
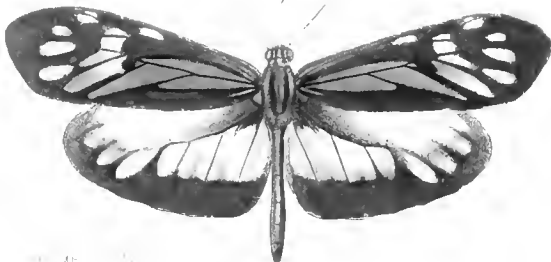
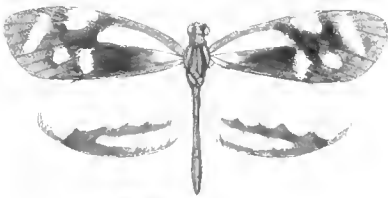
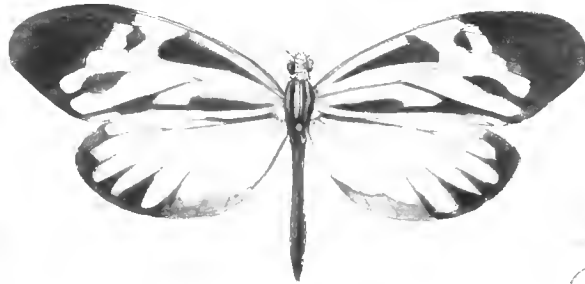
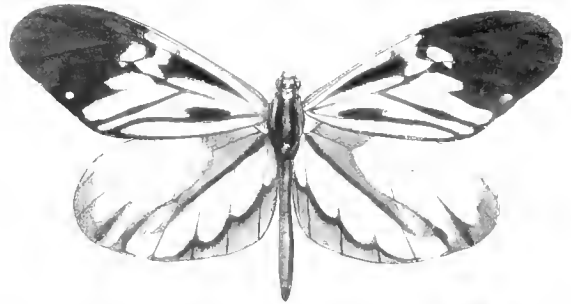
Female. UPPERSIDE nearly as in the male, but of a paler brown; anterior wings with the spots replaced by an oblique yellow band running from the middle of the costa to the middle of the lowest median nervule; hind wings yellow, with a broad brown border, indented in the middle nearly to the hind margin, and yellow fringes.

UNDERSIDE less mottled with brown, and with the pearly spots less distinct than in the male.

Hab. Bolivia (Buckley).

In the Hewitson Collection, and in that of Mr. Grose-Smith.

“Nearly allied to *L. Medora* (Doubleday), from which it differs on the upperside by having the central band of the anterior wings broken, and on the underside by the white spots of the posterior wing” (Hewitson). The male of *D. Medorina* also slightly resembles *D. Idonia* (Hewitson), but in the latter species the lower spot of the inner row on the anterior wings is very large, and the posterior wings are destitute of any orange markings, being only marked with a rather narrow yellow band.



1. *THEMIS* *THEMIS* *THEMIS* *THEMIS*

2. " " " "

3. *THEMIS* *THEMIS* *THEMIS* *THEMIS*

4. " " " "

5. *THEMIS* *THEMIS* *THEMIS* *THEMIS*

6. " " " "

PLATE 12

PAPILIONIDÆ.—PIERINÆ.

DISMORPHIA. II.

V.—DISMORPHIA TRICOLOR. ♀. Figs. 1, 2.

Exp. $2\frac{1}{2}$ inches.

Female. UPPERSIDE black. Anterior wings with a yellow line running from the base above the subcostal nervure to a broad yellow patch, covering both sides of the cell from the costal nervure to the middle median nervule. The intersecting nervures are narrowly dark, and there is a large, nearly square spot at the end of the cell, in the middle of the yellow patch. On its outer side the patch is triangularly and rather deeply indented near both its upper and lower extremity. On the inner margin is a red stripe from the base running for three-quarters of the length of the wing, and intersected by the submedian nervure, and a short black line above it. Posterior wings with a narrow red stripe on the costa, paler at both ends, and a red band, broken into spots by the median nervure and its branches, running from the basal half of the inner margin, and extending over the lower part of the cell. The last spot, which is more widely separated, and much nearer the hind margin than the others, is red and yellow, and situated above the upper median nervule.

