

THE  
LEPIDOPTERA OF CEYLON.

BY

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## PREFACE.

At the commencement of the year 1844, Sir William H. Gregory, then Governor of Ceylon, having had his attention called by Dr. Thwaites, the Director of the Botanical Garden at Peradeniya, to the accuracy and beauty of the botanical drawings made by his native draftsman, Mr. W. de Alwis, permission was given, on the suggestion of Dr. Thwaites, that this draftsman might be engaged in copying from nature the Lepidopterous Insects of the Island, in which subject Dr. Thwaites took great interest. Under his supervision these drawings were made, from specimens chiefly collected by him. Mr. Geo. de Alwis, brother of Mr. W., also having shown much talent, Sir Wm. Gregory employed him at his own expense in copying the drawings already made and in preparing fresh ones, and it is from these copies, which were lent for the purpose by Sir Wm. Gregory, as well as from natural specimens, that the figures on the plates of this work are taken.

This series of drawings of the Lepidopterous Insects of Ceylon—representing about 350 species, of which about 250 are figured in their various stages of larva, pupa, and imago—was placed in the Author's hands, together with the collection of specimens formed by Sir Wm. Gregory, for the purpose of being arranged and named.

This collection of drawings was subsequently exhibited at a Meeting of the Entomological Society of London, held March 6th, 1878, and was considered to be such a valuable contribution to Eastern Entomology that the following resolution was proposed by the President in the chair and passed, viz. : “It was hoped that an application to the Ceylon Government for their publication would be successful.”

A proposal was therefore drawn up by the Author and submitted for the approval of Sir Wm. Gregory, and, in the event of the publication of these drawings being undertaken by the Colonial Government, tendered his services gratuitously in editing the work and preparing descriptions of the various species

represented, at the same time offering to incorporate with them additional materials, with the view of thus forming as complete a history of the Lepidopterous Fauna of Ceylon as was at present possible.

This proposal to publish was forwarded by the Secretary of State for the Colonies, after consultation with Sir Joseph Hooker, to the present Governor of Ceylon, Sir James Longden. It was warmly taken up by him, and a vote for the publication was submitted to the Legislative Council, which was unanimously approved. The Secretary of State for the Colonies, Sir M. Hicks-Beach, gave his sanction to the vote, and the work was placed in the hands of Messrs. L. Reeve and Co. for publication.

In addition to the drawings above referred to, and the materials in his own collections, consisting of a considerable number of species obtained at various periods in Ceylon, the Author is much indebted to Mr. F. M. Mackwood, of Colombo, Captain H. Wade-Dalton, 57th Regt., and Captain F. J. Hutchison, for having most kindly placed their collections in his hands for examination, and contributing many rare and unique specimens for description and delineation, as well as for the numerous interesting notes on the habits, localities, &c., of the species herein described. To these gentlemen, and especially to Dr. Thwaites and Sir Wm. H. Gregory, grateful thanks are due from all students of Entomology.

F. MOORE.

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# THE LEPIDOPTERA OF CEYLON.

## Section RHOPALOCERA.

### Family NYMPHALIDÆ.

Front legs imperfect in both sexes; in the female wanting the tarsal claws; in the male the fore tarsi quite rudimentary, consisting of one or two spineless joints. Pupa suspended freely by the tail.

#### Subfamily EUPLCÆINÆ.\*

*Danainæ*, auctorum.

Forewing with the submedian vein double at its origin.

Larva smooth, with fleshy processes.

“The number of Ceylonese species in this Subfamily is not very considerable, though some of them, especially of the genus *Euplœa*, are extremely numerous in individuals. These are, moreover, strikingly interesting on account of their mode of flight and gregarious habit. On a fine sunny day, when calm or nearly so, amazing numbers of one or more species of *Euplœa* may often be observed wending their way in one direction, as if floating upon the air a few feet from the ground, with an apparently sluggish movement of their wings, though really making rapid progress. Resembling an army in scattered open column, they move on instinctively, regularly and simultaneously, as if animated by a true migratory impulse. They naturally suggest a most interesting inquiry as to whence these immense numbers come and whither they are tending, whether their course is a straight-ahead one, or is following a horizontal circular direction of greater or less diameter. These insects when thus moving in company show an unwillingness to be diverted from their course, and when attracted by a favourite plant in flower, it is only for a few minutes that they remain upon it, and after regaling themselves, soon start off to resume their journey with their fellow-travellers, moving again amongst them as before and bound

\* Linnaeus' name of *Danaus* having been adopted in a generic sense by Esper in 1777 (*Die Schmett.* i. p. 53), and also by Panzer in 1801 (*Faun. Ins. Germ. Hefte 73-84*, p. 11), for species of *Pierinæ*, its use—as applied by Latreille in 1809, cannot be retained in this group of butterflies. The subfamily name “*Danainæ*” consequently becomes obsolete, and, as no other is available, *Euplœinæ* is here proposed.

for the same destination. It is curious to observe that butterflies of a totally different kind, when they happen to come within the range of one of these moving columns, are, for a period, carried away apparently by the same impulse and fly in company with it, but are soon seen to be moving off independently as at first. Reverting to the *Euplaeas*, these insects, when stopping for a short time to refresh themselves upon an attractive flower, are with little difficulty captured by the hand; and then simulate death for a few seconds, soon flying away. They are so tenacious of life as to be able to bear considerable pressure between the finger and thumb without being killed; they exert at the time a peculiar long silky anal appendage of a bright yellow colour, which is almost immediately retracted into its sheath. Birds and other insectivorous animals do not appear to be partial to these butterflies as food; they are probably unpalatable to them owing to their possessing a peculiar odour.

“The larvæ I have most frequently found feeding upon leaves of the species of Fig and Dogbane. The suspended chrysalids are brilliantly metallic in colouring. *Hestia Jasonia*, the finest Ceylonese species of the group, affects the glades of woods and is notable for its graceful flight, rising and descending almost like a gossamer in the air, and well deserving the name of “the Sylph,” which is commonly given to it.” (Note by Dr. Thwaites.)

#### Genus NECTARIA.

*Nectaria*, Dalmann, in Billb. Enum. Ius. p. 76 (1820).

*Hestia* (part), Hübner, Verz. bek. Schmett. p. 15 (1816). Doubleday.

Wings semidiaphanous, large: forewing lengthened, triangular, costa slightly arched, apex quite convex, exterior margin very oblique, waved, posterior margin short, slightly concave in middle; costal vein extending to half its length, subcostal with first branch emitted at some distance before end of the cell and anastomosed to costal near its end, second branch from near end of the cell, third and fourth at equal distances beyond, the fourth terminating above, and the fifth below the apex; cell long; upper discocellular inwardly oblique and slightly angled near subcostal, lower outwardly convex, first radial from angle of the upper and second from near upper end of lower discocellular; three median branches wide apart, submedian very recurved: hindwing lengthened, oval, costal margin curved, apex convex and more or less prolonged, exterior margin slightly waved, anal angle convex; costal vein short, with a basal forked spur; subcostal branches wide apart, first very short; discocellulars bent outward at their middle, the radial emitted from the angle; median branches wide apart, submedian and internal vein slightly recurved. Body long, slender; palpi porrect, pilose above and beneath, tip pointed; legs long, slender; antennæ slender.

## NECTARIA JASONIA (PLATE 1, FIG. 1).

*Hestia Jasonia*, Westwood, Cabinet of Oriental Entomology, p. 87, pl. 42, fig. 1 (1848).

Male and female. Semihyaline, fuliginous-white, veins black: upperside, forewing with a black basal costal border, an oblique irregular broad band across middle of the cell, a short streak on middle of the costa, a streak through the discocellular veins, a large spot between the base of the two lower median veins, a crutch-shaped mark extending to the base above the submedian vein, a discal series of seven angulated-oval spots, a submarginal series of duplex spots terminating in a thickened streak at end of each vein, and a marginal row of spots: hindwing with a black round spot in middle of the cell, two small spots below it, a discal series of eight angulated-oval spots two of which are between the costal and subcostal veins, a submarginal series of duplex spots terminating in a thickened streak at end of each vein, and a marginal row of spots. Head and thorax spotted with white, thorax above, palpi and femora beneath streaked with white, abdomen black above, white beneath. Underside of both fore and hindwings marked as above. Some specimens are darker coloured than that above described, being blackish-fuliginous; others, again, have a slight ferruginous tint pervading the wings.

Expanse  $4\frac{3}{4}$  to  $5\frac{3}{4}$  inches.

Larva unknown.

This beautiful butterfly is called by Europeans in Ceylon, according to a statement in Tennent's "Natural History of Ceylon," p. 426, "by the various names of Floater, Spectre, and Silver-paper Fly, as indicative of its graceful flight. It is found only in the deep shade of the damp forest, usually frequenting the vicinity of pools of water and cascades, about which it sails heedless of the spray, the moisture of which may even be beneficial in preserving the elasticity of its thin and delicate wings, that bend and undulate in the act of flight."

"In the forests and especially about waterfalls in the western, central, and southern provinces this butterfly may be found all the year. It has a very slow floating flight, often poising nearly motionless, and is very easily caught" (*Hutchison*).

## Genus RADENA.

Forewing moderately long, triangular; first subcostal branch emitted at about one-third before end of the cell and anastomosed to the costal in the middle, second branch emitted before end of the cell: hindwing broad, somewhat triangular; costal margin long, nearly straight, abdominal margin long; costal vein very convex from the base and then extending straight along edge of the margin; cell broad, long; subcostal and median branches very wide apart. No scent-pouch in male. Antennæ

longer than in allied genera, and with a more gradually thickened and blunt club. Larva (*R. Juventa*) with two pair of fleshy filaments.

*Type*, *R. similis*, *Linn.*

**RADENA EXPROMPTA** (PLATE 2, FIG. 1).

*Danais exprompta*, Butler, Entomologist's Monthly Mag. xi. p. 164 (1874).

Male and female. Upperside blackish-brown, abdominal margin pale brown: forewing with a pale blue narrow discoidal streak and a large sinuous quadrate spot beyond it, a slender costal streak, two streaks below the cell and a slender basal streak on hind margin, two large discal spots, three small upper spots, and five subapical spots the upper three of which are slender, a submarginal regular series of seven small spots, and a marginal row of minute spots: hindwing with pale blue broad basal streaks, large discal spots, an irregular submarginal and marginal row of small spots; no scent-pouch in male. Head, thorax, and palpi white spotted, femora beneath streaked with white; abdomen brown above, paler beneath. Underside: forewing dark brown: hindwing umber-brown; markings as above but paler.

Expanse  $2\frac{3}{4}$  to 3 inches.

“Common in Kottawa forest, but have not seen it elsewhere” (*Wade*).

Genus **TIRUMALA**.

*Danais* (part), Godart, Enc. Méth. ix. p. 10, 172.

Forewing broad, triangular; first branch of subcostal emitted at one-fifth before end of the cell and free from the costal, second branch from end of the cell; hindwing broadly oval, exterior margin very convex; costal vein slightly curved; cell short, anteriorly oblique; second subcostal branch starting from nearer the first, and upper median nearer the middle branch, than in *Radena*. Male with an open scent-pouch between the lower median and submedian veins, the pendant sac of which is prominent on the underside. Antennæ shorter than in *Radena*, the club shorter and tip more pointed. Larva with two pair of fleshy filaments.

*Type*, *T. Limniacæ*, *Cram.*

**TIRUMALA LIMNIACÆ** (PLATE 1, FIG. 3).

*Papilio Limniacæ*, Cramer, Pap. Exot. i. pl. 59, f. D, E (1779).

*Danais Limniacæ*, Godart, Enc. Méth. ix. p. 191.

*Papilio similis* (part), Fabricius, Ent. Syst. iii. p. 58.

*Danais leopardus*, Butler, Proc. Zool. Soc. 1866, p. 52.

Male and female. Upperside brownish-black; forewing with a greenish-white discoidal streak and constricted spot beyond, a lengthened spot and a lower streak beneath the cell which are sometimes confluent and also with the lower discal spot,



three discal spots above which are three or five narrow spots obliquely from the costa, a submarginal irregular series of small spots and a marginal row of smaller spots: hindwing with basal narrow duplex streaks between the veins, a discal series of spots and lower slender streaks, an irregular submarginal and marginal series of small spots. Male with a prominent scent-pouch between the lower median and submedian veins. Head, thorax, and palpi white spotted, a dorsal streak on thorax and femora beneath white; abdomen brown above, ochreous and white beneath. Underside golden-brown, basal area of forewing blackish; markings as above; protruding pouch black edged.

Expanse  $2\frac{3}{4}$  to  $3\frac{3}{4}$  inches.

Larva yellowish-white or yellowish-green, with a pair of long fleshy filaments on third and a short pair on twelfth segment, the filaments black and greenish-white, longitudinally lined with black points; each segment with transverse black bars, one on each thicker which bifurcates near the lateral line, a narrower bar at anterior edge and two also narrower at posterior part of the segment; lateral band yellow; head and feet ringed with black. Pupa green, somewhat cylindrical, constricted below the thorax, with golden scattered dots and beaded ring. Feeds on *Asclepias*.

“Taken at Colombo in open or partially cultivated ground. Most common from October to December, occasionally at other times. Flight slow and heavy; often seen in crowds on low shrubs in company with *T. septentrionis*” (*Hutchison*). Kandy (*Wade*).

#### TIRUMALA SEPTENTRIONIS (PLATE 1, FIG. 2).

*Danaïs septentrionis*, Butler, Entomologist's Monthly Mag. xi. p. 163 (1874).

Male and female. Upperside brownish-black; markings of both wings similar to those in *D. Limniacæ*. but the streaks more slender and the spots smaller. Male with a similar scent-pouch situated in the same position. Discal area of hindwing beneath suffused with black.

Expanse  $2\frac{3}{4}$  to  $3\frac{3}{4}$  inches.

“Taken at Colombo and occasionally near Newera Eliya in open or partially cultivated ground. Most common from October to December. Slow heavy flight. Often found in crowds on low shrubs in company with *T. Limniacæ*” (*Hutchison*).

#### Genus SALATURA.

*Euplæa* (part), Hübner, Verz. bek. Schmett. p. 15.

*Danaïs* (part), Godart, Enc. Méth. ix. p. 10, 172.

Forewing lengthened, triangular, costa slightly arched, apex more or less rounded, exterior margin waved, oblique, slightly convex in the middle, posterior margin slightly recurved, costal vein extending to two-thirds the length, first sub-

costal branch emitted before end of the cell, second at end of the cell, third and fourth at equal distance from its end; cell long; upper discocellular bent inward and angled at its upper and lower end, lower outwardly oblique; radials from angles of upper discocellular; median branches widely separated, submedian slightly recurved; hindwing broadly oval, exterior margin rounded, slightly sinuous, costal vein short, curved upward, and emitting a short basal spur, first subcostal emitted before end of the cell and curving upward before the apex, second slightly bent at end of the cell; discocellulars very oblique, upper shortest and slightly concave, radial from their middle; second median branch near end of the cell, lower bent near its base, submedian nearly straight, internal recurved. Male with an open scent-pouch between lower median and submedian veins. Body long, palpi pilose, middle and hind legs slender.

Larva with three pair of fleshy filaments.

*Type*, S. Genutia, Cram.

**SALATURA GENUTIA** (PLATE 4, FIG. 2, 2a).

*Papilio Genutia*, Cramer, Pap. Exot. iii. pl. 206, f. C, D (1780).

*Danais Genutia*, Distaut, Trans. Ent. Soc. Lond. 1877, p. 93.

*Papilio Plexippus* (part), Fabricius, Spec. Ins. p. 55.

*Danais Plexippus* (part), Godart, Enc. Méth. ix. p. 186.

Male and female. Upperside dark fuliginous-brown: forewing with a fulvous-red broad discoidal streak and discal spaces between the median and submedian veins to the base of hind margin, a series of small white costal spots beyond the cell, a subapical transverse series of large spots, a short submarginal row, and a marginal row of small spots: hindwing with fulvous-red between all the veins from base to the submargin, a submarginal and marginal row of small white spots. Male with a small scent-pouch situated near the lower median vein between it and the submedian vein. Head, thorax, and palpi white spotted, thorax above and femora beneath streaked with white; abdomen red with lateral white spots. Underside marked as above; forewing with a dusky ferruginous patch beyond the subapical white spots; hindwing with paler fulvous markings and white borders to all the veins.

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

Larva cylindrical, black, with a pair of black fleshy filaments on third, sixth, and twelfth segments, the first pair longest; each segment with one interrupted white streak along its anterior edge succeeded by three white transverse spots, followed by two transversely elongated yellow spots, the posterior edge of the segment having two parallel interrupted white streaks; lateral band yellow crossed at the middle of each segment by a black line; abdominal line black; head and feet black ringed with white.

Pupa somewhat cylindrical, posterior end hemispherical, anterior ending in two slight prominences; bright green, with a dorsal ring of silvery dots, and a few scattered golden dots.

**SALATURA CHRYSIPPUS** (PLATE 3, FIG. 1a, b).

*Papilio chrysippus*, Linnæus, Syst. Nat. i. 2, p. 767 (1767); Cramer, Pap. Exot. ii. pl. 118, f. B, C.  
*Danais chrysippus*, Godart, Enc. Méth. ix. p. 187; Moore, Catal. Lep. Mus. E. I. C. i. pl. 4, f. 7, 7a.

Male and female. Upperside: forewing with the costal margin and apical area to posterior angle brownish-black, the basal area including the veins fulvous-red, two very small white spots on middle of the costa, one beyond the cell, one above the disc, two on the submargin, an incomplete marginal row and two or three before the apex, and an oblique subapical series of larger spots: hindwing with a black narrow sinuous marginal band and row of very small white spots, the inner area fulvous-red, three small black spots at end of the cell. Male with a black quadrate scent-pouch situated close to the lower median vein between it and the submedian. Head, thorax, and palpi white spotted, thorax above and femora beneath white streaked; abdomen red above, white beneath. Underside as above, the fulvous colour being paler and brighter, the white spots more prominent, those at end of the cell white bordered, and the pouch mark in male white centred.

Expanse  $2\frac{3}{4}$  to 3 inches.

Larva cylindrical, with a pair of black fleshy filaments on third, sixth, and twelfth segments, the filaments crimson at the base; pale bluish-grey with transverse dorsal black streaks and chrome-yellow bands; lateral band chrome-yellow; head and legs black striped with blue-grey. Pupa somewhat cylindrical, semitransparent, pinkish-white or green, a raised golden spot on each eye, and a few golden spots scattered on the surface, a black tubercular ridge and a dorsal row of golden dots along fourth segment of abdomen. Feeds on *Calotropis gigantea* and *Asclepias curasavica*.

Genus **PARANTICA**.

Forewing long, narrow, hind margin lengthened; first subcostal branch emitted at one-fourth before end of the cell and touching the costal near its end, second emitted immediately before end of the cell; cell long, narrow: hindwing somewhat elongated, exterior margin very convex, abdominal margin short, costal vein arched from base and thence extending along edge of the margin; cell very long and narrow. Male with two spatular-shaped scent-pouches, one (the largest) being on the lower median vein, the other (about one-fourth its size) on the submedian vein, near their end, each being visible on the underside by the slender swelling of these veins at that

part. Antennæ with lengthened slender tip. Larva with two pair of fleshy filaments.

*Type, P. Aglea, Cram.*

**PARANTICA CEYLONICA** (PLATE 2, FIG. 2, 2a).

*Danaïs Ceylonica*, Felder, Verh. Zool. Bot. Ges. xii. p. 479 (1862).

Male and female. Upperside dark fuliginous-brown: forewing with a bluish-white narrow discoidal streak above which are two parallel contiguous slender lines, two lengthened streaks below the cell, five discal spots, two upper slender streaks and three costal spots, a submarginal row of small mostly cordate spots, and a marginal row of more or less indistinct smaller spots; hindwing with broad bluish-white basal streaks, regular series of discal quadrate spots, the two lower of which have a contiguous or continuous outer spot, an irregular submarginal and marginal row of small spots; two scent-pouches in male, a large one on lower median vein and a small one on submedian vein. Head, thorax, and palpi white spotted, a dorsal streak on thorax and femora beneath white; abdomen brown above, white beneath. Underside brown, markings clearer: forewing with the discoidal streaks more distinct; above the cell is a slender line, and the upper discal spot and the streak are concave externally: hindwing with a black pouch-area in male.

Expanse 3 to 3¼ inches.

Larva cylindrical, reddish-purple, two black fleshy filaments on third and two on twelfth segment; two dorsal rows of round chrome-yellow spots, and a lateral row of broken chrome-yellow spots, with intervening white dots on each segment; head and legs black, white spotted. Pupa green, much constricted below the thorax, with blue and golden scattered dots and black raised dots on upper segments. Feeds on *Cryptolepis*, &c.

“ Found everywhere all the year in open or partially cultivated places, but not often in forest. Flight slow and heavy. Perhaps the commonest insect in Ceylon ” (*Hutchison*).

Genus **CHITTIRA**.

Forewing somewhat short and broad; costal margin much arched, hind margin long: hindwing broadly oval, very convex externally. Venation similar to *Caduga*. Male with two scent-pouches, one spatular shaped on the submedian, accompanied by the dilated or swollen vein, the other being the internal vein dilated but without any adjacent spatular patch. Antennæ with a tolerably thick club.

*Type, C. fumata, Butler.*

**CHITTIRA FUMATA** (PLATE 4, FIG. 1, 1a).*Danaïs fumata*, Butler, Proc. Zool. Soc. 1866, p. 53.*Danaïs Taprobana*, Felder, Reise Novara, Lep. ii. p. 349, pl. 42, f. 4 (1867).

Male and female. Upperside rich brown, palest on the abdominal margin: forewing with a greenish-white narrow discoidal streak, a broad lengthened triangular streak below the cell, three discal spots above it, the upper one very minute, a submarginal oblique series of five spots, the second, third, and fourth being elongated, and a marginal row of six small spots: hindwing with a broad discoidal streak, a small streak and two minute spots beyond it, a submarginal apical series of three small spots, three in the male, and five in the female, the female having also a lower marginal row of minute spots, two linear-shaped scent-pouches in the male, one situated on the lower submedian vein, the other on the internal vein. Thorax, head, and palpi, spotted with white, femora beneath streaked with white; abdomen brown above, grey beneath. Underside paler brown, markings as above, exterior border of hindwing grey speckled, pouch area in male and discal area in both sexes darker brown.

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

“Found all the year; scarce in February and March. Hills 3000 to 6000 feet, in forest and often in coffee-plantations. Common at Newera Eliya and several miles round. Flight slow and heavy” (*Hutchison*).

Genus **MACROPLÆA**.*Macroplæa*, Butler, Journal of the Linn. Soc. Zool. xiv. p. 292 (1878).

Wings very large and broad: forewing in male elongated, quadrate, apex acuminate, exterior margin oblique, convex at the angle, posterior margin very convex in the middle and extremely oblique thence to the base: hindwing triangular, with a large oval pale upper-discoidal patch, the costa long, apex somewhat angular, exterior margin regularly convex.

**MACROPLÆA ELISA** (PLATE 5, FIG. 2, 2a).*Euplæa Elisa*, Butler, Proc. Zool. Soc. 1866, p. 270.*Macroplæa Elisa*, Butler, Journ. Linn. Soc. Zool. xiv. p. 293 (1878).

Male and female. Upperside golden-brown. Male: forewing dusky-brown along posterior border; a small brownish-white spot at lower end of the cell, a linear discal series of three spots, a recurved submarginal and marginal row of spots: hindwing dusky-brown on exterior border, anterior border ochreous-white, a large ochreous space within middle of the cell, five small discal ochreous-white spots, an anterior submarginal and marginal row of small white spots. Female: upperside

uniformly paler, all the spots on both wings are ochreous and less prominent: underside duller coloured, the spots on both wings white and more prominent, the discal series extending from the costal to the abdominal border, and the two marginal rows extending to anal angle; posterior border of forewing broadly ochreous-white. Head, front of thorax, and palpi black, spotted with white, legs black, thorax above dark brown with dorsal white streak, abdomen dark brown.

Expanse, ♂  $4\frac{1}{4}$ , ♀ 4 inches.

Larva \* purple-brown, with two black-tipped red fleshy filaments on second, two on third, and two on twelfth segments, each segment with transverse black streaks; lateral line purple, head and legs black. Pupa thick, broad, purple-grey, fasciated with golden-yellow, abdominal segments black beaded. Feeds on — ?

“Taken on low ground at Colombo among hedges round native gardens at any time, but not very common. Of slow, heavy flight; settles on leaves and easily caught” (*Hutchison*).

“Commonly found at Galle among cocoanut-trees and low bushes” (*Wade*).

#### Genus ISAMIA.

Wings large, broad: forewing in male elongated, somewhat quadrate, apex slightly acuminate, exterior margin oblique, waved, posterior margin convex, with a large sericeous streak between the lower median and submedian veins: hindwing triangular, costa long, convex, exterior margin convex, waved, a moderate-sized pale upper-discoidal patch.

*Type*, *I. superba*, *Herbst*.

#### ISAMIA SINHALA (PLATE 5, FIG. 1 ♂).

*Euplœa Sinhala*, Moore, *Annals and Mag. of Nat. Hist.* 1877, p. 45.

Male. Upperside dark velvety olive-brown, external margins paler: forewing with a short broad oval sericeous streak between the lower median and submedian veins, a submarginal row of small ochreous-white spots and marginal lower row of minute spots: hindwing with a broad flesh-coloured discoidal patch; costal border broadly cinereous, a submarginal series of oval ochreous-white spots and marginal series of small round spots. Underside paler olive-brown throughout: forewing with hind margin broadly cinereous, the sexual mark dusky; a curved discal series of whitish spots near the cell; both wings with a submarginal and marginal series of spots as above. Body black, thorax, head, palpi and forelegs white spotted.

\* Figured on Plate iv. *Catal. Lep. Mus. E.I.C.* i. from drawings by E. L. Layard, as the larva of *E. Prothœ*.

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

Taken at Galle and Kandy by Captain Wado.

Genus EUPLEA.

*Euplæa* (part), Fabricius, Ill. Mag. vi. p. 280 (1807).

*Euplæa*, Boisd., Doubleday, Butler, Felder.

*Crastia* (part), Hübner, Verz. bek. Schmett. p. 16 (1816).

Forewing elongated, triangular; costa slightly arched, apex rounded, exterior margin oblique, slightly waved and concave in the middle, posterior margin almost straight in both sexes; male with a sericeous streak between the lower median and submedian veins; costal vein extending to nearly two-thirds the length; first subcostal branch emitted before end of the cell, second from extreme end, third about one-third beyond, fourth and fifth at one-third from apex; upper discocellular shortest, inwardly oblique, angled outward close to the subcostal and emitting a short spur from its lower end within the cell, lower discocellular outwardly oblique and angled outward close to its upper end, the radials from their upper angles; median branches from angles wide apart, submedian slightly recurved, looped at its base: hindwing short, bluntly oval, costa slightly arched in middle; costal vein short, curved near the base, with a short basal forked spur; first subcostal branch emitted from angle before end of the cell; discocellulars outwardly oblique, upper shortest, concave, lower slightly convex, the radial from their middle; median branches from angles widely apart; submedian straight, internal curved at its base. Body long, slender; antennæ slender; legs squamous, tibia and tarsi spinous beneath; palpi short, pilose.

**EUPLEA ASELA** (PLATE 6, FIG. 2, 2a).

*Euplæa Asela*, Moore, Annals of Nat. Hist. 1877, p. 45.

Male and female. Upperside dark velvety olive-brown, broadly paler externally: forewing with a submarginal and less distinct lower marginal row of small brownish-white spots, the former series curving to the costa before the apex; male with a single short slender sericeous streak between the lower median and submedian veins: hindwing with a submarginal row of brownish-white oval spots, and a marginal row of smaller round spots. Underside paler, both rows of marginal spots clearer; both wings with a small spot at end of the cell, and a contiguous discal curved series of spots. Body blackish, thorax, head, palpi, front legs, and abdomen beneath white spotted, middle and hind legs beneath white streaked.

Expanse  $3\frac{1}{4}$  to  $3\frac{5}{8}$  inches.

Larva cylindrical, purple-white, or dove-colour, with a pair of curled red fleshy filaments on three of the anterior segments and a pair on the twelfth segment; each

segment transversely barred with narrow white lines, lateral band pinkish-white with black and red dots; abdominal line black; head and legs black, streaked with white. Pupa golden-yellow, constricted below the thorax, streaked and banded with brown, dorsal segments black spotted. Feeds on *Nerium oleander*, &c.

"Found everywhere, in the plains and up to 6000 feet, in forest or open ground. At Colombo it occurs from October to January; elsewhere all the year. Flight slow, heavy. Often comes into the house in numbers, sometimes settling on one's clothes" (*Hutchison*).

#### EUPLÆA FRAUENFELDI.

*Euplæa Frauenfeldi*, Felder, Verh. Zool. Bot. Gesc. 1862, p. 479, ♂; Reise Novara Lep. ii. pl. 41, f. 4.

*Euplæa Esperi*, Feld. Verh. Zool. Bot. Gesc. 1862, p. 482 ♀.

Male. Upperside blackish purple-brown: forewing blue glossed, a very small white costal spot above end of the cell, a spot between first upper and second median veins, a submarginal series of spots curving from apex, and a lower marginal series of smaller spots, a slender short sericeous streak below the lower median vein: hindwing unmarked, except that it indistinctly shows a submarginal and marginal series of pale brown spots. Underside dark olive-brown: forewing with a bluish costal spot, a spot at lower end of the cell, a spot between the upper and second median veins, and a larger elongated white spot below it, the sexual streak and posterior margin being brownish-white, submarginal and marginal spots as above: hindwing with a minute bluish spot at end of the cell and a contiguous discal series of spots, a marginal series of small white spots and a submarginal anal series of three or four spots. Body black, head, thorax, palpi, and abdomen beneath white spotted, legs black.

Expanse 4 inches.

Taken at Trincomalee, on the N.E. side of the island.

#### EUPLÆA SCHERZERI.

*Euplæa Scherzeri*, Felder, Verh. Zool. Bot. Gesc. 1862, p. 479; Reise Novara Lep. ii. p. 335.

Male. Upperside purplish olive-brown, darkest on basal area: forewing with a minute white subapical spot, and a lengthened sericeous streak between lower median and submedian veins: hindwing with a subapical series of three small very indistinct pale brown spots. Underside paler: forewing with a bluish-white small costal spot, one at lower end of the cell, two beyond, and an elongated lower spot, three or four submarginal spots below the apex: hindwing with a small bluish-white spot at lower end of the cell, a contiguous discal series, three upper submarginal spots and a marginal lower series of spots. Body black, thorax, head, palpi, and abdomen beneath white spotted, legs black.

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



## Genus NARMADA.

Forewing elongated, triangular, costa slightly arched, apex somewhat acute, exterior margin oblique, posterior margin in male slightly convex, with two sericeous streaks between the median and submedian veins: hindwing triangular.

*Type*, *N. coreoides*, *Moore*.

**NARMADA MONTANA** (PLATE 6, FIG. 1 ♂).

*Euplæa montana*, Felder, *Reise Novara Lep.* ii. p. 330 (1867), ♂.

*Euplæa Lankana*, Moore, *Annals and Mag. Nat. Hist.* 1877, p. 44, ♂.

*Stictoplæa Lankana*, Butler, *Journ. Linn. Soc. Zool.* xiv. p. 302.

Male and female. Upperside dark velvety olive-brown, paler externally: forewing with a submarginal and marginal row of very small indistinct ochraceous-white spots; male with two elongated sericeous streaks between the lower median and submedian veins: hindwing with a submarginal and marginal row of ochraceous-white spots, the former oval from the anal angle and duplex anteriorly, the latter smaller and round. Underside paler, marginal white spots as above, those on forewing more prominent, both wings with a small white spot at end of the cell, and a contiguous discal curved series beyond. Body blackish, thorax, head, palpi, and abdomen beneath white spotted, forelegs white streaked beneath.

Expanse 3 to  $3\frac{5}{8}$  inches.

Captured at Rambodde, Galle, and Kandy.

## Subfamily SATYRINÆ.

Palpi generally compressed and fringed with long hair scales.

Larva without spines, generally pubescent, head more or less bifid, tail bifid.

“The butterflies of this subfamily are rather inactive, and fly near the ground amongst grass and close to the margins of woods. Their movements, however, are more lively in the early morning and evening during their amatory gambols. The males of some of the species have a pair of curious pencils of hair which each lie within a fold of the upper wing, and which are capable of being spread out radiately during the insect's flight.” (*Note by Dr. Thwaites.*)

## Genus MELANITIS.

*Melanitis*, Fabricius, Illiger's Mag. vi. p. 282 (1807).

*Hipio*, Hübner, Verz. bek. Schmett. p. 56 (1816).

*Cyllo*, Boisduval, Voy. Astr. Lep. p. 140 (1832).

Wings short, broad; forewing triangular; costa very convex, exterior margin more or less angled below the apex, oblique and waved hindward; posterior margin nearly straight; first and second subcostal branches emitted before end of the cell, third at half distance beyond, fourth and fifth at one-third from apex; upper discocellular twice angled near subcostal, lower obliquely concave; radials from the angles; median branches wide apart; submedian recurved: hindwing, costa slightly arched, exterior margin sinuous and produced at end of upper median into a blunt angle; abdominal margin long; costal vein curved, extending to apex, with a short basal spur; subcostal bent close to costal near its base; cell broad; discocellulars bent outward at their middle; radial from the angle; upper median from end of the cell, second from near its end; submedian extending to posterior angle; internal short. Body short; palpi porrect, pilose beneath, legs slender, squamose; antennæ slender.

**MELANITIS ISMENE** (PLATE 10, FIG. 2 *a, b*).

*Papilio Ismene*, Cramer, Pap. Exot. i. pl. 26, f. A, B (1775).

Male and female. Upperside dark olive-brown, exterior border slightly grey speckled: forewing with apical area dark maroon-brown, a subapical large black spot bordered above and inwardly by fulvous-red and centred with two small prominent white spots: hindwing with four submarginal more or less obsolete very small black-bordered white spots. Underside very variable, being either grey, ochreous, ferruginous, maroon, or dusky brown, covered with numerous short more or less confluent black strigæ: forewing with two subbasal and a discal transverse darker fascia, the outer broadest and most prominent, two subapical and two smaller apical white spots: hindwing with a subbasal, discal, and a submarginal transverse darker fascia, the discal being most prominent, a submarginal row of small white spots. Female brighter coloured on the upper and underside, the strigæ not so dense, and the transverse fasciæ less prominent. Body brown, palpi greyish, legs brown above ochreous-grey beneath.

Expanse  $2\frac{3}{4}$  to 3 inches.

Larva elongated, thickened in the middle, pubescent, head large, surmounted by two short pubescent red processes, last segment also with two processes; pale green with longitudinal rows of whitish dots; dorsal and lateral line darker green; head

bluish, face striped with white and black. Pupa green, cylindrical, head and thorax obliquely flattened. Feeds on *Gramineæ*.

Found in the same districts as *M. Leda*.

**MELANITIS LEDA** (PLATE 10, FIG. 1 *a, b*).

*Papilio Leda*, Linnaeus, Syst. Nat. i. 2, p. 773 (1767); Drury, Exot. Ins. i. pl. 15, f. 5, 6 (1773);  
Cramer, Pap. Exot. iii. pl. 196, f. C, D.

Male and female. Upperside brown: forewing with a subapical blackish spot centred by two small white spots and slightly bordered inwardly with fulvous: hindwing with two subanal black spots centred with white, the outer spot minute. Underside greyish-ochreous, uniformly covered with delicate dark strigæ: forewing with three very indistinct slender transverse fasciæ, and four small apical marginal ocelli: hindwing with an indistinct slender discal fascia and six submarginal distinct ocelli. Female. Upperside: both the subapical spots and the subanal are larger, the latter series generally four in number. Underside as in male, the ocelli more prominent. Body and legs brown.

Expanse, ♂ 2½, ♀ 3 inches.

“Found at all times in the western and central provinces, in grassy places; both in the plains and hills up to 2000 feet. Flies at dawn and dusk of the evening, rarely by day. Settles down in grass” (*Hutchison*).

**MELANITIS TAMBRA** (PLATE 9, FIG. 2 *a, b, c*).

Male. Upperside dark dusky olive-brown: forewing ferruginous-brown at the apex, with a subapical small white spot (in some an indistinct lower spot), and an indistinct black contiguous spot: hindwing without markings. Underside dusky-ferruginous or purple-ferruginous, veins speckled with pale ochreous, basal area densely covered with dark purple-ferruginous strigæ forming three confluent irregular fasciæ on the forewing, but are more uniformly disposed on the hindwing which has a narrow discal fascia only: forewing with a pale triangular costal space before the apex and four small ochreous brown-ringed spots, the penultimate spot with a contiguous inner white spot, posterior margin broadly dull sap-brown: hindwing with a pale ochreous space and a contiguous dusky spot within end of the cell; disc transversely washed with greyish-purple, a submarginal row of small ochreous brown-ringed spots. Female. Upperside ferruginous olive-brown: forewing with a subapical dusky-black patch extending paler across end of the cell to costal vein, and suffusedly bordered externally and across the apex with paler ferruginous, and centred with two white spots, the lowest spot small or obsolete: hindwing with three

or four lower submarginal small white spots. Underside ferruginous; strigæ, transverse fasciæ, and outer border dark ferruginous, subapical spots on forewing and submarginal spots on hindwing with double rings and whitish centre, the penultimate subapical spot with a contiguous inner larger whitish spot. Body brown, legs ferruginous.

Expanse, ♂  $2\frac{1}{2}$ , ♀  $2\frac{3}{4}$  inches.

Larva elongated, thickened in the middle; head with two long pubescent red processes; last segment also with two processes; green with longitudinal and transverse darker lines; face striped with red. Pupa green, head and thorax flattened.

“Found in the western and central provinces. Plains and up to 3000 feet. June to September. Habits same as *M. Leda*” (*Hutchison*).

#### Genus LETHE.

*Lethe*, Hübner, Verz. bek. Schmett. p. 56 (1816).

*Debis*, Doubleday and Westwood, Gen. Diurnal Lep. p. 358 (1851).

Wings short; broad: forewings triangular, costa arched, apex convex, exterior margin oblique, waved, posterior margin long, straight; first and second subcostal branches emitted close to end of the cell, third at one-half beyond, fourth and fifth at one-third from the apex; upper discocellular shortest, bent outward and inward close to subcostal, lower slender recurved outward; upper radial from outward angle, lower from their middle angle; cell broad; median branches equidistant and wide apart; submedian nearly straight: hindwing, costa short, convex at base, exterior margin sinuous, prolonged into a blunt tail at end of upper median, abdominal margin long; costal vein curved and extending to apex, with a short curved basal spur; subcostal bent close to costal near its base, first branch curved towards its end; discocellulars oblique, concave, lower slender; radial from their middle; cell broad; two upper median branches from end of the cell; submedian extending to posterior angle; internal vein short. Body short, thorax robust; palpi porrect, slender, pilose beneath; legs rather short, squamose; antennæ slender.

#### LETHE NEELGHERRIENSIS (PLATE 7, FIG. 1, 1a).

*Cyllo Neelgherriensis*, Guérin, Delessert's Voyage dans l'Inde, pt. 2, p. 74, pl. 21, f. 1, 1a (1843).

*Debis Neelgherriensis*, Hewitson, Exot. Butt. iii. p. 75, *Deb.* pl. 2, f. 6, ♀.