UNDERSIDE similar, but paler; posterior wings with the red markings suffused, and a row of white submarginal spots between the nervures.

Body black above, orbits and head beneath white, antennæ white beneath as far as the club, but more or less ringed with black; legs streaked with white; pectus white behind, and with two large white spots on each side; abdomen dull yellow beneath.

Hab. not known.

In the Collection of Mr. H. Grose-Smith.

Not closely allied to any known species of *Dismorphia*, but somewhat resembles *Heliconius Vicinus*, Ménétries, and other similarly-marked *Heliconii* in its markings.

VI.—DISMORPHIA RHOMBOIDEA. ♂. FIGS. 3, 4. ♀. FIG. 5.

Dismorphia Rhomboidea, Butler, MS.

Exp. $2\frac{2}{3}$ - $2\frac{3}{4}$ inches.

Male. **UPPERSIDE**. Anterior wings black, broadly streaked with orange-tawny on both sides of the nervures on the lower half of the wings. Nervures black, narrowly lined with yellow towards the base. Costal area brown above the costal nervures, and orange-tawny below; it terminates in a yellow stripe (preceded by a small black triangle on the subcostal nervure), which forms the continuation of an *hour-glass*-shaped spot, yellow above, and orange-tawny beneath, which fills up the end of the cell, and is preceded by a detached orange stripe from the base, filling the lower part of the cell, and is followed by a large yellow spot beyond the cell, with one or two smaller spots below it. There are broad orange-tawny stripes filling up the space between the inner margin and the middle median nervule; the uppermost is short, but is followed by an indistinct yellow spot towards the hind margin; the rest extend nearly to the hind margin, but the spot between the median and submedian nervures is largely excavated on its lower basal half, and much constricted beyond. Posterior wings with the basal half light smoky-brown, with the outer portion filled up with a very large white spot, deeply indented outside on the middle median nervule; this is followed by an orange-tawny stripe, merging into yellow on the outer margin, which it almost touches, and narrowly bordered with black; the intersecting nervures are also narrowly black. Inner margin, and adjacent portion of the hind margin, reddish-brown, narrowly edged outside with black.

UNDERSIDE. Anterior wings white, with the costa and apex light brown; and the tawny and yellow stripe between the costal and subcostal nervures as above, but paler. Posterior wings brownish-tawny, with a large yellow blotch filling up the apical third of the wing, except a brown border, and followed by white spots on each side of the middle median nervule. A black band filling up the upper part of the cell and extending a little above it; a large irregular black spot covering the end of the cell, an oblong spot above it, below the costal nervure, and another black spot between the two lower median nervules.

Head black, spotted with white, antennæ yellow, blackish on the inner side at the base, and the club light reddish-brown. Thorax black, largely marked with yellow; legs black, abdomen brown.

Female. Anterior wings as in the male, but with the outer portion of the

orange-tawny bands yellow, and rather more extended; the inner margin is lined with white at the base. Posterior wings orange-tawny, the subcostal nervure broadly black towards the base; costa yellowish, hind margin black, the dark colour running inwards along the nervures; but towards the anal angle the tawny colour of the wing becomes browner, and is only narrowly edged with black.

UNDERSIDE as in the male, but on the posterior wings the dark markings are more extended, and on the dark hind margin are several clusters of white and yellow speckles, hardly aggregated into spots.

Hab. "Nanta" (probably Eastern Peru).

The male is in the Hewitson Collection (British Museum) without name; and the female is in the General Collection of the Museum.

Allied to *D. Discrepans*, Butler, from New Grenada, but with more extended orange-tawny markings.

VII.—DISMORPHIA NELLA. ♂. FIG. 6. ♀. FIGS. 7, 8.

Dismorphia Nella, Butler, MS.

Exp. 2 inches.

Male. UPSIDE. Anterior wings blackish, with a tawny band running from the base nearly to the end of the cell, and the base of the wing between the cell and the inner margin more narrowly tawny. Beyond the level of the cell are several subhyaline spots; an irregular one on the costa, divided into three by the nervures: two on the inner margin; a short transverse band; and two spots near the hind margin. Posterior wings bluish-grey above the middle of the cell, and tawny below, with a blackish border; and a black transverse band at two-thirds of their width.