Upperside dull dark olive-brown. Male: forewing with two apical small ochreous-white spots, a subapical larger spot, and a less distinct spot between the second and third median veins, between these the ocelli of the underside are indistinctly visible, a marginal double indistinct dusky lunular line: hindwing with two

apical not very prominent black pale-bordered spots, and a marginal dusky pale-bordered double lunular line. Underside paler: forewing with three transverse discoidal wavy purple-grey bands, the middle band crossing the wing, an oblique subapical ochreous-white band, an upper submarginal row of six purple-bordered ocelli, the first and second slender and incompletely formed, a marginal purple-bordered line: hindwing with three transverse basal purple-grey wavy bands, a brown band outwardly angled between the subcostal and median vein, a submarginal series of six ocelli in three purple-bordered encircled divisions, the upper or single ocellus large with a distinct white pupil and minute dots, the next of three irregular shaped ocelli minutely dotted with white, the fifth of regular form, the sixth with double black centre, and both white dotted, a marginal purple-bordered lunular line. Female. Upperside: forewing with two apical prominent spots and three oblique transverse discal spots: hindwing with apical spots larger and more prominent. Underside as in male, except that on the forewing the oblique subapical band is more irregular and extends to posterior angle, and the lower ocellus is absent. Cilia alternated with white. Body dark brown, palpi at sides, and legs beneath white streaked.

Expanse, ♂  $2\frac{1}{4}$ , ♀  $2\frac{1}{2}$  inches.

“Found in the neighbourhood of coffee-plantations south of Newera Eliya, at about 3000 feet elevation. It appeared plentiful, except from January to March” (*Hutchison*).

Taken also at Kandy and Dickoya by Captain Wade.

**LETHE DRYPETES** (PLATE 8, FIG. 1 a, b).

*Debis Drypetes*, Hewitson, *Exotic Butterflies*, iii. *Deb.* pl. 2, f. 11, 12 (1863), ♀.

*Debis embolima*, Butler, *Entom. Monthly Mag.* iii. p. 77 (1866), ♂.

Male. Upperside dark olive-brown: forewing without markings: hindwing with three submarginal very indistinct small black spots. Underside dark brown; both wings with a transverse subbasal wavy dark-bordered purple line: forewing with an oblique transverse discal purple band, a submarginal curved row of five small purple-bordered ocelli, the upper one indistinct, a marginal narrow pale wavy line: hindwing with a transverse discal medially-angled purple-bordered dark brown line, a submarginal row of five purple-bordered ocelli, the first or upper one and the fifth only regularly formed, the others oval and numerous white speckled, a marginal distinct lunular purple line. Cilia brownish-ochreous. Female. Upperside ferruginous olive-brown, externally dusky-brown: forewing with two prominent subapical ochreous-white spots, an oblique transverse discal macular band extending to lower median vein, submarginal small indistinct black spots: hindwing with four

upper submarginal ochreous-yellow outer bordered black spots, the second spot large and extending to the pale-bordered marginal line, the first being a minute apical dot with broad yellow outer border. Underside paler, markings as in male, except that on the forewing the oblique discal band is purplish-white, the lower submarginal ocellus is absent, and the ocelli on both wings are bordered with purplish-white. Body dark olive-brown; palpi at sides, and legs beneath grey streaked.

Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{6}{10}$  inches.

“Taken in the hills of the central province at 3000 feet and slightly above, at all times. Very local; found in several spots of limited extent” (*Hutchison*).

**LETHE DARETIS** (PLATE 7, FIG. 2 a, b).

*Debis Daretis*, Hewitson, Exotic Butterflies, iii. p. 75, *Deb.* pl. 2, f. 7, 8 (1863), ♀.

Male. Upperside dark olive-brown: forewing with a very small ochreous costal spot above end of the cell, and two small less distinct spots before the apex: hindwing with a submarginal row of five small indistinct black slightly pale-bordered spots. Underside dark brown, with a medial and subbasal transverse sinuous purple-grey band on both wings: forewing with an oblique discal transverse pale ochreous irregular lunular band, five small black purple-bordered submarginal ocelli, and marginal lunular purple line: hindwing with six distinct well-formed purple-bordered submarginal ocelli, and marginal lunular purple line. Female. Upperside ferruginous olive-brown: forewing with two prominent ochreous-yellow subapical spots, transverse discal macular band extending to the submedian vein, and four or five small indistinct black submarginal spots: hindwing with a submarginal row of five well-defined oval ochreous-yellow bordered black spots, an upper marginal narrow lunular yellow line. Underside as in male, markings more prominent, oblique discal band on forewing broader. Cilia alternated with white. Body dark brown, palpi at sides and legs beneath grey streaked.

Expanse, ♂  $2\frac{1}{10}$ , ♀  $2\frac{4}{10}$  inches.

“Found all the year round, but most plentiful in the spring in the hills of the central province at about 5000 to 6000 feet elevation, in grass-land or close to forests. Rather shy; flight rapid, often settling down in grass or on open road” (*Hutchison*).

**Genus HANIPHA.**

Wings similar in form and venation to *Lethe*, but the forewing comparatively shorter and of less breadth, and the hindwing longer. Male with a conspicuous lengthened tuft of short hairs transversely covering a sericeous patch of compact

raised scales between the lower median and submedian veins; lower median vein much curved.

*Type*, H. Sihala.

**HANIPHA SIHALA** (PLATE 8, FIG. 2 a, b).

*Lethe Sihala*, Moore, Proc. Zool. Soc. 1872, p. 555.

Male. Upperside dark olive-brown: forewing with two very indistinct or obsolete dusky-white apical spots, and a longitudinal tuft of long blackish-brown hairs between lower median and submedian vein: hindwing with a submarginal series of indistinct black spots. Underside, basal area dark brown, apical area pale brown, being divided on the forewing by an oblique discal chalybeate-purple streak, and on the hindwing by a discal medially-angled dark brown line; a submarginal series of four very indistinct ocelli on forewing formed by a central black dot and two chalybeate rings; a submarginal series of six larger ocelli on hindwing formed by a black spot with a single white central dot and fulvous outer ring, each being encircled by purple border; both wings with a dark brown purple-bordered subbasal transverse line. Female. Upperside brown, basal area paler: forewing with a broad oblique discal white band and a terminal spot near posterior angle; a small white apical spot and two indistinct streaks below it; an indistinct series of blackish submarginal spots: hindwing with a submarginal series of five black spots, the middle spot very small, the upper spots with broad irregular whitish-brown borders, the two lower with pale brown rings and a white central dot. Underside brown at base, outer borders paler; forewing with oblique band as above and five submarginal spots: hindwing as in male: subbasal transverse line purple-bordered, and the irregular medial line with whitish-brown outer border.

Expanse, ♂  $2\frac{1}{4}$ , ♀  $2\frac{1}{2}$  inches.

“Rare and very local. Observed only in two places in forest land near Newera Eliya. Habits similar to *Lethe Drypetes*” (*Hutchison*).

The female of this species is much like *L. Dynsate*, but it differs in having a narrower oblique discal band and more defined subapical white and black spots on the forewing, and the hindwing has paler interspaces between the outer series of spots. The underside also differs in the forewing having five submarginal ringlet spots instead of four, and the hindwing has all the spots smaller, the costal spot and the second anal being one-third less in size.

**HANIPHA DYNSTATE** (PLATE 9, FIG. 1, 1a ♀).

*Debis Dynstate*, Hewitson, *Exotic Butterflies*, iii. p. 76, *Deb.* pl. 2, f. 9, 10 (1863), ♀.

Female. Upperside ferruginous-brown: forewing dark brown externally, with a broad oblique discal white band and a terminal spot, two very small subapical white spots, the lower black-bordered: hindwing with two large pale-bordered blackish subapical confluent spots, a very small lower spot and two larger uniform oval spots, a dark discal pale-bordered angled band, and outer marginal black lines. Underside chestnut-brown: forewing with broad white oblique transverse band, three upper submarginal brown-ringed black spots bordered with purple, and a less distinct spot above them on the costa: hindwing with pale-bordered angled discal band and six submarginal purple-bordered ocelli the first and fifth largest; both wings with a purple-bordered marginal line and a subbasal purple-bordered brown sinuous line. (Male: unknown.)

Expanse, ♀  $2\frac{1}{2}$  inches.

Genus **CALYSISME**.

*Mycalesis* (part), Hübner; Doubleday.

Wings short, broad: forewing with the costa arched at the base, apex acute in male, less so in female, exterior margin oblique, curved, posterior angle acute; costal, median, and submedian veins swollen at the base; second subcostal branch emitted immediately before end of the cell; discocellulars very concave, radials from two angles in upper near subcostal; cell broad: hindwing oval, costa arched at base, exterior margin convex, dentate, first subcostal branch emitted before end of the cell, discocellulars slightly concave, radial from their middle, two upper median branches from end of the cell. Male with an erectile tuft of fine hairs springing from base of subcostal vein. Body slender, palpi porrect, slender, finely pilose beneath, legs slender, squamose.

**CALYSISME DRUSIA** (PLATE 11, FIG. 3, 3a ♂).

*Papilio Drusia*, Cramer, *Pap. Exot.* i. pl. 84, f. C, D (1775), ♀.

Upperside brown, marginal lines pale ochreous-brown: forewing with a large prominent ocellus: hindwing in female with one or two subanal ocelli. Underside pale ochreous-brown, with a broad discal band crossing both wings and marginal lines greyish-white: forewing with a small upper and large lower ocellus, each separately encircled by a greyish-white line, in some specimens each ocellus has two



additional minute ocelli attached to them one on each side above and below, and encompassed by the greyish line: hindwing with seven ocelli, the second, third, and seventh, the smallest, all encircled by one greyish-white band.

Expanse  $1\frac{5}{8}$  to  $2\frac{1}{2}$  inches.

Taken by Captain Wade in bamboo-thickets in the Kottawah Forest.

**CALYSISME BLASIUS** (PLATE 11, FIG. 2, 2a ♂).

*Papilio Blasius*, Fabricius, Ent. Syst. Suppl. p. 426 (1798).

*Mycalesis Blasius*, Butler, Proc. Zool. Soc. 1867, p. 720, f. 4; *id.* Catal. Fabr. Lep. Brit. Mus. p. 34.

Male and female. Upperside dark brown glossed with olive-brown: forewing with or without a discal small white-pupilled black spot: underside dark uniform vinous-brown, with a narrow purple-white discal band crossing both wings, and two marginal lunular lines: forewing with four ocelli, the three upper ones small, all encircled by a single purple band, some specimens having a small lower fifth ocellus, which is also encompassed within the single purple band: hindwing with seven ocelli, the second and third upper and the seventh the smallest, all being encircled by a single purple band.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

“Found at all times in the western and central provinces; plains and up to 2000 feet, on grassy land. Flight short and slow, along edges of forest-paths and grass land, settling on tufts of grass” (*Hutchison*).

**CALYSISME PERSEUS** (PLATE 12, FIG. 1, 1a ♂).

*Papilio Perseus*, Fabricius, Syst. Ent. p. 488 (1775), ♀.

*Mycalesis Perseus*, Butler, Proc. Zool. Soc. 1867, p. 719, f. 2; *id.* Catal. Fabr. Lep. Brit. Mus. p. 33.

Male and female. Upperside brown: forewing with a transverse discal indistinct darker line, a single ocellus near posterior angle varying in size from a small white-pupilled black spot to a large spot with yellowish outer ring: hindwing with one minute white-pupilled black spot in male and two in female. Underside varying greyish-brown, basal half darkest with indistinct darker striæ; a transverse discal line with pale dentate marks, one on each vein; a subbasal indistinct similar marked line: forewing with four minute white-pupilled black spots, the two medial spots sometimes obsolete: hindwing with a submarginal row of seven small white-pupilled ocelli with yellow outer rings, the second, third, and fourth either minute or

obsolete, the others sometimes blind; a marginal row of minute indistinct black dots.

Expanse, ♂  $1\frac{3}{4}$ , ♀ 2 inches.

**CALYSISME MINEUS** (PLATE 11, FIG. 4, a, b).

*Papilio Mineus*, Linnæus, Syst. Nat. i. 2, p. 768 (1767); Fabricius, Syst. Ent. p. 488.

*Mycalesis Mineus*, Butler, Catal. Fabr. Lep. Brit. Mus. p. 34; Catal. Satyr. B. M. p. 135.

Male and female. Upperside brown, transverse discal band of underside slightly visible; marginal and lunular submarginal line yellowish: forewing with a medium-sized ocellus distinctly pupilled with white and yellow ringed: hindwing with a minute subanal ocellus. Underside greyish or fuliginous-brown, both wings with a prominent broad yellowish-white transverse discal band, and yellowish outer marginal lines: forewing with two ocelli, the lowest large, each encircled by a separate pale purple band; in some specimens the lower ocellus has a smaller one attached beneath it and which is also enclosed by the same purple band: hindwing with seven ocelli, the upper second, third, and the last smallest, all encircled by one purple band.

Expanse  $1\frac{4}{8}$  to  $1\frac{3}{8}$  inches.

Taken at Kandy by Captain Wade.

**Genus ORSOTRIÆNA.**

*Orsotriæna*, Wallengren, Kon. Vet. Akad. Förh. xv. p. 79 (1858).

*Mycalesis* (part), Hübner.

Forewing comparatively shorter than in *Calysisme*, exterior margin less oblique, the apex and posterior angle convex, costal vein only, in both sexes, swollen; male with a tuft of fine hairs exerted from a glandular pouch above the base of submedian vein; discocellulars less concave: hindwing less arched at the base, anal angle more convex, first subcostal branch emitted immediately before end of the cell, middle median branch emitted before lower end of the cell; no erectile tuft of hairs at base of the cell, these being replaced by a slight tuft of more delicate and recumbent hair above and below the median vein.

**ORSOTRIÆNA MANDATA** (PLATE 11, FIG. 1, 1a).

*Mycalesis Mandata*, Moore, Catal. Lep. Mus. East India Company, i. p. 233 (1857).

*Mycalesis Gamaliba*, Butler, Ann. and Mag. Nat. Hist. 1867, pl. 2, f. 3.

Male and female. Upperside brown, with transverse band of the underside distinctly visible. Underside with a discal transverse broad white band: forewing

with two small ocelli: hindwing with three prominent ocelli, the upper one being small, and all encircled by a silvery band. Body brown, palpi with a lateral white line.

Expanse, ♂  $1\frac{1}{2}$ , ♀  $1\frac{3}{4}$  inches.

“Frequents open ground at edges of forests. Found in the plains and up to about 3000 feet. Western and central provinces, from May to September. Flight slow and for short distances; settles down among long grass and easily captured” (*Hutchison*).

#### Genus NISSANGA.

Forewing short, somewhat narrow, costa arched at base, apex acute, exterior margin short, curved, posterior angle acute, second subcostal branch emitted at end of the cell; hindwing short, costa convex at base and thence oblique to apex, exterior margin oblique, slightly curved, anal angle convex, first subcostal branch emitted immediately before end of the cell, discocellulars erect and equal in length, two upper median branches on a foot-stalk some distance beyond end of the cell. Male with an erectile tuft of fine hairs springing from base of the cell and covering a small glandular patch at fork of the subcostal branches.

#### NISSANGA PATNIA (PLATE 12, FIG. 2, 2a).

*Mycalopsis Patnia*, Moore, Catal. Lep. Mus. East India Company, i. p. 232 (1857).

Male and female. Upperside blackish ochreous-brown, a marginal double yellow line on both wings: forewing with a subapical longitudinally-narrow white spot, a large lower black spot (or upper half of an ocellus) pupilled with white and broadly bordered on the upper half with pale ochreous-yellow, a broad medial ochreous streak from thence to base of wing: hindwing with the discal area suffused with ochreous, and in the male with two minute discal ocelli. Underside ochreous-yellow, marginal lines bright yellow: forewing with an elongated subapical white spot and large prominent lower ocellus, the lower portion of which is suffused with black; five transverse lines commencing from the base, and circle round the subapical spot and lower ocellus ochreous-red; a silvery band across the middle of the wing and another round the upper spot and lower ocellus: hindwing with a subapical and two subanal white spots distantly encircled by a black line and then by a red line, each again enclosed by a silvery band; a subbasal silvery band and two red lines. Body brown, palpi at the side and legs beneath greyish.

Expanse, ♂  $1\frac{5}{8}$ , ♀  $1\frac{6}{8}$  inches.

“Very common, and easy to capture. Taken at Galle and Kandy” (*Capt. Wade*).

## Genus YPTHIMA.

*Ypthima*, Hübner, Verz. bek. Schmett, p. 63 (1816).

Wings small, broad: forewing triangular; costa arched, apex rounded, exterior margin slightly convex, posterior margin straight; costal vein short, much swollen at base; first subcostal branch emitted before end of the cell, second at one-third, third at one-half, fourth and fifth at two-thirds beyond; upper discocellular angled close to subcostal, concave below, lower concave, radials from the upper and middle angles; median vein slightly swollen at the base, middle branch from near end of the cell: hindwing broadly oval; costal vein curved towards the base; first subcostal branch emitted before end of the cell; discocellulars oblique, concave, radial from angle of their middle; middle median branch from near end of the cell; submedian and internal veins slightly recurved. Body small, slender; palpi long, slender, first and second joints pilose beneath, third joint long; legs and antennæ slender.

**YPTHIMA SINGALA** (PLATE 12, FIG. 3, 3a).

*Ypthima Singala*, Felder, Verh. Zool. Bot. Gesc. 1868, p. 283.

Male. Upperside brown: hindwing with one, sometimes two small indistinct subanal spots encircled with yellow. Underside cinereous, numerous covered with short brown strigæ: forewing with transverse indistinct brown discal and marginal band, and a prominent bipupilled ocellus: hindwing with six small well-formed ocelli disposed in regular linear order, the first upper being very minute. Female. Upperside: forewing with a subapical bipupilled ocellus: hindwing with three small subanal ocelli. Underside as in male.

Expanse, ♂  $1\frac{3}{16}$ , ♀  $1\frac{4}{16}$  inch.

“Rare. A few specimens only taken in long grass on borders of coffee-plantations at Buselowe, 3000 feet elevation” (*Hutchison*).

**YPTHIMA THORA** (PLATE 12, FIG. 4, 4a).

Male. Upperside brown: forewing with a prominent subapical bipupilled ocellus: hindwing with a small indistinct subanal ocellus. Underside cinereous, numerous covered with short delicate brown strigæ: forewing with a very indistinct discal and marginal band, ocellus prominent: hindwing with five very minute ocelli, disposed in linear order.

Expanse, ♂  $1\frac{4}{16}$  inch.

**YPHIMA CEYLONICA** (PLATE 12, FIG. 5, 5a).

*Ypthima Ceylonica*, Hewitson, Trans. Ent. Soc. 1865, p. 288, pl. 18, f. 14, 15.

Male and female. Upperside brown: forewing with a large apical bipupilled ocellus: hindwing white on the exterior half, with two central submarginal ocelli and a third smaller imperfect ocellus at anal angle, a brown sinuous marginal line and an even outer line. Underside cinereous-white, sparsely covered with delicate brown strigæ, which are less numerous on the hindwing: forewing with the ocellus more elongated than above and brown bordered: hindwing with one apical and three lower ocelli.

Expanse, ♂  $1\frac{3}{4}$ , ♀  $1\frac{1}{2}$  inch.

Very common at Galle and Colombo among grass and weeds by the roadside. Flight short, constantly settling down on leaves or in grass" (*Hutchison*).

**Genus ELYMNIAS.**

*Elymnias*, Hübner, Verz. bek. Schwett. p. 37 (1816); Butler, Proc. Zool. Soc. 1871, p. 519.

Wings short, broad; forewing triangular; costal margin very convex, apex acute, exterior margin slightly oblique and sinuous, posterior margin slightly convex; male with a patch of thickened adpressed scales above submedian vein; costal vein much swollen at its base, extending to middle of the costa; subcostal arched near base, first and second branches emitted before end of the cell, third trifid; cell broad, short; discocellulars oblique, upper angled, lower concave; upper radial from lower angle; upper and middle median branches emitted from lower end of the cell; submedian bent near the base: hindwing subtriangular, anterior margin very convex, exterior margin convex, sinuous, angled or caudate in middle; costal vein short looped at its base and emitting a spur upward; first subcostal emitted at half length of the cell, second from end of cell and extending to apex; cell short and broad; upper discocellular erect, lower concave, radial from their angle; two upper median branches from end of the cell. Body slender; palpi long, slender, pilose above; legs slender, squamose; antennæ very slender.

**ELYMNIAS FRATERNA** (PLATE 13, FIG. 1 a, b).

*Elymnias fraterna*, Butler, Proc. Zool. Soc. 1871, p. 520, pl. 42, f. 3, ♂.

Male. Upperside dark purple-brown: forewing with exterior margin slightly fulvous; an oblique subapical indistinct blue maculated fascia: hindwing with a broad fulvous marginal band having paler centres between the veins. Underside dark purplish-ferruginous, a triangular apical space and outer borders broadly

covered with numerous grey-brown strigæ, the basal areas also with more regularly disposed strigæ, a distinct bluish-white spot on anterior border of hindwing. Female. Blackish purple-brown: forewing with basal and discal areas fulvous, a subapical oblique purple-white fascia and three lower marginal spots: hindwing with the basal and discal area fulvous, branches of median vein and abdominal area grey speckled, a marginal row of four bluish-white spots. Underside as in male, but paler, the basal area slightly fulvous, and the strigæ on borders more prominent.

Expanse, ♂ 2½; ♀ 3 inches.

Larva elongated, slightly thickened in middle, pubescent, head small, yellow, surmounted by two pink pubescent processes, last segment also with two processes; green, with three lateral yellow lines, the upper line ornamented with chrome-yellow spots and the fifth to eighth segments with a red or blue spot. Pupa green, with longitudinal yellow streaks bordered by red streaks or spots; head and thorax flattened, with three short tubercles. Feeds on *Palmaceæ*.

Occurs at Galle, and also about Kandy. (*Wade*.)

**ELYMNIAS SINGHALA** (PLATE 13, FIG. 2, 2a).

*Elymnias Singhala*, Moore, Proc. Zool. Soc. 1874, p. 568, ♀.

Male. Upperside dark purple-brown: forewing with a marginal macular-band formed of pale greenish-grey quadrangle patches, a few ochreous strigæ on the costal margin: hindwing with a broad marginal band of pale greenish-ochreous longitudinally-confluent strigæ. Underside: basal areas purple-brown, outer areas pinkish-grey, covered with numerous black strigæ, most dense on basal areas and along extreme outer margins; an indistinct purple-white apical spot and a submarginal row of black dots on hindwing. Female brighter coloured, the marginal bands more prominent.

Expanse 3 to 3¼ inches.

Occurs at Kandy. (*Wade*.)

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Subfamily NYMPHALINÆ.

Front legs atrophied in both sexes; lower discocellular veinlet—at least of the hindwing—more or less atrophied. Larva smooth, with the head or tail bifid; or covered with branched spines. Pupa suspended freely by the tail.

“The strength and firm texture of the wings of the butterflies of this subfamily

enable them to keep up an unceasing activity during the bright hours of the day. They seem to delight in displaying their exquisite beauty to the sun, coquetting with him untiringly while his face shines ardently upon them. Their flight, though so powerful, is not observed to sustain these charming insects in one uniform direction, like the *Euplwa's*, but serves rather to enable them, when rambling in their frolic, to make wide sweeps within no very extensive area; the larger species, like gorgeous moving flowers brightening up the green foliage of the trees and, with the birds, giving animation to the otherwise still life of the rich, varied vegetation of Ceylon. Some species of these butterflies, like the *Junonias*, prefer to display their bright expanded wings upon the sunny ground, whilst others, like *Neptis*, fly gaily about the low flowering shrubs. Many kinds, like *Diadema*, &c., when at play, return again and again at certain intervals of time to the same or to nearly contiguous spots, and thus give the collector renewed opportunities of capture." (Note by Dr. Thwaites.)

#### Genus ROHANA.

*Apatura*, Sect. II. Felder, Neues Lep. p. 36 (1861).

Wings short; forewing triangular; first subcostal branch emitted near end of the cell, second at a short distance beyond the cell, third and fourth at equal distances; discocellular short, angled close to subcostal, upper radial from the angle and lower radial from its end; cell open; lower median branch emitted from opposite discocellular, the two upper at some distance beyond; submedian straight: hindwing triangular; costal vein curved upward, extending to apex, with a short basal curved spur; subcostals and radial contiguous at base but divergent; cell open; lower median branch emitted at a short distance from base of the two upper, submedian and inner vein recurved. Body short, thorax stout, palpi porrect, pointed, flat beneath, squamose, legs short, squamose, antennæ slender.

*Type*, R. Parysatis.

#### ROHANA CAMIBA (PLATE 14, FIG. 1 a, b, c).

Male. Upperside dark purple-black: forewing with a subapical linear series of three minute white spots. Ciliæ white streaked. Underside greyish purple-brown, costal area beyond the cell on forewing and exterior border of both wings chestnut-red; a black-lined chestnut-red mark and two inner small spots within both cells, and a small spot below the cell on forewing; a slender black zigzag inner-discal line, followed by a suffused black fascia and a submarginal row of purple-grey rings crossing both wings, the latter ending at the apex in a more prominent continuous grey streak, and the inner line bordered externally by purple-white spots which are

less distinct on the hindwing; the three transverse subapical small white spots distinct and followed by two other very minute spots, and then a black spot, all visible on the blackish fascia; a subanal black spot pupilled with white and circled with chestnut-red on hindwing. Female. Upperside ferruginous, darkest basally; markings as in male but of a ferruginous-brown colour, the transverse discal white spots and subanal ocellus distinct. Underside paler, markings less distinct, except the white spots on forewing which are also purple bordered.

Expanse, ♂  $1\frac{7}{10}$ , ♀  $1\frac{6}{10}$  inch.

Larva smooth, head small and surmounted by two black spined-processes projecting in front, last segment with two green naked processes; pale yellowish-green with a dark green dorsal and two lateral bands; face black streaked. Pupa green, with a pointed angle on middle of thorax and on basal segment of abdomen; head attenuated, with two points. Feeds on *Celtis lycodoxylon*.

“Common on forest ground in the hills about 5000 feet near Newera Eliya. Frequently seen basking on the road” (*Hutchison*).

This species is closely allied to *R. Parisatis*, of which a large series of both are under examination, but differs in its slightly more acute angle below the apex of forewing in both sexes, and a more prolonged anal angle in male, the male also having three white spots on upperside of forewing, one only being present in *A. Parisatis*.

#### Genus CHARAXES.

*Charaxes*, Ochs. Schmett. Eur. iv. p. 18 (1816).

Forewing triangular, costa arched, apex narrow; exterior margin oblique, uneven, concave in the middle, posterior margin straight; first and second subcostal branches emitted before end of the cell, third immediately beyond the end and extending to the apex, fourth and fifth at one-third beyond; upper discocellular short, angled, lower slender and curved, radials from angles of the upper; median branches wide apart, upper curved; submedian curved at the base: hindwing triangular; costa very convex at the base, exterior margin nearly straight, sinuous, with a slender tail at end of upper and lower median veins, abdominal margin long; costal vein much curved, extending to the apex, with a short bent basal spur, subcostals and radial equidistant from costal vein, cell closed by a slender discocellular vein, two upper median branches from end of the cell, submedian and internal veins wide apart, internal short. Body short, thorax robust, palpi porrect, pointed at apex, flat beneath, squamose, legs squamose, antennæ stout.



**CHARAXES FABIUS** (PLATE 15, FIG. 1).*Papilio Fabius*, Fabricius, Spec. Ins. ii. p. 12 (1781).*Charaxes Fabius*, Butler, Catal. Fabr. Lep. Brit. Mus. p. 52.*Papilio Solon*, Fabr. Ent. Syst. iii. i. p. 69 (1793).

Male and female. Upperside blackish olive-brown: forewing with two subbasal small yellow spots, and a transverse discal recurved series of seven, or eight spots, the three lowest widest, a marginal row of minute spots: hindwing with a transverse medial irregular yellow band, a submarginal row of small lunules and a marginal row of small geminate spots, those at anal angle greenish. Underside lilac-grey, dullest at base and purple-tinted externally; both wings with white discal markings as in upperside, bordered with a black inner line, and basal irregular black streaks: forewing with a submarginal row of black-bordered ochreous-yellow spots, and a marginal row of indistinct purple-white spaces: hindwing with a discal irregular row of black-bordered yellow lunules, each surmounted by an inner purple-white and a black lunule; a marginal row of ochreous-yellow lunules, each surmounted by an indented black line bordered above and beneath with purple-white.

Expanse, ♂  $2\frac{7}{8}$ , ♀  $3\frac{2}{8}$  inches.

Captured at Dambool and Kandy. Not very common. (*Wade.*)

Genus **EULEPIS**.*Eulepis*, Dalm. in Billb. Enum. Ins. p. 80 (1820).

Wings similar in form to *Charaxes*; veins of forewing also similar; hindwing with the second subcostal branch and radial nearer the first branch; cell open; upper and middle median branches further from lower branches, internal vein longer.

**EULEPIS SAMATHA** (PLATE 14, FIG. 2 a, b).*Charaxes Samatha*, Moore, Proc. Zool. Soc. 1878, p. 831.

Male and female. Upperside dark blackish-brown, suffused with olive-brown basally, a broad medial discal pale sulphur-green band crossing both wings: forewing with a small subapical spot and a single or obsolete apical minute spot: hindwing with a submarginal row of small white spots, and a marginal indistinct row of fulvous lunules. Underside pinkish olive-brown, discal band and subapical spots as above, nacreous, and bordered inwardly by a black line: forewing with an outer discal row of black lunules on a purple fascia, and basal white-bordered black streaks and two small spots: hindwing with an outer discal row of deep crimson lunules

bordered with purple and black; a basal white-bordered black line, a submarginal row of purple-white lunular spots bordered outwardly by black and ochreous.

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

Larva elongated, thickened in the middle, dark green; head large, wide, flattened, surmounted by four spinous processes; last segment with two short naked points; the segments with an oblique yellowish-white stripe most prominent on the seventh, ninth, and eleventh, beneath these a lateral series of small white spots. Pupa cylindrical, back and thorax convex, head truncated, pointed in front; green, streaked with white. Feeds on *Cassalpinia*.

“Taken at Colombo and Kandy. Males most frequently found perched high up on acacia-trees. Flight quick and strong. Common” (*Wade*).

#### Genus HARIDRA.

Similar in form and venation to *Charaxes*; hindwing more convex externally, costal margin shorter, costal vein more curved; a short tail only from end of the upper median vein.

#### HARIDRA PSAPHON (PLATE 15, FIG. 2).

*Charaxes Psaphon*, Westwood, Cabinet of Oriental Entom. p. 43, pl. 21, f. 1, 2 (1848), ♂.

Male. Upperside fulvous-red: forewing with the outer half purple-black, a discocellular red-lined black mark, and some indistinct black discoidal streaks: hindwing with a very broad apical submarginal black band attenuated and broken hindward and ending in two small white-bordered anal spots, a short curved black streak from the costa. Underside fulvous-brown, washed with purple-grey, crossed by three basal and two discal zigzag black lines with pale borders: forewing with a submarginal blackish macular fascia, and hindwing with a lunular fascia and marginal row of small black pointed white anchor-shaped marks.

Female unknown.

Expanse, ♂  $3\frac{3}{8}$  inches.

“Taken near Trincomalee in August, fluttering over the ground on the edge of forest jungle” (*Hutchison*).

Also found at Kandy. (*Wade*.)

#### HARIDRA SERENDIBA (PLATE 15, FIG. 3, ♀).

Female. Upperside deep fulvous-red: forewing with a broad transverse medial discal purple-white band, showing some dusky sinuous streaks of the underside, and

bordered inwardly by black streaks, the outer border to external margin being brown-black with a slight fulvous lunular posterior inner streak: hindwing with a short medial discal purple-white band bordered inwardly by a narrow black streak; a submarginal black macular band, broad and entire apically, thence attenuated and broken into smaller spots to anal angle and surmounted by a small white central streak one between each vein. Underside fulvous-brown, darkest basally and externally and washed with purple-grey; the disc transversely fulvous-white, or very pale fulvous, base with transverse irregular zigzag black lines, a short line beyond the cell and a sinuous line across the disc, a submarginal irregular dusky lunular fascia on forewing, and hindwing with a row of small black-pointed anchor-shaped white marks.

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

Taken in the forest at Kottawa, and at Kandy, by Captain Wade.

#### Genus EUTHALIA.

*Euthalia*, Hübner, Verz. bek. Schmett. p. 41 (1816).

*Aconthea*, Horsfield, Catal. Lep. East India Company (1829), pl. 8, f. 6.

*Adolias*, Boisduval, Spec. Gen. des Lep. i. pl. 3, f. 2 (1836); Westwood, Gen. D. Lep. p. 289.

Forewing triangular, costa arched, apex somewhat pointed, exterior margin uneven, slightly concave in the middle, posterior margin straight, first subcostal branch emitted at nearly one-half before end of the cell, second near its end, third at one-fourth beyond and extending to apex, fourth and fifth at three-fourths beyond and terminating below the apex; discocellular short, very obliquely inward, and slightly angled near its upper and lower end, the radials from its angles; cell open, narrow; median branches wide apart, the two upper opposite the discocellular; submedian straight, hindwing triangular, costa arched, exterior margin scalloped, convex, anal angle pointed in male; costal vein curved, extending to apex, with a short curved basal spur; first subcostal branch and radial equidistant from costal, cell open; median, submedian, and internal veins wide apart. Body short, robust, palpi porrect, pointed at apex, pilose above, flattened and squamose beneath, legs squamose, antennæ long.

#### EUTHALIA LUBENTINA (PLATE 16, FIG. 1 a, b).

*Papilio Lubentina*, Cramer, Pap. Exot. ii. p. 92, pl. 155, f. C, D (1779), ♀; Donovan, Ins. of China, pl. 36, f. E.

Male and female. Upperside dark greenish-brown, paler and ænescent externally: forewing with short black transverse discoidal streaks and two dull scarlet

interspaces, a black spot below the cell, three white spots beyond the cell, and a recurved discal series, a submarginal indistinct black lunular fascia: hindwing with costal border purple washed, a black discocellular mark, a submarginal row of black-bordered scarlet spots, and a marginal row of black spots, the three apical and anal spots being bordered externally with scarlet. Underside: forewing greenish purple-brown, suffused with ochreous-brown apically, markings more prominent than above: hindwing ochreous-brown, greenish-brown anally, the scarlet spots very prominent and with scarcely any black border, the costal margin, two discoidal black-bordered spots, and two above them, are also scarlet. Female. Forewing with a medial transverse outwardly-oblique irregular macular greenish-white band, and three small subapical spots, a dull scarlet discoidal mark: hindwing marked as in male. Underside: forewing greyish-purple at base, apex ochreous-brown; posterior angle greenish-grey, macular white band and spots as above, two scarlet-streaked black discoidal marks and two basal spots: hindwing ochreous-grey, greenish-grey anally, scarlet markings as in male but less distinct, and the posterior submarginal spots nearly obsolete.

Expanse, ♂  $2\frac{1}{2}$ , ♀ 3 inches.

Larva green, with ten pair of long green laterally projecting very delicate branched spines, each pair tipped with crimson; a large dorsal purple spot centred with white on back of the fourth, sixth, seventh, and ninth to twelfth segments; head spotted with black. Pupa short, green, keeled along the back and broadly triangular across the middle; a pale line along the keel and across the middle, a red lateral line and thoracic spots. Feeds on *Loranthus*.

Occurs in the same districts as *D. Evelina*, and has similar habits, the flight being quicker and stronger" (*Hutchison*).

#### EUTHALIA GARUDA (PLATE 16, FIG. 2, 2a).

*Adolias Garuda*, Moore, Catal. Lep. Mus. East India Company, i. p. 186 (1857); Trans. Ent. Soc. 1859, p. 64, pl. 3, f. 2, ♂ ♀.

Male. Upperside dark olive-brown, basal area dusky: forewing with three black-lined discoidal marks and streak below the cell, a series of three, or five, transverse upper discal white dentate spots, two smaller spots on costal margin before the apex, a submarginal suffused dusky fascia: hindwing suffused with pink on anterior border, a discal curved dentate dusky band, two black-lined discoidal marks, a submarginal row of small black spots. Underside light greyish-brown, greyest at the base and apex, marked as above but less distinct. Female paler olive-brown, generally suffused with ochreous, markings as in male, except that

the white discal spots on forewing are much larger. Underside paler than in male.

Expanse, ♂  $2\frac{3}{8}$ , ♀  $2\frac{1}{8}$  inches.

Larva green, with ten pair of long laterally-projecting very delicate branched green spines; a pale dorsal line with blue and white spots, head red spotted. Pupa green, thick, keeled along the back, broadly triangular across the middle; abdominal end short, tubercular at tip, thoracic end long ending in two tubercular points; a band across the triangular back, some thoracic spots, and the tubercular points yellow; a lateral row of black dots on abdomen.

**EUTHALIA VASANTA** (PLATE 17, FIG. 2 a, b).

*Adolias Vasanta*, Moore, Trans. Ent. Soc. 1859, p. 78, pl. 7, f. 2, ♀.

Male. Upperside blackish purple-brown: forewing with the discal area transversely glossed with greenish-brown and sinuously bordered with black, discoidal black-lined marks and streaks below the cell: hindwing with anal area greenish glossed, discoidal black-lined marks, a discal curved black sinuous band, and marginal row of small black spots. Underside ochreous-grey, brownish externally, markings as above, less distinct. Female. Upperside olive-brown: forewing with an outwardly oblique discal macular white band; other markings and underside as in male, but paler.

Expanse, ♂  $2\frac{3}{8}$ , ♀  $2\frac{1}{8}$  inches.

Larva dark green, with ten pair of long paler green laterally-projecting branched spines; a whitish dorsal line and a lateral row of yellow dots, the segments crossed by a purple line. Pupa short, green, keeled along the back, broadly triangular across the middle; a lateral band, a band across the triangular back, and thoracic black-bordered spots yellow; a lateral abdominal row of black dots. Feeds on *Mangifera*, &c.

“Common at Colombo, about mango and cashew-trees. Flight rapid. Settles on the leaves and on the ground” (*Hutchison*). Plentiful at Galle and Kandy. (*Wade*.)

**Genus DOPHLA.**

*Adolias*, sect. V. Felder, Neues Lep. p. 35 (1861).

Forewing triangular, costa much arched, apex truncate, exterior margin more or less even, angular below the apex and very concave in the middle, posterior margin long, straight; first subcostal branch emitted at one-third before end of the cell,

second near its end, third at one-fourth beyond and extending to apex, fourth and fifth at three-fourths beyond; upper discocellular short inwardly oblique, waved, lower discocellular outwardly oblique and slightly concave, upper radial from close to subcostal, lower radial from near end of upper discocellular; upper median branch from end of the cell, middle branch from immediately below its end, submedian slightly recurved: hindwing bluntly oval, costa slightly arched in male, straight in female, exterior margin very convex, more or less even; cell closed by a slender oblique discocellular vein, other veins as in *Euthalia*. Body robust.

**DOPHLA EVELINA** (PLATE 17, FIG. 1, 1a).

*Papilio Evelina*, Stoll, Suppl. Cramer's Pap. Exot. pl. 28, f. 2, 2b (1791), ♂.