UNDERSIDE nearly as above, but on the anterior wings the lower two-thirds are bluish-white, and the posterior wings are tawny, bordered with brown; and with a brown band running through the upper part of the cell, and curving back beyond and below it to the base. On the dark border is a row of white submarginal spots; and there is a larger white spot in the fork of the subcostal nervure.

Head and thorax black, spotted with white, especially beneath; abdomen light brown.

Female. UPSIDE. Anterior wings tawny, with the costa, inner margin, and apical half black. Beyond the tawny portion of the wing are a trifold

subcostal and a bifid median spot, yellowish-white, slightly speckled with red; a subapical bluish-white stripe, and four small submarginal spots, arranged in pairs. Posterior wings with the border broadly black, with some indistinct white submarginal spots towards the tip, and with two black bands crossing the tawny part of the wing, one across the upper part of the cell, and the other running half way between the cell and the inner margin.

UNDERSIDE nearly as above, but with a continuous row of submarginal white spots on all the wings, and the posterior wings with the outermost tawny markings shading into yellow. There is also a bifid semi-detached yellowish spot towards the extremity of the costa.

Hab. New Grenada.

In the Hewitson Collection, and in the General Collection of the British Museum.

Allied to *D. Theucharila*, Doubleday, from Venezuela; but in that species all the outer spots are yellow.

VIII.—DISMORPHIA HEWITSONI. ♂. FIGS. 9, 10. ♀. FIG. 11.

Dismorphia Hewitsoni, Kirby, "Transactions of the Entomological Society of London," 1881, p. 355.

Leptalis Rhetes, Hewitson in Collection; not of his "Exotic Butterflies."

Exp. $2\frac{1}{2}$ - $2\frac{3}{4}$ inches.

Male. UPPERSIDE. Anterior wings black, with a lilac band in the centre, running from the base, and divided into three by the median nervure and the first median nervule; above the latter it runs out to a point nearly to the hind margin. The inner margin is edged with a white line to the middle. Below the extremity of the lilac band are two small lilac streaks between it and the inner margin, and on the outer half of the wing are two rows of long spots, the lower ones largest: the inner row lilac, except the uppermost spot, which is white, as well as one or two subcostal spots nearer the base, and the outermost row of spots. Posterior wings black on the borders and below the cell, but crossed below the cell by a row of bluish-grey spots, curving upwards and merging into white externally; above the cell the wing is light brown, with a large pale yellow blotch at and beyond the extremity of the cell, which extends to the costa, and is dusted with brown externally, where it melts into the outer whitish spots.

UNDERSIDE brown and reddish-brown; anterior wings with the markings more extended, incorporating the inner row of spots, and with two additional

bluish-white spots at the tip. Posterior wings reddish-brown, the cell bordered above and below with black, and entirely surrounded by a bluish-white band divided into spots by the nervures, interrupted by a square black blotch above the end of the cell and broadest externally, where it is shaded with brown; the nervures are black, and the pale band is edged below with black; towards the apex are three more bluish-white spots.

Body black, head spotted with bluish white above, and, as well as the thorax, largely varied with white beneath.

Female.—UPPERSIDE smoky brown, with the pale markings more extended than in the male, and of a bluish subhyaline grey. On the posterior wings the yellow blotch is absent, and the subhyaline markings form a continuous band round the cell, as on the undersurface of the male.

UNDERSIDE nearly as in the male, but the brown and red markings are paler, the only distinctly black markings being the band, filling the upper part of the cell on the posterior wings.

Hab. Chiquinda, Ecuador (Buckley).