Male and female. Upperside ænescent sap-green; both wings with a transverse discal dusky lunular fascia, and a less distinct marginal fascia: forewing with two discoidal black-lined marks, the upper part of the inner one centred with vermilion: hindwing with one black-lined mark. Underside greenish-grey, with dull sap-green transverse discal and a confluent double marginal fascia: forewing with discoidal marks as above: hindwing with two discoidal marks, and two rings above them, both of which and the inner discoidal are centred with vermilion.

Expanse, ♂ 3, ♀ 4 inches.

"Occurs in the eastern and western provinces in low country forests in June. Flight rapid, along forest-paths, settling in thick parts of trees and sometimes on the ground. Shy" (*Hutchison*).

Rather common in the Kottawa forest, but difficult to capture. (*Wade*.)

**Genus SYMPHÆDRA.**

*Symphædra*, Hübner, Verz. bek. Schmett. p. 39 (1816); Westwood, Diurnal Lep. p. 294.  
*Adolias*, Sect. x. Felder, Neues Lep. p. 35 (1861).

Wings short: forewing triangular, costa slightly arched, exterior margin short slightly scalloped, posterior margin straight; first and second subcostal branches emitted before end of the cell, third at one-fifth beyond, fourth and fifth at two-thirds beyond; discocellular very short convexly angular, the radials from the angles; cell open, short, broad; lower median branch opposite discocellular, the two upper at some distance beyond, submedian straight: hindwing broadly oval, exterior margin very convex, scalloped, abdominal margin short; veins similar to *Euthalia*. Body small, palpi porrect, somewhat pilose, legs squamose, antennæ of moderate length, stout.

## SYMPHÆDRA NAIS.

*Papilio Nais*, Forster, Novæ Spec. Ins. Cent. i. p. 73 (1771).

*Papilio Thyelia*, Fabricius, Ent. Syst. iii. i. p. 142 (1793); Donovan, Ins. of India, pl. 31, f. 3.

*Symphædra Thyelia*, Doubleday and Hewits., Gen. of D. Lep. pl. 42, f. 6; Butler, Catal. Fabr. Lep. Brit. Mus. p. 87.

Male and female. Upperside fulvous-red: forewing with a broad black discocellular spot, a contiguous discal spot, an oblique subapical streak, and a transverse submarginal and marginal narrow lunular band, the two joined by streaks on the veins: hindwing with a large black medial costal spot, a submarginal row of small round spots, and broad marginal band, the black slightly ascending the veins. Cilia alternated with white. Underside brownish-ochreous; forewing with the discal area bright ochreous, two discoidal black ringlet-marks bordered between by white, a black contiguous discal spot, an oblique short subapical white macular band bordered inwardly with dark brown, followed by lower submarginal black lunules: hindwing with transverse medial discal band, which is sometimes broken or consisting only of a costal and lower spots; two small discoidal red-centred spots, and a submarginal row of small black spots.

Expanse, ♂ 2 $\frac{3}{4}$ , ♀ 2 $\frac{1}{4}$  inches.

Larva dark green, with ten pair of long green laterally-projecting very delicate branched spines; a dorsal row of dark blue-bordered red spots. Pupa green, thick, keeled along the back, broadly triangular across the middle, a black-bordered pale band across the triangular back and some thoracic spots.

## Genus DISCOPHORA.

*Discophora*, Boisduval, Spéc. Gén. Lep. i. pl. 12, f. 3 (1836); Westwood, Gen. D. Lep. p. 329 (1851).

Wings short, broad; forewing triangular; costa arched, apex acute, exterior margin slightly oblique and straight, posterior margin straight; costal vein extending to near the apex; first and second subcostal branches contiguous and emitted near end of the cell, first anastomosed with costal at two-thirds its length, second trifurcate near the apex; radials from upper end of the cell, the upper much curved; discocellulars bent inward at their middle, the lower oblique; cell broad; median veins wide apart and at equal distances; submedian curved at its base: hindwing convex externally in male, in female more or less sinuous and with a slight angle at apex and in middle of posterior margin; abdominal margin long; costal vein much curved its entire length, terminating at the apex and with a short curved basal spur; two subcostal branches and radial at equal distances apart; cell open in both sexes; upper median branch much curved; submedian and internal veins near the margin,

internal short. Males with a prominent round glandular patch of raised scales at the angles of median branches. Body robust, short, palpi long, ascending, slender, apex pointed, squamose beneath, pilose above; legs squamose, antennæ long.

**DISCOPHORA LEPIDA** (PLATE 18, FIG. 1 *a, b*).

*Enispe lepida*, Moore, Catal. Lep. Mus. East India Company, i. p. 213 (1857), ♀.

Male. Upperside purple-brown: forewing with a small subapical outwardly oblique transverse bluish-purple white macular-band, and some very indistinct contiguous lower submarginal spots: hindwing with a distinct black oval discocellular spot: underside ochreous-brown, numerous covered with dark brown strigæ, with a darker brown discoidal spot, sinuous subbasal transverse line and broader medial discal indistinct fascia, and outer marginal sinuous grey-bordered lines: hindwing with a large upper discal and a lower subanal pale-bordered ocellus. Female paler purple-brown: forewing with a broad transverse discal purple-white macular-band, an inner discal series of three small spots, and a submarginal row of purplish-ochreous spots: hindwing with three discal rows of irregular lunular ochreous spots, and a marginal line. Underside pale ochreous, indistinctly covered with numerous slender brown strigæ; other markings as in male, but less distinct.

Expanse, ♂ 3½, ♀ 4 inches.

Taken in forest land near Galle in July. Very rare. (*Hutchison.*)

Genus **KALLIMA**.

*Kallima*, Westwood, Gen. Diurnal Lep. p. 324 (1850).

Wings very broad, short; forewing triangular; costa very convex, apex produced to a point; exterior margin long convexly angular hindward; posterior margin long, slightly concave in middle; first and second subcostal branches emitted before end of the cell, third at one-fourth beyond and extending to apex, fourth forked at one-fourth from the apex; cell short, broad; upper discocellular shortest, concave and angled close to subcostal, lower concave, upper radial from angle near subcostal, lower radial from their middle; median branches wide apart, the two upper from end of the cell, upper much arched; submedian slightly recurved: hindwing lengthened and produced into a narrow tail; costa slightly convex at the base, apex acute, exterior margin convex in middle, abdominal margin very long, concave from anal angle to tip of the tail; costal vein much arched from the base and extending to apical angle, emitting a short forked basal spur; first subcostal branch emitted before end of the cell; discocellulars outwardly oblique, both concave; radial from



their middle; cell short; two upper median branches from end of the cell; submedian extending to tip of tail; internal vein terminating at anal angle. Body short, robust, palpi large, porrect, pointed at apex, flattened beneath, squamose; legs squamose; antennæ long.

**KALLIMA PHILARCHUS** (PLATE 20, FIG. 1, ♂).

*Amathusia Philarchus*, Westwood, Cabinet of Oriental Entom. p. 56, pl. 27, f. 4 (1848), ♂.

*Kallima Philarchus*, Moore, Trans. Ent. Soc. Lond. 1879, p. 15.

Male. Upperside deep dusky steel-blue; forewing with a slightly paler blue oblique transverse band with inner black discocellular interrupted border; apical area blue-black with a white spot near the angle; two minute scarcely discernible hyaline discal spots: hindwing tinged with brownish dusky-blue along the borders. Underside purple ochreous-brown, indistinctly black speckled, with a dark brown narrow band crossing both wings from apex to end of the tail: forewing with the minute discal hyaline spots bordered with black speckles, a series of small black spots near the apex: hindwing with an indistinct oblique discal row of very ill-defined greyish ocelli.

Expanse  $3\frac{6}{8}$  inches.

A very rare butterfly. Taken at Kandy. (*Wade.*)

**KALLIMA MACKWOODI** (PLATE 20, FIG. 2, 2a).

*Kallima Mackwoodi*, Moore, Trans. Ent. Soc. Lond. 1879, p. 14.

Male. Upperside pale indigo-blue: forewing with a broad paler blue oblique transverse discal band, which is outwardly bordered by a black sinuous line and inwardly by interrupted discocellular streaks terminating on lower median vein, apical area blue-black, with a small white spot near the angle, two prominent hyaline discal spots, the lower spot large: hindwing tinged with brown along the anterior and exterior borders, a black lunular submarginal line and indistinct discal spots. Underside greenish ochreous-brown, black speckled, crossed by three indistinct darker oblique purple fasciæ, with a prominent dark brown narrow transverse band crossing both wings from apex to end of the tail: forewing with a series of small black points above the hyaline spots: hindwing with a row of ill-defined and indistinct ocelli on the medial fascia. Female paler above, the oblique band nearly white, with two prominent hyaline discal spots.

Expanse, ♂  $3\frac{1}{8}$ , ♀  $3\frac{2}{8}$  inches.

## Genus DOLESCHALLIA.

*Doleschallia*, Felder, Neues Lep. p. 14 (1861).

Wings short, broad, triangular; costa very convex, apical angle acute, exterior margin angled outward near the apex, concave below the angle and convex hindward; first and second subcostal branches emitted before end of the cell, third at nearly one-half beyond, fourth forked at one-third from the apex; discocellulars short, angled outward at their middle and extending only to one-third across the cell, the cell being broad and open; radials from the middle and lower end of discocellulars; median branches wide apart, upper branch much curved; submedian nearly straight: hindwing produced hindward to a short broad tail, costa very convex at the base, apex acute, exterior margin slightly convex, abdominal margin deeply concave below the anal angle; costal vein arched, extending to apex, and with a short basal forked spur; first and second subcostal branches at equal distances from the base, radial recurving from angle of lower subcostal; cell open, upper median branch arched; submedian extending to tip of tail; internal vein short. Body short, robust; palpi large, porrect, flattened beneath, apex pointed, squamose; legs squamose; antennæ long.

**DOLESCHALLIA BISALTIDE** (PLATE 19, FIG. 1 a, b).*Papilio Bisaltide*, Cramer, Pap. Exot. ii. pl. 102, f. C, D. (1779).*Doleschallia Bisaltide*, Felder, Neues Lep. p. 14.

Male. Upperside deep fulvous: forewing with a very oblique black band from middle of costa joining a marginal band which expands broadly at the apex, three minute white spots obliquely before the apical angle: hindwing dusky fulvous on anterior margin, with a more or less distinct small black upper and lower discal spot and two wavy marginal lines: underside dark fulvous-brown or dark olive-brown, obliquely fasciated with purple: forewing with two more or less prominent black-bordered white discoidal streaks and a lower spot, a red-lined discocellular mark, a transverse discal sinuous black line, a submarginal series of white spots, the two lower spots ringed with purple, the upper terminating in a white costal streak, a marginal dark brown lunular line: hindwing with a black-bordered white discoidal spot and another spot above the cell, a transverse discal straight black line, a distinct upper and lower discal ocellus, marginal black line indistinct and generally terminating in a blue caudal streak, abdominal margin black speckled. Female. Upperside slightly paler on forewing. Underside duller fulvous-brown or olive-brown, basal white marks obsolete, other markings as in male, but less distinct.

Expanse, ♂  $2\frac{7}{8}$ , ♀ 3 inches.

Larva long, somewhat slender, purple-black, with a dorsal and lateral series of short delicate branched blue spines; a central lateral row of white spots. Pupa slender, head produced into two points, constricted behind the thorax; pale reddish-purple, numerously dotted with black. Feeds on Acanthads.

“Taken in February and August in low country forest-paths in the Eastern Province” (*Hutchison*).

Genus **PRECIS**.

*Precis*, Hübner, Verz. bek. Schmett. p. 33 (1816); Felder, Neucs Lep. p. 13.

*Junonia*, sect. 2, *Precis*, Doubleday, Gen. D. Lep. p. 209.

Wings short, broad: forewing triangular, costa much arched, exterior margin waved, truncated at the apex and excavated in the middle, posterior margin nearly straight; costal vein short; first and second subcostal branches short, emitted close to end of the cell; third trifurcate, emitted at nearly half length beyond the cell, fourth and fifth at three-fourths beyond; upper discocellular angled close to the subcostal, concave below, lower discocellular very slender, obliquely recurved; radials from the angle and end of the upper; cell short, broad; two upper median branches from angle at end of the cell, lower widely separated: hindwing bluntly-oval, exterior margin very convex, waved and prolonged into a very short tail at anal angle, abdominal margin long, concave above anal angle; costal vein with a short basal spur, much arched from the base and extending to the apex, base of subcostal very short, two subcostal branches and radial very long; cell open; two upper median branches short and emitted from opposite one-fourth distance beyond base of radial, lower median opposite its base; submedian extending to anal angle, internal vein short. Body short, palpi projecting in front, second joint long, third short and pointed, pilose above; legs slender; antennæ slender, club stout.

**PRECIS IPHITA** (PLATE 21, FIG. 1 a, b).

*Papilio Iphita*, Cramer, Pap. Exot. iii. pl. 209, f. C, D. (1779).

*Precis Iphita*, Moore, Catal. Lep. Mus. E. I. C. i. p. 143.

*Junonia Iphita*, Butler, Catal. Fabr. Lep. B. M. p. 76.

*Precis intermedia*, Felder, Reise Novara Lep. iii. p. 402 (1867).

Male and female. Upperside dark olive-brown; both wings with the basal half darker brown, the divisional border across the disc being darkest, outwardly-angular from the costa of forewing and slightly waved on the hindwing; a dark outer discal fascia traversed on the forewing by one or two (or more) indistinct ocellated spots, and on the hindwing by a series of distinct ochreous-ringed ocelli; a submarginal

and marginal lunular dark line; cilia white streaked. Underside darker brown, the basal area crossed by three indistinct chalybeate-grey fasciæ, a discal divisional pale-bordered line which is sinuous on the forewing and straight on the hindwing; ocelli less distinct than above; submarginal and marginal lunular line with pale borders.

Expanse  $2\frac{5}{8}$  inches.

Taken at Kandy. (*Wade.*)

Larva cylindrical, dark brown, with dorsal and lateral rows of short delicate branched spines. Pupa short, with tubercular points on dorsal segments, thorax broad.

#### PRECIS LAOMEDIA (PLATE 21, FIG. 2).

*Papilio Laomedea*, Linnæus, Syst. Nat. i. 2, p. 772 (1767); Drury, Ill. Exot. Ent. pl. 5, f. 3;

Cramer, Pap. Exot. i. pl. 8, f. F, G; Fabricius, Syst. Ent. p. 494.

*Junonia Laomedea*, Butler, Catal. Fabr. Lep. B. M. p. 77.

Male and female pale purple-grey: forewing with two black sinuous marks across the cell, a transverse discal deeply-sinuous line, two marginal and a ciliary lunular line; a medial discal series of six various-sized white-circled ocelli and apical white dentate marks, the ocelli with more or less transversely particoloured (red and black) centres and mostly blind: hindwing with a less deeply sinuous black discal line, two marginal and a ciliary lunular line, a discocellular mark, and a medial discal row of five similar ocelli. Underside ochreous-white, crossed by narrow brown sinuous basal, discal, and less distinct marginal lines; two ocelli prominent on each wing.

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

Occurs at Kandy and Galle. (*Wade.*)

#### Genus JUNONIA.

*Junonia*, Hübner, Verz. bek. Schmett. p. 34, (1816); Doubleday, Gen. D. Lep. p. 206.

Scarcely differs from *Precis*; it is similar in outline, except that in some species the hindwing is angled at the middle of the exterior margin; the venation is the same, excepting that the lower discocellular vein is quite obsolete in both wings.

**JUNONIA LEMONIAS** (PLATE 21, FIG. 3, 3a, ♂ ♀).

*Papilio Lemonias*, Linnæus, Mus. Ulr. p. 277 (1764); Syst. Nat. i. 2, p. 770 (1767); Fabricius, Ent. Syst. iii. p. 90.

*Junonia Lemonias*, Butler, Catal. Fabr. Lep. B. M. p. 74.

*Papilio Aonis*, Cramer, Pap. Exot. i. pl. 35, f. D—F; Sulzer, Gesch. Ins. pl. 16, f. 7.

Male and female. Upperside greyish olive-brown: forewing with two sinuous black-lined marks and two contiguous ochreous-yellow marks within the cell; two series of blackish-bordered ochreous-yellow transverse discal spots enclosing an indistinct brown upper and a larger prominent lower red ocellus; a marginal and ciliary ochreous-yellow lunular line: hindwing with a large apical red ocellus enclosing a minute indistinct upper and lower spot; an indistinct black discocellular mark; two marginal black lunular lines with pale ochreous-yellow borders. Underside yellowish-ochreous; crossed by basal and discal dusky fasciæ and marginal lunular lines, the fasciæ on basal area sinuous, that crossing the disc of the hindwing nearly straight and bordering a row of pale-bordered black points; a blind lower ocellus on forewing.

Expanse, ♂  $2\frac{1}{8}$ , ♀  $2\frac{2}{8}$ .

Larva cylindrical, smoky black, with a pale dorsal band and paler lateral lower shade; each segment with eight small branched spines.

“Occurs in the Eastern and Western Provinces, in low country forests and cultivated ground. Found occasionally, at uncertain intervals, at Colombo, more common on road to Trincomalie. Flight quick; settles on the ground” (*Hutchison*).

“A low country insect, more numerous in the interior than near the sea coast” (*Mackwood*).

“Taken at Kandy” (*Wade*).

**JUNONIA ORITHYA** (PLATE 22, FIG. 1 a, b).

*Papilio Orithya*, Linnæus, Syst. Nat. i. 2, p. 770 (1767); Cramer, Pap. Exot. i. pl. 19, f. C, D, ♀, pl. 32, f. E, F, ♂; iv. pl. 290, f. A, B, ♂; Donovan, Ins. China, pl. 37, f. 1, ♀.

*Junonia Orithya*, Hübner, Verz. bek. Schmett. p. 34; Moore, Catal. Lep. Mus. E. I. C. 1, p. 141, pl. 5, f. 5, 5 a; Butler, Catal. Fabr. Lep. B. M. p. 73.

*Junonia Ocyale*, Hübner, Verz. bek. Schmett. p. 34.

Male. Upperside: forewing dark blue-black from base to the disc, outer area fuliginous-black; a purple-tinted ochreous-white short oblique subapical band, and two transverse submarginal narrow lunular fasciæ; on the inner fascia are two small red-ringed ocelli, below which the posterior angle is tinged with blue; costal edge ochreous-white: hindwing blue, suffused with purple; a black basal angular patch

curving across the cell towards the anal angle, and merging into brown on the abdominal margin; two ocelli near the outer margin, the lower red and ringed with black, the upper almost black and blind; two pale-bordered marginal lines.

Female differs in the hindwing having the basal half entirely black, both the ocelli being large and of a bright red. Underside dull ochreous: forewing with three transverse basal ochreous-red bands bordered with black; a discal sinuous black fascia and pale outer lunular fasciæ; ocelli less distinct: hindwing with narrow brown transverse sinuous lines and a brownish discal fascia; ocelli very pale and indistinct.

Expanse, ♂  $1\frac{3}{4}$ , ♀ 2 inches.

Larva dark purple-brown, each segment with short branched spines, two lateral rows of small yellow spots. Pupa ochreous, speckled and lined with dark brown. Feeds on *Acanthads*.

“Found at all times in the Western and Central Provinces, both in the plains and up to 3000 feet in cultivated and open waste ground. Flight rather quick; settles on the ground and seems partial to hot, dusty, and sandy spots” (*Hutchison*).

“Occurs everywhere, but plentiful only from 2000 to 4000 feet; its favourite resort being the Patenas, and particularly on the pathways or bare places in them” (*Mackwood*).

“Taken at Kandy and Galle” (*Wade*).

#### JUNONIA CENONE (PLATE 22, FIG. 3, 3 a, ♂ ♀).

*Papilio Cenone*, Linnæus, Syst. Nat. i. 2, p. 770 (1767); Cramer, Pap. Exot. i. pl. 35, f. A, B, C;

Donovan, Ins. China, pl. 38, f. 1; Fabricius, Ent. Syst. iii. p. 90.