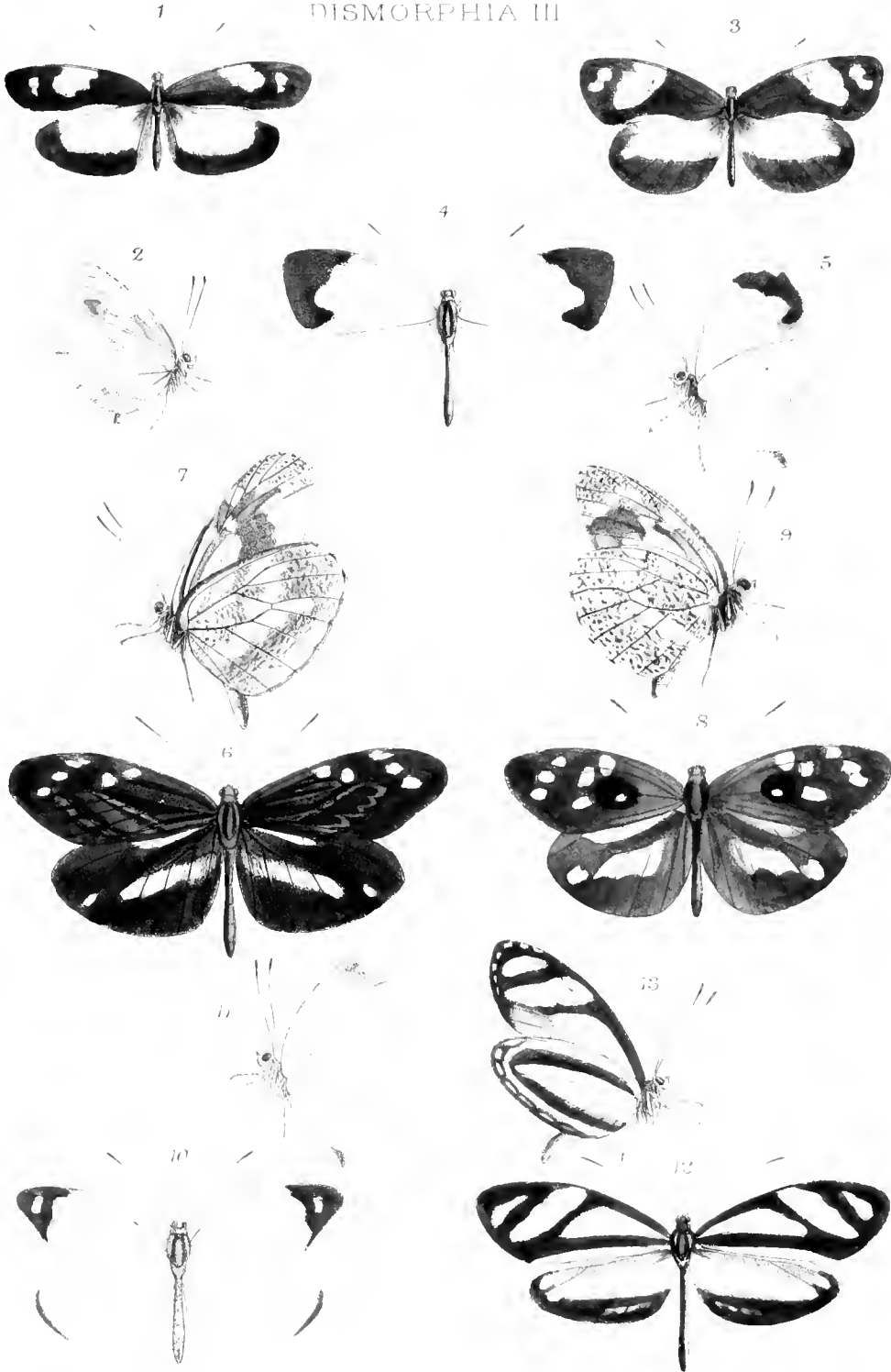
In the Hewitson Collection (British Museum), and in that of Mr. H. Grose-Smith.

Differs from *D. Rhelus*, Hewitson, from Colombia, by its larger and narrower anterior wings, and in the smaller size of the outer row of white spots, as well as, to some extent, in pattern and coloration. Hewitson figured *D. Rhelus* from a specimen which he received under that name from Boisduval; and afterwards placed a specimen of the present species in his own Collection under that name.

PAPILIONIDAE

PILRINEAE

DISMORPHIA III



from Francis de Planch

Wm. Newman del.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
 4, 5
 6, 7

PROSERPINA ♂
 " ♀
 CRETACEA ?
 PRANICE ♂

8, 9 DISMORPHIA HIPOTOS ♂
 10, 11 CUTIPENNIS ♂
 12, 13 ILLA ♂

PAPILIONIDÆ.—PIERINÆ.

DISMORPHIA. III.

IX.—DISMORPHIA PROSERPINA. ♂. Figs. 1, 2. ♀. FIG. 3.

Exp. about $1\frac{3}{4}$ inches.

Male. **UPPERSIDE.** Anterior wings brown, with a broad oblique primrose-coloured spot crossing the end of the cell, from just below the costa, to below the middle median nervule; between it and the hind margin is an irregular primrose-coloured spot, and the middle part of the inner margin is also bordered with primrose-colour below the submedian nervure. Posterior wings primrose-coloured, with a large ashy space on the costa, the base dusted with black, and a broad brown border, shading into ashy at the apex of the wing, where it ceases.

UNDERSIDE primrose-coloured, anterior wings with a large yellowish-grey space on the inner margin, bordered above and outside with iridescent white; towards the hinder angle is a blackish patch. Posterior wings also pale yellow, but paler in the middle than on the borders.

Body black above, but clothed with white hair beneath; antennæ ringed with white.

Female. **UPPERSIDE** similar to the male, but the posterior wings more yellow, and wanting the ashy space on the costa. Posterior wings primrose-coloured, dusted with black in and below the cell towards the base, and with a broad black band curving round the wings from the costa to the inner margin.

UNDERSIDE resembles the male, but the oblique primrose-coloured spot which crosses the upper part of the middle of the anterior wings is surrounded, except on the costal side, by a broad greyish-black area, which extends nearly to the inner margin, and the posterior wings are irregularly flecked with dusky markings and minute spots, except in the lower part of the cell, and a longitudinal space beneath it.

Hab. Roraima.

In the Collection of Mr. H. Grose-Smith.

Allied to *D. Coce*, Felder, from Venezuela, and *D. Othor*, Hewitson, from New Granada.

 X.—DISMORPHIA CRETACEA. ♀. FIGS. 4, 5.

Exp. $1\frac{7}{8}$ inches.

Female. UPPERSIDE creamy white, slightly yellower on the posterior wings. Anterior wings with a broad deep black border, which terminates in a rounded projection inwards just above the hinder angle.

UNDERSIDE. Anterior wings as above, but the costa yellowish, and the band bordered outside at the tip and along the hind margin with the same colour. Posterior wings buff-yellow, with two brown bands, the upper band running obliquely from the base below the subcostal nervure, being slightly bifid at the fork of the subcostal nervules, to the costa before the tip; the lower one nearly straight, but not extending either to the hind or inner margin.

Head and thorax black, prothorax and front femora yellow; abdomen yellowish-white; antennæ very narrowly ringed with white.

Hab. Espirito Santo, Brazil.

In the Collection of Mr. H. Grose-Smith.

Allied to *D. Mercatoria*, Felder.

XI.—DISMORPHIA PRAXIDICE. ♂. FIGS. 6, 7.

Leptalis Praxidice, Hewitson, "Transactions of the Entomological Society of London" (1870), p. 153.

Exp. $2\frac{1}{10}$ inches.

Male. UPPERSIDE. Dark lilac-blue. Anterior wing crossed from the middle of the inner margin to beyond the middle of the wing by a broad semi-transparent brownish band, divided by the median nervules into four parts: two white spots, one bifid [thus Hewitson; but both are cut by the subcostal nervules in the specimen here figured, which appears to be the type] at the middle of the costal margin, and three similar spots, one bifid, before the apex. Posterior wings crossed from near the middle of the inner margin to the outer margin below the apex by a band and spot of white, the band divided into four parts by the nervures. On the costa is a long buff patch.

UNDERSIDE. Blue-pearly-grey, clouded with darker colour. Anterior wings, with the white spots as above, but less distinct, a large buff patch on the inner margin, running upwards obliquely over the disc and the lower part of the cell, except at the base, the outer margin from the lowest subcostal nervule to the

inner margin broadly grey. Posterior wings with two large yellow spots at the base, and some irroration of the same colour on the subcostal nervure; the white band as above, but indistinct and suffused; and four large suffused white spots (one in the cell) between it and the middle of the costal margin, and another subcostal spot half way between this and the base.

Body black above, whitish below. Lower orbits white, and antennæ spotted with white.

Hab. Granadillas, Ecuador (Villagomes).