*Junonia Cenone*, Hübner, Verz. bek. Schmett. p. 34; Butler, Catal. Fabr. Lep. B. M. p. 72.

*Papilio Hierta*, Fabricius, Ent. Syst. v. p. 424 (1798).

Male. Upperside black: forewing with a broad medial ochreous patch, extending from the base to beyond the disc, and thence narrowed and bent downward; two short paler ochreous streaks before the apex: hindwing black, with a large broad subanal ochreous patch, and a large distinct blue subbasal spot.

Female. Upperside dark ochreous-brown, with the ochreous patch paler, shortened basally, and crossed by two black lines on middle of the cell, and a broader discocellular band; a black upper ocellus and a larger lower discal ocellus: hindwing with a very small upper and lower discal ocellus, and two marginal lunular ochreous lines. Underside: forewing pale ochreous-brown; medial patch paler ochreous and suffused outwardly; crossed by black discoidal lines; two black discal spots:

hindwing with basal half greyish-ochreous; discal area pale ochreous; crossed with brown lunular lines, a medial fascia, and discal row of small brown spots.

Expanse 2 inches.

“A scarce, low country insect” (*Mackwood*). Also taken at “Kandy and Dambool. Scarce” (*Wade*).

**JUNONIA ASTERIE** (PLATE 22, FIG. 2).

*Papilio Asterie*, Linnæus, Syst. Nat. i. 2, p. 769 (1767); Cramer, Pap. Exot. i. pl. 58, f. D, E; Fabricius, Ent. Syst. iii. p. 89.

*Alcyoneis Asterie*, Hübner, Verz. bek. Schmett. p. 35.

*Junonia Asterie*, Moore, Catal. Lep. Mus. E. I. C. 1, p. 142, pl. 5, f. 6, 6 a; Butler, Catal. Fabr. Lep. B. M. p. 72.

*Junonia Nicobariensis et Javana*, Felder, Verh. Zool. Bot. Gesch. xii. pp. 482, 487 (1862).

Male and female. Upperside pale ferruginous: forewing with the costal and exterior borders reddish-brown; two black waved narrow lines across middle of the cell, two wider confluent lines at its end, a curved streak beyond, and a subapical streak containing two indistinct small ocelli; a prominent lower discal ocellus: hindwing with a large very prominent upper discal bipupilled ocellus, and a very indistinct small lower ocellus; both wings with two brown marginal lunular lines. Underside pale reddish-ochreous; forewing with black basal sinuous lines, a pale-bordered discal line, distinct ocelli, and marginal lines: hindwing with a subbasal black line, a straight pale-bordered discal line, a duplex upper discal ocellus, a single lower ocellus, and marginal waved lines.

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

“Found in the Plains of the Western Provinces, in open and waste land among shrubs. Habits like those of *J. Orithya*, but quicker in flight and more shy” (*Hutchison*).

“Found all the year round. Plains, and up to 4000 feet; very abundant about September to November” (*Mackwood*).

“Taken at Galle and Kandy; sits on roads and paths basking in the sun” (*Wade*).

**Genus ERGOLIS.**

*Ergolis*, Boisduval, Spéc. Gén. Lep. 1, t. 4, f. 4 (1836).

*Ariadne*, Horsfield, Desc. Catal. Lep. E. I. C. pl. 6 (1829).

Wings short; forewing elongated; costa much arched at the base, apex acute, exterior margin more or less sinuous and angled obliquely outward below the apex,

and at equal distance above posterior end, posterior margin long; cell short, broad; costal vein dilated at its base; first and second subcostal branches short, slender, first emitted at some distance before end of the cell, second from immediately above end of the cell, third from its end, trifold, the fourth branch starting from one-half its length, and fifth from one-half below the fourth; upper discocellular short, angled outward close to subcostal and concave below the angle, upper radial from the angle and lower from the end, lower discocellular very slender, long, slightly concave at its end; two upper median branches from end of the cell, lower from opposite first subcostal: hindwing broad, costal margin short, exterior margin very convex, more or less sinuous; costal vein with a short curved basal spur, widely apart from the subcostal; first subcostal emitted before end of the cell; upper discocellular short, outwardly concave, radial from its end, lower discocellular obliquely recurved; two upper median branches from end of the cell, lower branch from opposite first subcostal. Body moderate; legs slender; palpi porrect, finely pilose, second joint very long and extending half its length beyond the head, third joint half its length and somewhat cylindrical; antennæ, with a slender club.

*Type*, E. Ariadne.

**ERGOLIS MINORATA** (PLATE 23, FIG. 2, 2a).

Male and female. Upperside dark ferruginous; both wings with two short black wavy lines across base of the cell, a subbasal line, a discocellular line, a medial line, two discal lines, and a marginal line; a small white costal spot before the apex in both sexes. Underside dark purple-brown, with the black lines less distinct, and with four purple-grey intervening spaces; apical spot distinct.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{7}{8}$  inch.

“Found in low country, and hills up to 4000. Less common than *E. Taprobana*. May to June in greatest number” (*Mackwood*).

“Kandy” (*Wade*).

**ERGOLIS TAPROBANA** (PLATE 23, FIG. 1 a, b, ♂ ♀).

*Ergolis Taprobana*, Westwood, Gen. Diurn. Lep. p. 410, pl. 68, f. 4 (1851).

Male and female. Upperside dark ferruginous; both wings crossed by four or five basal black sinuous lines, a discocellular double-line, two medial, two discal, and a marginal line, the discal interspaced with indistinct black-speckled spots; the lines obsolete on costal border of hindwing; a small white costal spot near the apex of female. Underside dark purple-brown, palest on outer borders; transverse sinuous lines indistinct in male, but very distinct and with four intervening spaces suffused with chalybeate grey in the female.

Expanse, ♂  $1\frac{3}{4}$ , ♀  $2\frac{1}{8}$  inches.



“Widely distributed in low country and hills up to 6000 feet, both in forest and cultivated lands. Found all the year in the hills, variable and not so common in the plains. Flight slow, skimming, but shy, and not easy to capture” (*Hutchison*).

“Common all the year round in low country and up to 4000 feet” (*Mackwood*).

#### Genus BYBLIA.

*Byblia*, Hübner, Verz. bek. Schmett. p. 28 (1816).

*Hypanis*, Boisduval, Faun. Mad. p. 55 (1853); Westwood, Gen. D. Lep. p. 410 (1851).

Wings short: forewing elongate-triangular, costa arched at base, apex not acute, exterior margin wavy, oblique and slightly convex, posterior margin short; costal vein dilated at the base; first subcostal branch short, emitted near to end of the cell, second immediately above end of the cell, third from its end, fourth and fifth at equal distance apart from base of third; cell short; upper discocellular bent very close to subcostal and concave below the angle, the radials from its angle and end; lower discocellular very slender, slightly oblique; upper median branch from end of the cell, second emitted before its end, lower from opposite first subcostal: hindwing bluntly conical; costal margin long, exterior margin wavy; cell triangular. Veins similar to those in *Ergolis*. Body slender; palpi correct, pilose beneath, slender, second joint projecting much beyond front of head, third joint long and cylindrical; legs slender; antennæ slender, with a well-formed flat club.

#### BYBLIA ILITHYIA (PLATE 23, FIG. 3, 3a).

*Papilio Ilithyia*, Drury, Ill. Exot. Ins. ii. pl. 17, f. 1, 2 (1773); Cramer, Pap. Exot. iii. pl. 213, f. A, B, pl. 214, f. C, D.

*Byblia Ilithya*, Hübner, Verz. bek. Schmett. p. 28.

*Papilio Polinice*, Cramer, Pap. Exot. iv. pl. 375, f. G, H (1782).

*Hypanis Polinice*, Boisduval, Spéc. Gén. Lep. i. pl. 9, f. 6.

Male. Upperside bright ferruginous, with black costal and exterior marginal borders; three short streaks crossing the cell of forewing, a discocellular lobular streak joined beneath to an irregular band extending across base of the hindwing, and followed by a lower row of small spots; a submarginal band, broken below the costa of forewing, extending to the anal angle, and from which runs a longitudinal line along each vein to the outer border.

Female with the black basal markings narrower and more confluent, with suffused dusky basal interspaces, the submarginal band broader and to which is joined an inner row of lunules, the outer spaces being macular. Cilia alternated with white. Underside paler, forewing marked as above; borders of the costal streaks and a row

of spots before the apex pale yellow: hindwing with a basal and medial transverse yellow band, lined externally by a black line and internally by a row of black spots, an intervening black spot, a submarginal black band spotted with white and bordered outwardly by large yellow spots; a white marginal lunular line.

Expanse, ♂  $1\frac{7}{8}$ , ♀ 2 inches.

A very rare butterfly; a drawing sent to the author from Colombo by Mr. F. M. Mackwood.

#### Genus PARTHENOS.

*Parthenos*, Hübner, Verz. bek. Schmett. p. 38 (1816).

*Minetra*, Boisduval, Voy. Astrolabe, Lep. p. 126 (1832); Westwood, Gen. Diurn. Lep. p. 265.

Wings large, broad: forewing triangular; costal margin very slightly curved, apex rounded; exterior margin oblique, waved; posterior margin short, angle convex; costal vein extending two-thirds of the costa; first subcostal branch emitted before one-half length of the cell, second near the end, third at half length beyond the cell and curved upward and running close along second for some distance, fourth and fifth on a short foot-stalk starting from near base of third; cell long, narrow; upper discocellular short, bent inward immediately below subcostal and then straight below the angle, lower discocellular concave, directed inward, radials from angle and end of the upper; upper median branch bent convexly upward beyond the cell and then extending parallel with lower branches, middle branch emitted before end of the cell, lower branch at a considerable distance before its end; submedian recurved near its base: hindwing short, very broad, somewhat quadrate; exterior margin waved, produced outward beyond the middle; costal vein extending to the apex, with a bifid spur near its base; first subcostal branch emitted at nearly one-half before end of the cell, second bent at end of the cell; upper and lower discocellulars oblique, each concave, radial from their middle; two upper median branches from end of the cell, upper bent convexly near its base, lower from one-third before end of the cell; submedian curved near the base; internal straight, short. Body stout, abdomen short; palpi ascending, pilose beneath and above at top of second joint; second joint very long, extending to a level with vertex, third joint very short, pointed; legs slender, long; antennæ long, gradually thickened towards the tip.

#### PARTHENOS CYANEUS (PLATE 24, FIG. 1, 1a).

*Parthenos Cyaneus*, Moore, Annals of Nat. Hist. 1877, p. 46.

Male and female. Upperside greyish-blue: forewing with a discal transverse oblique interrupted series of large irregular-shaped black-bordered bluish-white

spots and two similar streaks within end of the cell, the costal border and its interspaces, two straight longitudinal basal streaks, and two outer marginal bands being black: hindwing with three black transverse basal macular bands, duplex longitudinal streaks between the veins, and two marginal lunular bands; two costal bluish-white lunular spots. Cilia alternately white. Body with black transverse bands. Underside greenish-grey, discal area darkest; the large discal spots and discoidal streaks paler, with indistinct black borders; submarginal lunular line and marginal macular band, and streaks between the veins, blackish.

Expanse, ♂ 4, ♀ 4½ inches.

Larva cylindrical, pale purplish-brown, darker beneath, with dark brown longitudinal dorsal lines and transverse white spotted lines; head and anal segment spined, other segments slightly hairy, third to twelfth segments armed with branched spines which are longest on third, fourth, eleventh, and twelfth segments. Feeds on *Modecca*. Pupa pale purplish-brown, somewhat fusiform, head pointed and cleft.

“Occurs everywhere. Plains and up to 6000 feet, in forest land, I believe all the year round. A slow flier, rather shy. Sits on large leaves with wings spread” (*Hutchison*).

“Very swift of flight, and difficult to capture” (*Mackwood*).

“Galle; Kandy. Common” (*Wade*).

#### Genus MODUZA.

*Limenitis* (part), Auctorum.

Forewing triangular; costa arched, apex produced, exterior margin oblique, scalloped, convex anteriorly; costal vein extending two-thirds of wing; first subcostal emitted at nearly one-half before end of the cell, second at equal distance between it and end of the cell, third at a little more than one-third from the cell, fourth and fifth at three-fourths beyond; upper discocellular curved very obliquely outward and bent near subcostal, lower very slender and slightly convex, the radials from angle and end of upper discocellular; cell long; middle median branch emitted at some distance before end of the cell and opposite to its upper end, lower median at more than half distance before lower end; submedian straight: hindwing broad, anterior margin short, exterior margin deeply scalloped, convex; costal vein extending to apex, with a lengthened outward-curved basal spur, its base being opposite to subcostal; first subcostal branch at half length before end of the cell, radial at equal distance from the subcostal; cell open; lower median branch emitted from opposite base of radial, two upper medians at some distance beyond; submedian and internal vein slightly curved. Body stout, short; palpi porrect, second joint long, projecting

half its length in front of head, third joint very short and pointed, very slightly pilose beneath at upper end; legs slender; antennæ with a lengthened slender club.

*Type*, M. Procris.

**MODUZA CALIDASA** (PLATE 25, FIG. 1, 1a).

*Limenitis Calidasa*, Moore, Annals of Nat. Hist. 1858, p. 48; Butler, *id.* 1866, p. 285.

Male and female. Upperside dark rufous-brown, basal area suffused with olive-brown; forewing with a discal transverse series of bluish-white irregular-shaped spots, which continue in a band across the hindwing; both wings with basal black streaks, and two submarginal series of black lunules interspaced with dull red; marginal black lunular lines bordered with pale brown. Underside: basal area bluish-grey, outer area pale greyish-purple; discal macular band as above; submarginal spots, apical interspaces, and basal streaks, prominently black and red bordered; marginal lines distinct.

Expanse, ♂  $2\frac{4}{5}$ , ♀  $2\frac{7}{8}$  inches.

Larva pale greenish-yellow or reddish, head spined, the segments armed with short spiny tubercles, and a longer dorsal divergent pair on third and fourth segments. Feeds on *Cinchona*, *Mussaenda*, &c. Pupa reddish-purple-brown, wing cases dilated; head bifid, twisted and bent outward at the tips.

“Found in the Western, Central, and Southern Provinces. Plains and hills up to 4000 feet, in forest land, from May to September and probably also at other times. Has a floating, not very rapid flight; shy; settles with wings spread on leaves” (*Hutchison*).

“Fairly numerous from February to April from 2000 feet and upwards. Found also at other times” (*Mackwood*).

“Taken at Kandy” (*Wade*).

**Genus VANESSA.**

*Vanessa*, Fabricius, Illiger's Mag. vi. p. 281 (1807).

Wings short, broad; forewing triangular; costa arched towards the apex, exterior margin oblique, scalloped, angulated outward below the apex and slightly above the posterior angle; costal vein extending to nearly two-thirds the wing; first subcostal branch emitted at one-fifth before end of the cell, second close to end, third at one-third beyond, fourth and fifth at nearly two-thirds beyond; upper discocellular short, bent outward close to subcostal and deeply concave below, lower slender, obliquely straight; radials from angle and end of upper discocellular; cell long, broad and

obliquely truncate at its end; middle median branch emitted at some distance before end of the cell, lower at about half its length: hindwing somewhat quadrangular; apex convex, exterior margin scalloped and angulated at end of upper median vein; costal vein extending to apex, with a short inwardly-bent basal spur; cell fusiform; first subcostal branch emitted at one-fourth from its base; discocellulars outwardly recurved, upper shortest, lower slender, radial from end of upper; two upper median branches from end of the cell, lower from opposite second subcostal; submedian vein much curved; internal vein short, recurved. Body robust; palpi porrect, pilose; second joint long, projecting half its length beyond front of the head, third joint short, pointed; legs slender; antennæ long, with stout rounded club. [V. Io.]

**VANESSA HARONICA** (PLATE 25, FIG. 2, 2a).

*Vanessa Haronica*, Moore, Proc. Zool. Soc. Lond. 1879, p. 137.

Male and female. Upperside deep blue-black, basal area suffused with dark sap-green; a broad greyish-blue band crossing the disc of both wings, the band continuous from the costa to the anal angle, and with a sinuous outer border; a small grey-blue lunule before the apex of forewing; a submarginal row of small blue spots, and narrow marginal line on hindwing. Underside with the basal and marginal area densely studded with black strigæ, interspersed with grey, green, and ochreous streaks; basal area bordered across the disc by a sinuous purple-black line, the disc beyond and the apex of forewing broadly clouded with ochreous; a yellow dentate spot at end of each cell.

Expanse, ♂  $2\frac{1}{2}$ , ♀ 3 inches.

Larva light red, spotted with black, the segments divided by black and purple lines, armed with eight longitudinal rows of delicate branched spines anal segment slightly humped. Feeds on *Smilax*. Pupa reddish-brown, abdominal segments tubercular, thorax angular, head produced and bifid.

“Found in hilly country from 2000 to 6000 feet. Very common on pathways or roads bordered by jungle. Occurs all the year round. Larva feeds on Wild Yam” (*Mackwood*).

“Taken in the Kottawa forest, Galle; also at Kandy” (*Wade*).

Genus PYRAMEIS.

*Pyrameis*, Hübner, Verz. bek. Schmett. p. 33 (1816); Doubleday, Gen. Diurn. Lep. p. 202.

*Amiralis*, Rennie, Cousp. p. 10 (1832).

Forewing triangular; costa slightly arched, exterior margin oblique, scalloped, slightly angular below the apex, posterior margin straight; costal vein extending to

two-thirds the margin, first and second subcostal branches emitted at equal distances close to end of the cell, third at nearly one-half length beyond, fourth and fifth at two-thirds beyond; upper discocellular short, recurved outward, lower discocellular long, slender, recurved obliquely outward, radials from near subcostal and end of upper discocellular; cell broad; middle median emitted at one-fifth before end of the cell, lower at one-half its length; submedian slightly recurved at base: hindwing short, triangular, exterior margin convex, scalloped, abdominal margin long; costal vein extending to apex, basal spur bent abruptly outward, emitted at a short distance above base of subcostal; first subcostal branch emitted at two-thirds from its base; upper discocellular convexly oblique, lower slender, very oblique, radial from end of upper; cell broad; two upper median branches from end of the cell, lower at one-third before its end and opposite second subcostal; submedian curved, internal recurved from the base. Body stout, abdomen short; palpi porrect, finely pilose, second joint long, projecting half its length beyond the head, third joint short, pointed; forelegs densely clothed with long lateral hairs, middle and hind legs slender; antennæ long, with a short thick club.

**PYRAMEIS INDICA** (PLATE 27, FIG. 2).

*Papilio Indica*, Herbst, *Naturs. Schmett.* vii. pl. 180, f. 1, 2 (1794).

*Hamadryas decora Calliroë*, Hübner, *Samml. Exot. Schmett.* (1806—16).

*Pyrameis Calliroë*, Hübner, *Verz. bek. Schmett.* p. 33 (1816).

Upperside: forewing black, with a broad medial oblique irregular red band, the lower portion of which is traversed by three irregular-shaped black spots; basal area and posterior margin golden-brown; an oblique subapical series of white quadrate spots and an outer series of small dentate spots: hindwing golden-brown, with a marginal red band, bordered by black spots and traversed by a row of black spots and outer lunular line.

Expanse 2½ inches.

“Rarely seen under 4000 feet elevation. Settles on pathways or open ground. Very swift of flight. Larva feeds on Nettle—*Urtica Neilgherriensis*” (*Mackwood*).

“Found at all times in forest land, Central Provinces, 3000 to 6000 feet. Darts about rapidly and settles on the ground. Commonest at the highest elevation” (*Hutchison*).

**PYRAMEIS CARDUI** (PLATE 27, FIG. 1, 1a).

*Papilio Cardui*, Linnæus, *Faun. Suec.* p. 276 (1761), *Syst. Nat.* i. 2, p. 774 (1767); Esper, *Schmett.* i. 1, pl. 10, f. 3; Fabricius, *Ent. Syst.* p. 104; Hübner, *Eur. Schmett.* i. f. 73, 74.