In the Hewitson Collection (British Museum, Natural History, S. Kensington), and in Mr. Grose-Smith's Collection.

Hewitson subsequently regarded this species as synonymous with his *Leptalis Teresa*; but apart from important colour-differences, the anterior wings of *Dismorphia Teresa* are distinctly pointed, while those of *D. Paradiseæ* are rounded.

XII.—DISMORPHIA HIPPOCAS. ♂. Figs. 8, 9.

Leptalis Hippocastus, Hewitson, "Entomologist's Monthly Magazine," XII., p. 10 (1875).

Exp. $2\frac{3}{10}$ inches.

Male. UPPERSIDE black. Anterior wings with a small spot before the middle; a band of three spots, two of which are bifid, and the lowest is surmounted by a small dot; and a subapical band of three spots, all white. Posterior wings with a buff patch on the costa, edged below with iridescent white, and a white central band, ending in a detached subtriangular spot near the hind margin.

UNDERSIDE lilac-grey, irrorated with brown. Anterior wings with the outer row of spots as above, but suffused; a large white patch on the inner margin, bordered outside by the first row of spots, and above by a band filling the remainder of the cell, which, like the spots just mentioned, which form a continuous band, is brilliantly iridescent. Posterior wings with about twelve more or less distinct white spots, the central ones forming a curved band; the others are a large subcostal one nearer the base, and a small one below it, on the upper discocellular nervule; and a large spot between the end of the cell and the hind margin. Towards the base of the hind wings are two large yellow

spots; and all the space bordering the white band of spots and the outlying spots is irrorated with yellow as well as with brown.

Body black, abdomen whitish below; antennæ narrowly ringed.

Female. UPPERSIDE brownish-gray. On the anterior wings the spots below the median nervure and between the two lowest median nervules are larger and more elongate. On the posterior wings the spots in the white central band are narrower and the outermost is much longer; above this band are two indistinct grey spots, one inside, the other outside, the end of the cell. On the underside the posterior wings are flecked at the base and in the middle with numerous yellow markings more or less minute.

Hab. Ecuador (Buckley).

The Male is in the Hewitson Collection (British Museum, Natural History, S. Kensington), and the Female in the Collection of Mr. Grose-Smith.

Allied to *D. Praxidice*.

XIII.—DISMORPHIA ACUTIPENNIS. ♂. FIGS. 10, 11.

Dismorphia Acutipennis, Butler, MS.

Exp. $1\frac{2}{3}$ inches.

Male. UPPERSIDE creamy-white, all the wings produced to a point at the apex. Anterior wings with the apex black, marked with an oblong creamy spot. The inner edge is irregular, and the border ends in a point below the middle median nervule. Posterior wings with the hind margin narrowly bordered with black for a short distance below the apex, and shading into yellow on the disc below the cell.

UNDERSIDE. Anterior wings white, with the apex and costa yellow. Posterior wings yellow, with two longitudinal brownish stripes, the first angulated obliquely upwards at the fork of the subcostal, but ceasing at the costal nervure; the other running from opposite the middle of the inner margin towards the apex, but not extending to either.

Head and thorax blackish above; head yellow beneath; thorax orange; abdomen white above and below.

Hab. Trinidad (Hart).

In the Collection of the British Museum (Natural History).

Allied to *D. Lina*, Herbst, but with a subapical spot on the anterior wings, and the posterior wings yellower and less strongly tipped with black.

XIV.—DISMORPHIA ELA. ♂. Figs. 12, 13.

Leptalis Ela, Hewitson. "Equatorial Lepidoptera," V., p. 82 (1877).

Exp. 2½ inches.

Male. UPPERSIDE. Dark brown. Anterior wings crossed by three bands of pale yellow—one from the base to the middle of the wing; one beyond the middle, oblique; the third near the apex, whiter than the others; the inner margin also yellow. Posterior wings yellow, the costal margin bluish-iridescent white; the outer margin (which has a short irrorated yellow band near the anal angle) dark brown.

UNDERSIDE blackish, with a row of white submarginal streaks between the nervures. Anterior wings with yellow markings as above, but the inner marginal area is bluish-iridescent white. Posterior wings with a yellow band commencing on the costa, extending nearly to the white submarginal streaks, and then curving round to the inner margin above the anal angle; within it, but not touching it at any point, is a long yellow band running from the base.