*Pyrameis Cardui*, Butler, *Catal. Fabr. Lep. B. M.* p. 77.

*Papilio Carduelis*, Cramer, *Pap. Exot.* i. pl. 26, f. C, D (1775).

Upperside: ochreous-red; forewing with the basal area ochreous-brown; an

oblique irregular-shaped angular band, the apical area and exterior border black; before the apex is a short white oblique band and a curved series of four spots; a pale marginal line; interspace at end of cell whitish in the female: hindwing with the-basal area, a confluent discal fascia, and the costal border ochreous-brown; a transverse discal row of five black spots, each spot with slightly pale outer ring, a submarginal row of lunular spots, and a marginal row of larger spots.

Expanse, ♂  $2\frac{1}{4}$ , ♀  $2\frac{3}{4}$  inches.

Larva blackish-brown, with a longitudinal pale interrupted line on each side; the segments armed with short branched spines. Feeds on *Artemisia*. Pupa tuberculate, head bluntly cleft, pale ochreous or brown, more or less spotted with yellow.

“ Found everywhere, but more plentiful in the higher districts ” (*Mackwood*).

#### Genus CETHOSIA.

*Cethosia*, Fabricius, Illiger's Mag. vi. p. 280 (1807); Doubleday, Gen. D. Lep. p. 150.

*Alazonia*, Hübner, Verz. bek. Schmett. p. 46 (1816).

Forewing triangular; costa arched, apex convex, exterior margin oblique, sinuous; costal vein extending two-thirds of the margin; first subcostal branch emitted immediately before end of the cell, second at one-third beyond, third at one-half, fourth and fifth at nearly two-thirds beyond the cell; upper discocellular shortest, bent inward contiguous to subcostal and thence deeply concave below, lower slightly concave; cell broad, truncate at the end; two upper median branches from end of the cell, lower at more than one-third before its end, upper much curved from its base; submedian recurved: hindwing broad; exterior margin convex, deeply sinuous; costal vein extending to apex, basal spur curved outward and emitted at some distance above base of subcostal; first subcostal branch emitted at one-fourth before end of the cell; discocellulars curved obliquely outward, radial from their middle; two upper median branches from end of the cell, lower from opposite second subcostal; submedian straight, internal recurved at its base. Body moderately stout; palpi porrect, finely pilose, second joint projecting one-third beyond the head, third joint short, pointed; legs slender; antennæ with a slender club.

#### CETHOSIA NIETNERI (PLATE 27, FIG. 3 a, b).

*Cethosia Nietneri*, Felder, Reise Novara, Lep. iii. p. 380, pl. 48, f. 5, 6 (1867).

Male. Upperside blue-black; forewing with the lower basal area ochreous merging to ochreous-white; some pale streaks across the cell; a bluish-white streak

beyond the cell bordered above and below by a blue line, a transverse discal series of narrow conical-lunate marks, a linear row of spots, and a marginal row of narrow sinuous marks; some black streaks on lower basal area: hindwing with the posterior basal area bluish-white; some black discoidal streaks interspaced with ochreous; an upper discal row of black diffused spots and an outer row of larger oval spots followed by a submarginal row of white lunules and a marginal row of slender white sinuous marks. Cilia white. Female duller coloured, the white markings dull greyish-blue, no ochreous on the basal area, the forewing with broad black streaks between the lower median and submedian veins. Body ochreous, thorax bluish-grey. Underside pale greenish-grey, merging to bluish-grey across the disc, bordered by a submarginal ochreous band, and a black marginal band with white sinuous marks and centre streak: forewing with black discoidal streaks, lower discal spots, transverse discal series of large conical white-bordered spots, followed by a row of white-bordered black lunular spots: hindwing with black basal streaks, large conical discal spots bordered outward by a row of white-bordered spots.

Expanse, ♂  $3\frac{1}{4}$ , ♀  $3\frac{1}{2}$  inches.

Larva cylindrical, purple-black, with red medial transverse bands, the sixth and eighth segments with a yellow band; head armed with two long stout spinous processes, the segments with two dorsal and two lateral rows of long slender finely-branched spines. Feeds on *Modecca*. Pupa ochreous-white, clouded with brown, abdominal segments tubercular, wing cases dilated and exfoliated beneath, head with two pointed processes.

“Occurs in the lower lands, but more numerous in the hilly districts. Commoner some years than others” (*Mackwood*).

“Taken at Galle and Kandy” (*Wade*).

#### Genus CYNTHIA.

*Cynthia*, Fabricius, Illiger's Mag. vi. p. 281 (1807); Doubleday, Gen. Diurn. Lep. p. 212 (1849).

*Anartia* (part), Hübner, Verz. bek. Schmett. p. 33 (1816).

Wings large, broad: forewing triangular; costa much curved towards the end, apex falcated; exterior margin oblique, concave below the apex, sinuous; posterior margin short; costal vein extending to two-thirds the margin: first subcostal branch emitted immediately before end of the cell, second at an equal distance from beyond its end, third at one-half beyond the cell, fourth and fifth close to base of third; cell long, narrow, its upper end extending to half of the wing; upper discocellular bent outward close to subcostal and then curved inward, lower long, curving very obliquely inward, radials from angle and end of upper; middle median branch emitted before



end of the cell, lower at one-half of lower length of the cell; submedian recurved: hindwing short, very broad, somewhat quadrate; exterior margin waved, angled and produced to a point at end of upper median branch; costal vein with a bifid spur near its base; first subcostal emitted at half length of upper part of the cell, the radial curving from below second subcostal; cell open; two upper median branches emitted at more than half distance beyond upper end of the cell; submedian vein slightly recurved, internal short. Body stout, abdomen short; palpi ascending, pilose, second joint long, extending to level of vertex, third joint short, pointed; antennæ long, with a short club; legs slender.

**CYNTHIA ASELA** (PLATE 26, FIG. 1 *a, b, c*).

*Cynthia Asela*, Moore, Proc. Zool. Soc. 1872, p. 558.

Male. Upperside bright ochreous-yellow, darkest on basal area and marginal border; forewing with a black medial transverse interrupted line, discoidal streaks, two streaks below the cell, two marginal sinuous lines, and a submarginal row of more or less obsolete lunate spots, the upper spot being pale centred; an indistinct darker ochreous zigzag fascia across the disc: hindwing with a black medial transverse line, an inner discal zigzag ochreous fascia bordering an outer series of spots, the one between the subcostal veins and another between the lower median veins being ocellated, the others indistinct and formed of black speckles; two marginal sinuous lines. Female dark blue-grey, brightest on hindwing, outer borders brown: forewing with a transverse discal band of broad bluish-white lunules traversed exteriorly by a sinuous line; an outer row of blackish spots and two submarginal sinuous lines: hindwing with transverse medial narrow black line outwardly bordered at the costal end by a short broad whitish sinuous-margined band; two large prominent discal ocelli with greenish inner ring; two marginal black sinuous lines.

Expanse, ♂  $3\frac{1}{2}$ , ♀ 4 inches.

Larva pale yellow, reddish-brown beneath; segments brown streaked, spiracles black; head spinous, armed with two long curved thick spinous-tubercles, the segments armed with a dorsal and two lateral rows of long slightly branched spines, the dorsal and upper lateral row arising from a red round tumid spot. Pupa pale reddish-brown, truncated at both ends; head thick, with two short points, thorax conically pointed at top; anterior abdominal segments produced thickly outward into a point hindward and forward into two lengthened processes, middle segments with a short dorsal tubercle, the two anal segments with longer basally-thickened processes.

“ Found everywhere, both in the Plains and up to 6000 feet in forest lands all

the year; most plentiful from May to October. Flight slow, very tame; a dozen at a time will alight on the ground close to you" (*Hutchison*).

#### Genus NEPTIS.

*Neptis*, Fabricius, Illiger's Mag. vi. p. 282 (1807).

*Acca* (part), Hübner, Verz. bek. Schmett. p. 44 (1816).

*Philonoma*, Billberg, Enum. Ins. p. 78 (1820).

Forewing elongate; costa much arched from the base; exterior margin short, obliquely convex, waved; posterior margin long; costal vein extending to half length of the margin; first and second subcostal branches very short, first emitted near end of the cell, second from its end, third at one-half beyond, fourth and fifth at two-thirds beyond; upper discocellular very short, bent outwards in its middle, the radials from its angle and end; cell open, broad; lower median branch from opposite discocellular, two upper median branches from some distance beyond; submedian recurved in the middle: hindwing short, anterior margin very convex in the middle, exterior margin convex, scalloped; costal vein extending to two-thirds of the margin, with a short straight basal spur, which is bent inward at tip and thrown off opposite to base of subcostal; first subcostal branch emitted very near to costal, the radial starting from the second at an equal distance beyond; cell open, broad; lower median from opposite base of radial; two upper median branches at equal distance from lower and base of cell; submedian straight, internal vein recurved. Body slender; palpi ascending, very finely pilose, second and third joints of about equal length, third joint slender and very pointed; legs slender; antennæ slender, with a gradually formed club [*N. aceris*].

#### NEPTIS VARMONA (PLATE 28, FIG. 1 a, b).

*Neptis Varmona*, Moore, Proc. Zool. Soc. Lond. 1872, p. 561.

Male and female. Upperside black: forewing with a white longitudinal streak within the cell, a lengthened triangular spot beyond it, a discal transverse curved series of seven oval spots, and a submarginal row of small lunate spots; a very indistinct pale waved line between the discal series and another along the outer margin; the discoidal streak slightly black speckled near its thickest end: hindwing with a white broad recurved medial transverse band and a discal linear series of six quadrate spots; a pale linear indistinct line intervening across the disc, and another along the outer margin. Underside ferruginous; with white markings more prominent than above and all black bordered; the hindwing having a short white streak on base of costa and another below it.

Expanse, ♂  $1\frac{3}{4}$ , ♀  $2\frac{1}{4}$  inches.

Larva pale green, with an oblique lateral pink fascia from top of anal segment; head armed with two short conical points, third and fifth and anal segment with a dorsal pair of short fleshy setose spines and two longer divergent spines on fourth segment. Feeds on *Leguminosæ*. Pupa short, pale reddish-brown, wing cases dilated laterally, head bluntly cleft.

“Widely distributed, occurring in the Hills and Plains, both in forest and cultivated land all the year. Flight slow, floating, alights on bushes with wings generally if not always open” (*Hutchison*).

“Found everywhere, and below 3000 feet in great abundance nearly all the year” (*Mackwood*).

**NEPTIS DISRUPTA** (PLATE 28, FIG. 4, 4a).

*Neptis disrupta*, Moore, *Annals of Nat. Hist.* 1877, p. 339.

Upperside black: forewing with white discoidal streak and triangular terminal spot; three spots from middle of posterior margin and a fourth smaller spot beyond the discoidal triangular spot; between this series and a submarginal series of somewhat conical spots is a discal series of very indistinct pale dusky oblique spots; an indistinct marginal narrow pale dusky line: hindwing with a white transverse discal macular band, a quadrate spot on abdominal margin near the base, and two parallel-spots and streaks on anterior margin; an outer marginal linear row of white streaks. Underside dull ferruginous, with black bordered white markings as above, and black confluent spots across the disc of both wings.

Expanse, ♀  $2\frac{1}{8}$  inches.

A very rare species. A single specimen is in the collection of Mr. F. M. Mackwood at Colombo, which was taken at Ambegamoa, in the Central Province.

**NEPTIS JUMBA** (PLATE 28, FIG. 2 a, b).

*Neptis Jumba*, Moore, *Catal. Lep. Mus. E. I. C. i.* p. 167, pl. 4a, f. 5 (1857); *Proc. Zool. Soc. Lond.* 1858, p. 7.

Male. Upperside fuliginous black: forewing with a white longitudinal streak within the cell, which is slightly notched near its end, a broad triangular spot beyond it, a discal transverse curved series of six small oval spots which are disposed in an upper, medial, and lower series of two each; three submarginal pale lunular lines, the middle line whitish: hindwing with a white medial transverse macular band, and two submarginal pale lunular lines. Female paler; markings more prominent and bluish-white, the submarginal pale lines on forewing more distinct, and the inner

lunular line on hindwing white. Underside dull ferruginous; white markings more prominent and broader, with black intervening streaks between the veins; on the hindwing is a white basal streak and a rayed broad fascia below it; between the medial band and submarginal lunules is a row of distinct black spots terminated anteriorly by a white sinuous streak.

Expanse, ♂  $2\frac{1}{4}$ , ♀  $2\frac{3}{4}$  inches.

Larva pale brownish-purple, anal segments below dark purple-brown spotted with green, and bordering an oblique line extending laterally from anal spines obliquely to base of spines on fourth segments; anterior and anal segments narrowed, the middle segments thickened laterally; head armed with two short points, two long divergent fleshy spiny tubercles on fourth segment, two short dorsal fleshy tubercles on third, fifth, and sixth segments. Feeds on *Byttneriaceæ*, &c. Pupa pale brownish-ochreous, head with two short points, thorax angulated.

“ Found in the Western and Central Provinces; plains and up to 4000 feet, in forest land, at all times, but chiefly during the S.W. Monsoon. Flight slow, heavy; settles with wings open; easily captured ” (*Hutchison*).

“ Occurs everywhere: joins in the up-country flights, February and March in fair numbers ” (*Mackwood*).

#### Genus RAHINDA.

Differs from *Neptis* (*Aceris* group) in the wings being comparatively narrower, the forewing more pointed at the apex, having the second subcostal branch emitted at some distance beyond end of the cell, and the hindwing having the costal and subcostal veins more curved, the median branches nearer at their base, the short straight basal costal spur slightly furcate.

*Type*, *R. Hordonia*, [*Stoll* Suppl. Cram. pl. 33. f. 4].\*

#### RAHINDA SINUATA (PLATE 28, FIG. 3, 3a).

*Neptis Sinuata*, Moore, Proc. Zool. Soc. Lond. 1879, p. 136.

Male and female. Upperside black: forewing with a bright ochreous irregular-bordered elongated broad streak from base to middle of the disc, beyond which is a transverse interrupted broad sinuous band, which is continued across the hind-

\* I have not adopted Mr. Scudder's suggestion that this species "may be taken as the type" of Hübner's *Pantoporia*. Hübner's first cited species under that genus belongs to his earlier *Colænis*, his second species (*Nefte*) pertains to one of the separable groups forming Westwood's genus *Athyma*, and therefore takes precedence of the third cited species (*Hordonia*) as typically representing *Pantoporia*.

wing; a narrow marginal waved line: hindwing also with a submarginal ochreous band, narrowest in the male. Underside pale ochreous, blotched with dark brown strigæ, except on the basal streak of forewing and transverse band of both wings.

Expanse, ♂  $1\frac{5}{8}$ , ♀  $1\frac{7}{8}$  inches.

“Principally a low country insect, difficult to capture perfect as it always frequents the vicinity of thick thorny Acacias. Found at all times, but mostly in March and April” (*Mackwood*).

“Western and Central Provinces; commonest in the Plains, but found up to 3000 feet, in forest land, at all times. Shy, flutters about bushes, alighting on the leaves with wings opened” (*Hutchison*).

#### Genus APATURA.

*Apatura*, Fabricius, Illiger's Mag. vi. p. 280 (1807).

*Hypolimnas et Esoptria*, Hübner, Verz. bek. Schmett. p. 45 (1816).

*Diadema*, Boisduval, Voy. Astrolabe, Lep. p. 135 (1832).

Forewing broad, triangular, costa much arched, apex convex, exterior margin slightly oblique and concave below the middle, waved; costal vein extending more than half length of the margin; first and second subcostal branches emitted at equal distances close to end of the cell, third at one-third beyond it, fourth and fifth at two-thirds beyond its end; cell very broad, truncate at the end, less than half length of the wing; upper discocellular short, bent outward close to subcostal and then curved inward, lower slender and slightly curving outward, radials from angle and end of upper discocellular; middle median emitted at a short distance before end of the cell, lower at half length of the cell; submedian nearly straight: hindwing broad, exterior margin very convex, waved; costal vein extending to the apex, with a short outwardly-curved basal spur thrown off at some distance above base of the subcostal; first subcostal emitted at one-fourth before end of the cell; upper discocellular short, curved outward, lower long and curved obliquely outward, radial from their middle; two upper median branches emitted from end of the cell, lower from opposite second subcostal; submedian vein slightly curved, internal deeply curved at the base. Body moderately stout, abdomen short; palpi porrect, second joint long, projecting half its length beyond the head, squamose beneath, second joint slightly pilose at upper and inner end, third joint short, pointed; legs slender; antennæ somewhat short, with a well-formed short club.

**APATURA BOLINA** (PLATE 30, FIG. 1 ♂, 1b, larva).

*Papilio Bolina*, Linnaeus, Mus. Ulr. p. 295 (1764); Syst. Nat. i. p. 781 (1767); Clerck, Icones, pl. 21, f. 2.  
*Diadema Bolina*, Butler, Trans. Ent. Soc. Lond. 1869, p. 278.

Male. Blackish violet-brown: forewing with a glossy blue-bordered white oblique subapical vein-divided patch, and a submarginal recurved row of minute white spots terminating on the costa in a large vein-divided spot: hindwing with a large medial discal glossy blue-bordered white patch, a discal row of five or six minute white spots, and in some specimens a pale brown or ochreous-white marginal band having a sinuous inner border, and an outer marginal lunular line. Female dark olive-brown: forewing with a few blue speckles along base of costa; a submarginal row of pale ochreous-white, and an incomplete outer row of lunate spots: hindwing with an ochreous-white marginal macular band bordered within by a row of small round spots; an outer marginal line of broken lunules. Underside of both sexes paler; male with a prominent bluish-white subapical oblique band, a submarginal row of spots and two marginal incomplete narrow lunular bands; some speckled-white spots along upper side of the cell: hindwing with a broad medial transverse bluish-white band, two lunate spots at anal angle, a discal row of spots, an inner marginal band, and an outer marginal lunular line, the inner marginal band sometimes brownish-grey: Female with marginal band as on upperside, a very indistinct oblique subapical fascia on forewing, and a transverse similar band on hindwing.

Expanse, ♂ 2 $\frac{3}{4}$ , ♀ 3 $\frac{1}{4}$  inches.

Larva purple-brown, head armed with two long erect branched spines, the segments with a dorsal row of three (two only on the anterior and posterior segments) long branched red spines, and three lateral rows of spines. Pupa thick, purple-brown, blotched with black; abdominal segments with stout pointed dorsal tubercles; head obtuse, pointed in front, thorax angular at top.

“Very common from seaboard up to 6000 feet early in the year, haunting deep cuttings through fern and brushwood lands. They are to be found in thousands and in smaller numbers all the year round. Males twice as numerous as females” (*Mackwood*).

“Has a quick darting flight; settles on the ground; rather shy” (*Hutchison*).

**APATURA JACINTHA** (PLATE 30, FIG. 1 a ♀).

*Papilio Jacintha*, Drury, Illust. Exot. Ent. ii. pl. 21, f. 1, 2 (1773), ♀; Donovan, Ins. China, pl. 33, f. 1 (1798); Fabricius, Ent. Syst. iii. 1, p. 133.  
*Papilio Avia*, Fabricius, Ent. Syst. iii. 1, p. 111 (1793), ♀.

Male and female. Of larger size than *A. Bolina*, but similarly marked; the

apical patch on forewing of male showing either a smaller white or entirely blue centre with larger glossy-blue border; the discal patch on the hindwing is also blue centred. The female has the submarginal row of spots smaller on the forewing, and also a dark blue oblique subapical fascia. Underside of both sexes alike, both having a pale fascia indicated obliquely before the apex and another across the hindwing.

Expanse, ♂  $3\frac{1}{2}$ , ♀  $3\frac{3}{4}$  inches.

This may probably be a seasonal variety of *A. Bolina*.