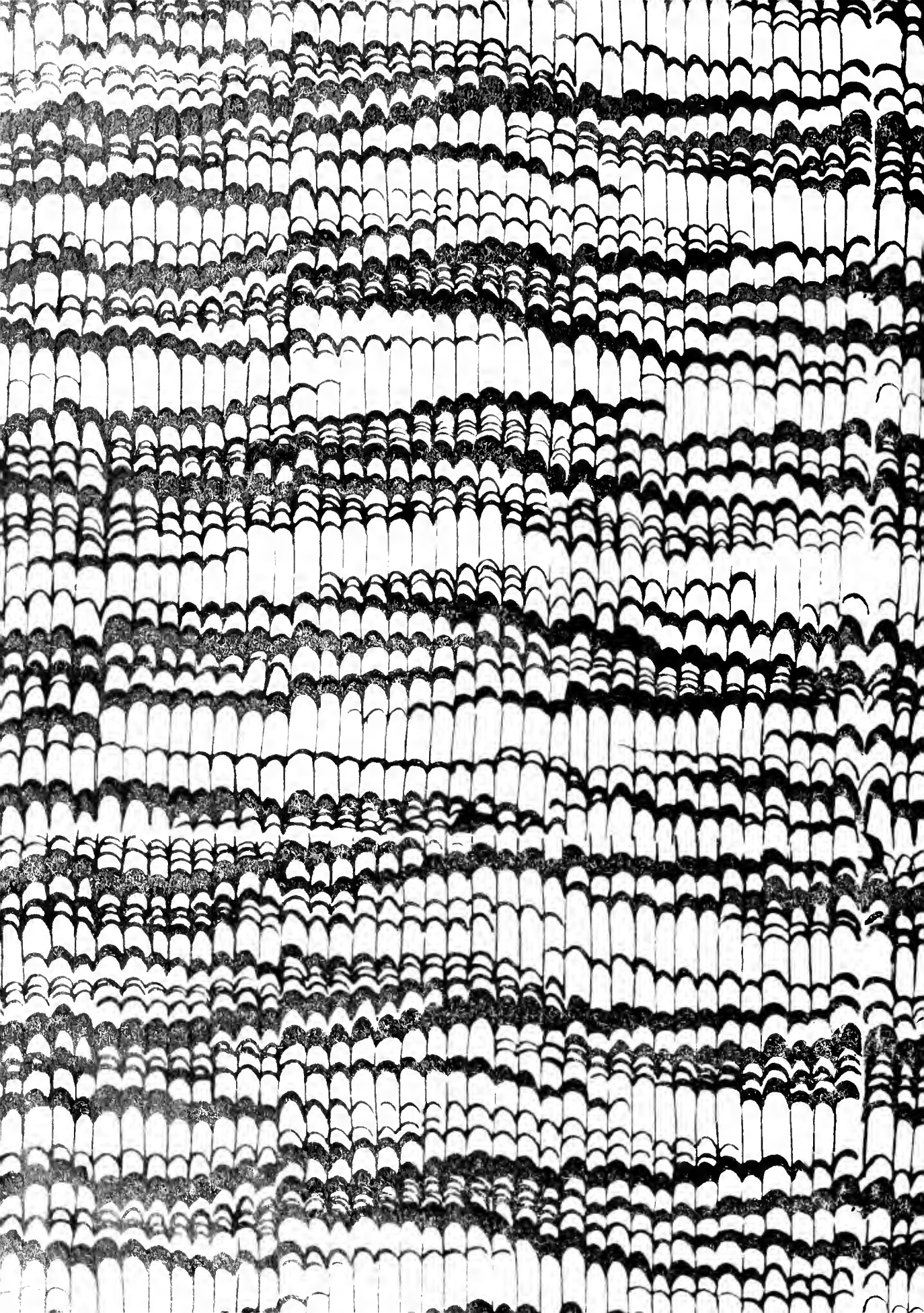
Body black above, and yellow beneath; antennæ ringed with white.

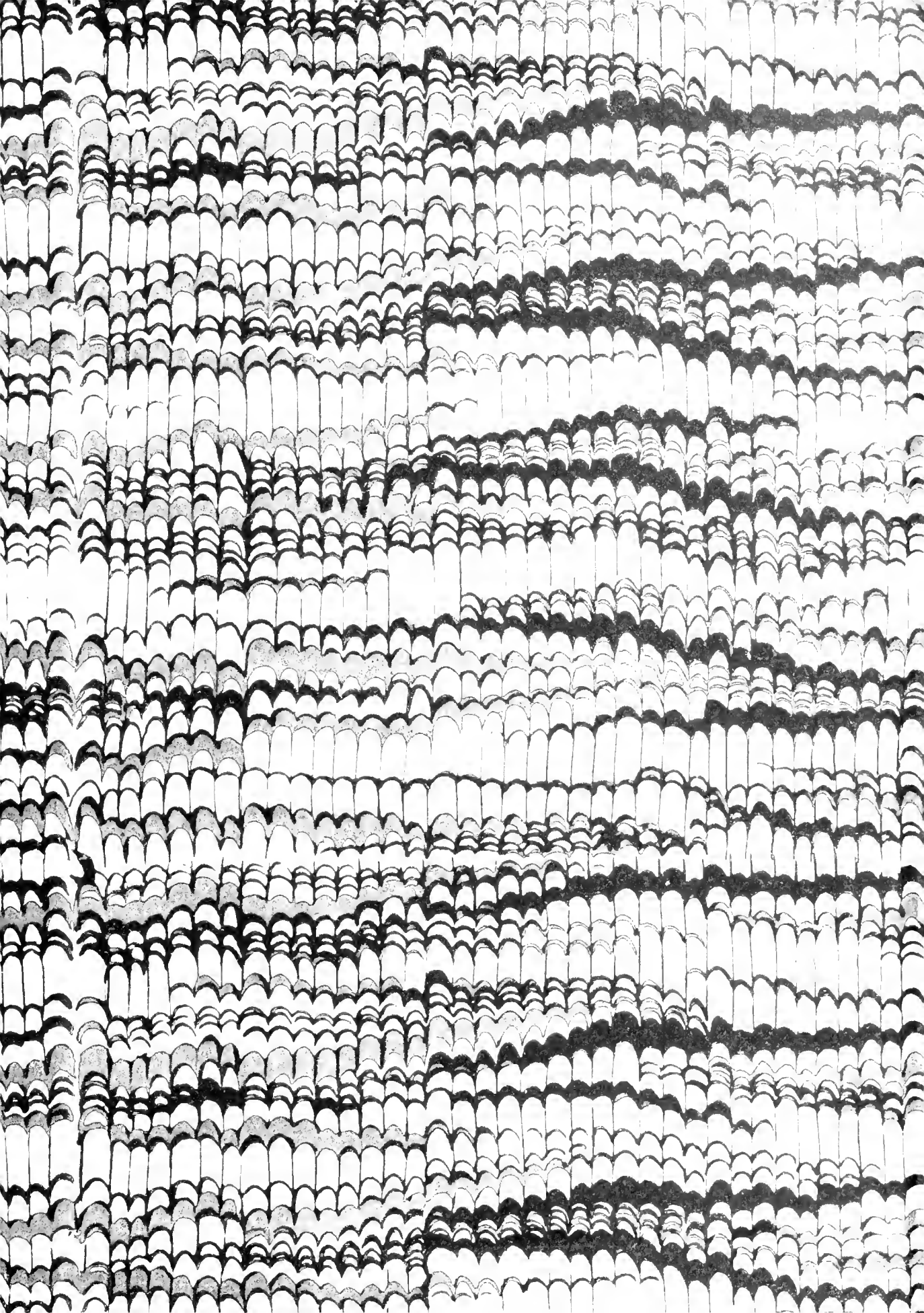
Hab. Jima, Ecuador (Buckley).

In the Hewitson Collection (British Museum, Natural History), and in Mr. Grisebald's Collection.

"Very near to *L. Pithopsis*, Lam. (= *E. ocellata*, Gruner), but of much greater expanse; the forewing narrower, and of different form" (Hewitson).

10
M. 11





SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00251522 9

sheet Q1542 S649
v. 1 Rhopalkera exotica