**APATURA MISIPPUS** (PLATE 29, FIG. 1 a, b, c).

*Papilio Misippus*, Linnaeus, Mus. Ulr. p. 264 (1764); Syst. Nat. i. 2, p. 767 (1767).

*Diadema Misippus*, Butler, Catal. Fabr. Lep. B. M. p. 97; Trans. Ent. Soc. Lond. 1869, p. 278.

*Papilio Diocippus*, Cramer, Pap. Exot. i. pl. 28, f. B, C (1775), ♀.

*Papilio Bolina*, Drury, Illust. Exot. Ent. i. pl. 14, f. 1, 2, ♂; Cramer, Pap. Exot. i. pl. 65, f. E, F, ♂.

*Papilio Inaria*, Cramer, Pap. Exot. iii. pl. 214, f. A, B (*Dimorphic* ♀).

Male. Upperside blackish violet-brown: forewing with a large oval purple-white upper discal oblique patch and a small spot near the apex: hindwing with a large circular similar-coloured patch in middle of the disc. Female red: forewing with the costal border and apical area to posterior angle blackish violet-brown; an oblique macular purple-white subapical band and a small spot near the apex; a marginal double row of broken white lunules: hindwing with a black costal spot and marginal band, the latter traversed by a row of broken white lunules. Underside. Male: ferruginous-brown, discoidal area of forewing red: forewing with prominent white oblique band, apical spot, and black-bordered discoidal spots: hindwing with a broad medial transverse white band marked by a black costal streak; a similar streak bordering its inner costal end, another at base of costal vein; a black lunular streak also crossing anal end of the band; a marginal row of small white spots, and both wings with a marginal double series of white lunules. Female paler ferruginous than upperside, the apex of forewing also ferruginous, the discoidal white spots distinct: hindwing with a narrow black costal streak and another at end of the cell.

*Dimorphic female* [Fig. 1, b]. This differs from ordinary female in the absence of the black ground colour, and the oblique white band, these parts being of the same ferruginous colour as the other parts of the wing.

Expanse, ♂ 3, ♀  $3\frac{1}{4}$  inches.

Larva purple-brown, numerous covered with minute white spots, cylindrical, thickest towards the middle; head armed with two erect rugose spines, the segments

with three dorsal rows of branched pale spines and three lateral rows of shorter spines. Feeds on *Abutilon*, *Abelmoschus*, &c. Pupa purple-brown, thick, abdominal segments tubercular, head obtusely pointed, thorax convex.

“Found at all altitudes. In the low country during September they are particularly numerous; this and the following month appears to be the chief time of appearance” (*Mackwood*).

#### Genus ACIDALIA.

*Acidalia*, Hübner, Verz. bek. Schmett. p. 31 (1816).

*Argynnis* (part), Doubleday.

Forewing triangular; costa much arched, apex rounded, exterior margin oblique, sinuous, convex below the apex; costal vein extending two-thirds of the margin; first and second subcostal branches emitted before end of the cell, third at nearly one-half beyond, fourth and fifth at two-thirds beyond; upper discocellular shortest, deeply concave, lower slightly concave, upper radial from end of the cell in a line with the subcostal, lower from middle of discocellulars; middle median branch emitted at nearly one-third before end of the cell, lower from two-thirds before its end; submedian recurved: hindwing short, broad; costal margin very convexly angular at the base; costal vein much arched from the base, the basal spur curved outward; first subcostal branch emitted at nearly one-half distance before end of the cell; discocellulars of equal length, upper curved very obliquely outward, lower slightly curved; two upper median branches from end of the cell, lower from one-third before its end; submedian and internal vein slightly recurved at the base. Body robust; palpi ascending, finely pilose, second joint long, extending to top of the head, third joint short, pointed and naked; legs slender; antennæ with a short spatular club. Sexes dissimilar.

*Type*, *A. Niphe*.

#### ACIDALIA NIPHE (PLATE 31, FIG. 2 a, b).

*Papilio Niphe*, Linnæus, Syst. Nat. i. ii. p. 785 (1767); Drury, Illust. Exot. Ent. i. pl. 6, f. 1;

Cramer, Pap. Exot. i. pl. 14, f. B—E.

*Papilio Hyperbius*, Johanssen, Amœn. Acad. vi. p. 408 (1764).

*Papilio Argynrius*, Sparrman, Amœn. Acad. vii. p. 502 (1768).

*Papilio Argynnis*, Drury, Illust. Exot. Ent. i. pl. 6, f. 2 (1773).

*Argynnis Tephnia*, Godart, Enc. Meth. ix. p. 262 (1819).

Male. Upperside bright dark ochreous; forewing with black discoidal marks, a



transverse discal zigzag series of six large spots, two submarginal rows of slightly smaller spots and a marginal dentate line: hindwing with slender black discoidal marks and transverse discal spots, a submarginal inner row of small spots and outer row of broad conical spots bordered towards anal angle by a blue line; a marginal dentate line bordered by a blue line. Female brownish-ochreous on basal area; markings broader; apical area of forewing with blue-black interspaces and obliquely crossed by a white band, the spots also bordered by blue. Underside: forewing red on basal area, pale ochreous and greenish at apex; male with two apical series of white spots; female as above; other markings as on upperside: hindwing greenish ochreous-brown, crossed by three black zigzag lines and a submarginal line broadly bordered by silvery-white; a discal row of spots centred with silvery-white.

Expanse, ♂  $2\frac{1}{2}$ , ♀  $2\frac{3}{4}$  inches.

“ Found in the hills from 2000 to 6000 feet, in the neighbourhood of waste grasslands and swamps. Larva feeds on Wild Violet ” (*Mackwood*).

#### Genus ATELLA.

*Atella*, Doubleday, Gen. Diurnal Lep. p. 165, pl. 22 (1847).

*Phalanta*, Horsfield, Desc. Catal. Lep. Mus. E. I. C. pl. 7, f. 5 (1829).

Forewing triangular; costa arched, apex rounded, exterior margin oblique, slightly waved; costal vein extending two-thirds the margin; first subcostal branch emitted immediately before end of the cell, second at some distance beyond the end, third at one-third beyond, fourth and fifth at three-fourths beyond; upper discocellular bent contiguous to subcostal and thence concave below, lower slightly concave; radials from angle and end of upper discocellular; upper median branch emitted immediately before end of the cell, lower at nearly one-half before its end; cell broad, truncate at the end: hindwing short, broad; anterior margin somewhat straight, exterior margin waved, slightly angular in the middle; costal vein extending to apex, basal spur curved outward and emitted at some distance above the base of subcostal; first subcostal emitted at one-third from end of the cell; discocellulars of equal length, obliquely concave, radial from their middle; two upper median branches from end of the cell, lower from opposite second subcostal; submedian vein straight, internal recurved. Body moderate; palpi ascending, finely pilose, second joint long, projecting to top of the head, third joint very slender and finely pointed; legs slender; antennæ with a spatular club.

**ATELLA PHALANTA** (PLATE 31, FIG. 1, 1a).

*Papilio Phalanta*, Drury, *Illustr. Exot. Ent.* i. pl. 21, fig. 1, 2 (1773).

*Atella Phalanta*, Doubleday and Westw. *Gen. D. Lep.* p. 167; Moore, *Catal. Lep. Mus. E. I. C.* i. p. 152, pl. 5, f. 7.

*Papilio Columbina*, Cramer, *Pap. Exot.* iii. pl. 238, f. A, B; iv. pl. 337, f. D, E (1782).

*Phalanta Columbina*, Horsfield, *Desc. Catal. Lep. Mus. E. I. C.* (1828), pl. 7, f. 5.

Male. Upperside bright yellowish-ochreous: forewing with two black transverse short sinuous marks within the cell, a similar darker mark at its end, a streak from the costa beyond and followed beneath by an oblique series of four spots, a discal transverse interrupted similar line and a row of round spots, a submarginal confluent double sinuous line and marginal triangular spots: hindwing with an indistinct slender black lunule within the cell, two at its end, a transverse discal interrupted lunular line, a discal row of oval spots, two slender submarginal sinuous lines, and marginal triangular spots. Female differs only in the markings being slightly larger, and the discal lunular line having a pale macular outer border. Underside very pale ochreous, suffused externally with purple; indistinctly marked as upperside.

Expanse, ♂ 2, ♀ 2½ inches.

Larva purple-brown; head armed with two delicate branched spines, each segment with two dorsal rows of similar spines and two lateral rows of shorter spines. Feeds on *Flacourtia*, *Salix*, &c. Pupa pale green, tubercular along the back.

“Generally common, but chiefly in low country” (*Mackwood*).

“Plentiful at Colombo, in gardens during the S.W. Monsoon, and again towards the end of the year. Flies quickly and alights on bushes” (*Hutchison*).

“Taken at Kandy” (*Wade*).

**Genus CIRROCHROA.**

*Cirrochroa*, Doubleday, *Gen. Diurnal Lep.* p. 157, pl. 21, f. 2 (1847).

Wings ample, short: forewing triangular, costa arched, apex slightly truncate or convex; exterior margin oblique, slightly concave below the apex, uneven; costal vein extending to half length of the margin; first subcostal branch emitted at some distance before end of the cell, second close to its end, third at half length beyond the cell, fourth and fifth at one-fifth from the third; discocellulars inclined obliquely inward, upper slightly bent near to subcostal and very deeply concave below, lower slightly oblique, radials from angle and end of the upper; cell short, very broad; two upper median branches emitted at a short distance beyond end of the cell, lower

median at one-third before its end; submedian recurved: hindwing broad; apex slightly angular, exterior margin waved, convex hindward, abdominal margin long; costal vein extending to apex, basal spur short, slightly curved; first subcostal branch emitted at nearly half length of the cell; cell open; median branches wide apart, lower emitted opposite to base of radial; submedian curved; internal short, much curved at the base. Body somewhat slender; palpi ascending, finely pilose; second joint reaching to top of the head, third joint short, slender, almost cylindrical; legs slender; antennæ with a gradually formed slender club.

*Type*, C. Aoris.

**CIRROCHROA THAIS** (PLATE 32, FIG. 2, 2a).

*Papilio Thais*, Fabricius, Mant. Ins. p. 64 (1787); Ent. Syst. iii. p. 149 (1793).

*Cirrochroa Thais*, Butler, Catal. Fabr. Lep. B. M. p. 116; Moore, Proc. Zool. Soc. Lond. 1872, p. 557.

Male and female. Upperside pale ferruginous, glossed with green at the base: forewing with a prominent medial transverse black line, which is oblique and zigzag in front of the cell and lunular hindward; exterior margin broadly ferruginous-black and traversed by a ferruginous sinuous line; a dusky streak lining the discocellular vein: hindwing with a large quadrate white spot on anterior margin, from which proceeds a medial transverse black lunular line; a discal row of six small black spots, two submarginal lunular lines and a third outer line. Underside pale olive-brown in male, ferruginous-brown in the female; with a transverse medial irregularly dentated purple-white glossy band on both wings, the outer margin of the band being straight and the dentations disappearing towards anal angle of hindwing; a transverse row of black spots on hindwing smaller than on the upperside; marginal lunular lines indistinct and suffused with glaucous-purple.

Expanse, ♂  $2\frac{3}{4}$ , ♀  $2\frac{1}{4}$  inches.

“Taken at Galle and Kandy” (*Wade*).

**CIRROCHROA LANKA** (PLATE 32, FIG. 4, 4a).

*Cirrochroa Lanka*, Moore, Proc. Zool. Soc. Lond. 1872, p. 557.

Male. Upperside bright ferruginous: forewing with a medial transverse black line, which is oblique in front of the cell and nearly obsolete hindward; a marginal black band traversed by an inner row of ferruginous dentate lunules: hindwing with the quadrate white spot on the anterior margin large, the medial transverse line from it faintly defined; the discal row of black spots, inner submarginal line indistinct, outer lunular line and marginal line prominent. Underside dull ferruginous, some-

what fulvous at the base, glossed with purple-grey; a transverse medial broad straight purple-white band; indistinct lunules on outer margin of wings with purple-grey borders; discal black spots on hindwing prominent.

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

“Western, Central, and Southern Provinces; plains and up to 6000 feet, in forests; flight moderately rapid, settles on the ground and on bushes. Easily captured” (*Hutchison*).

**CIRROCHROA COGNATA** (PLATE 32, FIG. 3, *a, b*).

Upperside differs from *C. Thais* in the forewing being shorter, the apex broader and not falcated; medial sinuous line indistinct, the marginal black band narrower and traversed by a row of dentate spots: hindwing with a small white costal spot; the discal transverse markings similar but the outer marginal line blacker. Underside dark ferruginous, the medial transverse band narrower, less defined, and in some specimens nearly obsolete.

Expanse 2 to  $2\frac{1}{2}$  inches.

Larva pale purplish-brown, yellowish beneath; head yellow, spotted in front with black; with two dorsal rows of long delicate branched spines and two lateral rows of shorter spines, a similar spine projecting on each side of the head from second segment. Pupa pale bluish-purple, spotted with black, with lengthened dorsal tubercles and two longer tubercular processes projecting from front of thorax; head cleft.

“A low country insect, found chiefly in the interior” (*Mackwood*).

**Genus CUPHA.**

*Cupha*, Billberg, Enum. Ins. p. 79 (1820).

*Messaras*, Doubleday, Gen. Diurnal Lep. p. 163 (1848).

Wings short, broad: forewing with the costa much arched from the base, apex somewhat pointed, exterior margin slightly oblique and waved in the middle; costal vein extending to half length of the margin; first and second branches of subcostal very short, first emitted at end of the cell, second at one-sixth beyond end of the cell, third at one-third from its end, fourth and fifth at two-thirds beyond; upper discocellular bent close to the subcostal and deeply concave below, lower very slender and slightly concave, radials from angle and end of the upper; cell very short and broad; two upper median branches emitted at some distance beyond end of the cell, lower at one-third before its end; submedian nearly straight; hindwing broadly oval,

exterior margin very convex, waved; costal vein extending to apex, basal spur curved outward; first subcostal branch emitted at one-third before end of the cell; cell open; median branches wide apart; submedian and internal veins straight. Body short, somewhat slender; palpi ascending, finely pilose; second joint long, extending half its length beyond the head, third joint short, slender, pointed; legs slender; antennæ with a gradually formed club.

*Type*, C. Erymanthis.

**CUPHA PLACIDA** (PLATE 32, FIG. 1).

Male and female. Upperside dark yellowish-ochreous, darkest and tinged with olive on basal areas: forewing with a black apical band having a waved curved inner border extending from middle of the costa to posterior angle; a transverse narrow black zigzag line dividing the basal and discal areas; two lunate marks within the cell and three spots on lower discal area: hindwing with a transverse subbasal black zigzag line, a discal whitish-bordered macular band and outer row of small oval spots, two submarginal lunular darker lines and an outer marginal line. Underside pale ochreous, with very pale markings, as above, the discal band composed of white lunules and traversing both wings.

Expanse, ♂  $1\frac{0}{10}$ , ♀  $1\frac{1}{8}$  inches.

"A low country insect. Found sometimes in the hilly districts. Numerous only about April and May (*Mackwood*).

"Galle and Kandy" (*Wade*).

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Subfamily ACRÆINÆ.

Lower discocellular vein of hindwing perfect. Palpi thick and scantily clothed with hair. Abdomen of female furnished with a corneous plate or pouch.

Larva studded with branched spines.

Genus TELCHINIA.

*Telchinia*, Hübner, Verz. bek. Schmett. p. 27 (1816); Doubleday, Gen. Diurnal Lep. p. 142.

Forewing narrow, triangular; anterior margin slightly arched towards the end, apex scarcely rounded; exterior margin oblique, slightly convex; posterior margin short; costal vein extending two-thirds the margin; first subcostal branch emitted at a short distance before end of the cell, second, third, and fourth at about equal

distances apart beyond end of the cell; cell long; discocellulars very oblique, upper bent near subcostal, concave below, lower straight, radials from the angle and end of upper discocellular; middle median branch emitted at a short distance before end of the cell, lower at one-half length of the cell; submedian slightly recurved: hindwing small, short, broadly ovate; costal margin straight, exterior margin convex; costal vein extending to apex, basal spur slightly bent outward at its end; first subcostal branch emitted at four-fifths from the base; cell long; discocellulars very oblique, upper concave, lower straight, radial from their middle; middle median branch emitted at a short distance before end of the cell, lower branch from more than one-half length of the cell; submedian and internal vein slightly recurved. Body slender, abdomen long, last segment of female furnished with a corneous appendage; palpi ascending, stout, finely pilose, second joint projecting slightly beyond the head, third joint very short; legs slender, anterior tarsi of male clothed with short spiny scales, fore tarsi of female armed with a pair of spines on each joint; antennæ abruptly clavate.

**TELCHINIA VIOLÆ** (PLATE 33, FIG. 1 *a, b*)

*Papilio Viola*, Fabricius, Syst. Ent. p. 460 (1775); Ent. Syst. iii. p. 164.

*Telchinia Viola*, Doubleday, Gen. D. Lep. p. 142; Moore, Catal. Lep. Mus. E. I. C. i. p. 135, pl. 5, f. 1, 1a.

*Papilio Cephea*, Cramer, Pap. Exot. iii. pl. 298, f. D, E (1782).

*Telchinia Cephea*, Hübner, Verz. bek. Schmett. p. 27.

Male. Upperside ochreous-red: forewing with a small black spot and an oblique streak within the cell, a large discocellular streak, an upper discal oblique series of four small spots, a single spot below these, and another between the median and submedian veins; costal margin black speckled, exterior margin and up the veins for a short distance, black: hindwing with a small black spot at end of the cell, another on the costal border, and a black marginal band traversed by a row of pale yellow spots. Female paler, with the markings and marginal band broader, the hindwing also having two black spots in the cell, two on the discocellular vein, and a curved discal series beyond. Underside. Male glossy red; black spots and marginal border of forewing as above, the latter bordered inwardly with yellowish-white: hindwing with a basal cluster of five black-ringed white spots, two costal black spots, three discoidal and a discal outer series of smaller spots; the marginal band with larger yellowish-white spots and inner border. Female duller coloured: hindwing pale yellowish-ochreous, marked as above, the hindwing having also a basal cluster of ochreous-white black-ringed spots, and the marginal band with larger spots.

Expanse, ♂ 2, ♀ 2½ inches.

Larva pale purple-brown; the segments armed with six rows of lengthened branched-spines. Feeds on *Cucurbitaceæ*. Pupa reddish-white, streaked with black, the abdominal streaks spotted with red.

“Found generally in the plains and up to about 4000 feet. It is about all through the year” (*Mackwood*).

“Common at Kandy” (*Wade*).

### Family LEMONIIDÆ.

*Erycinidæ*, Swainson, Phil. Mag. 1827, p. 187; Westwood, Gen. D. Lep. p. 415.

Front legs in male rudimentary, female with six perfect legs.

### Subfamily LIBYTHÆINÆ.

Palpi very long, contiguous throughout their length. Pupa suspended freely by the tail.

### Genus LIBYTHEA.

*Libythea*, Fabricius, Illiger's Mag. vi. p. 284 (1807); Westwood and Doubleday, Gen. of Diurnal Lep. p. 412.

*Hecærge*, Ochsenheimer, Schmett. Eur. iv. p. 32 (1816); Hübner, Verz. bek. Schmett. p. 100.

*Chilea*, Billberg, Enum. Ins. p. 79 (1820).

Forewing with the costal margin arched, apex acute, exterior margin strongly angulated below the apex, oblique and slightly waved to lower angle, posterior margin short; costal vein extending to half length of the margin; first and second subcostal branches short, first emitted at about one-third before end of the cell, second at half distance between it and the end, third and fourth at a third distance each beyond, fourth terminating at the apex; discocellulars concave, upper bent close to subcostal, radial from its angle, lower radial from their middle and terminating at the angle below the apex; middle median branch emitted at some distance before lower end of the cell, lower branch from beyond one-third before its end; submedian recurved: hindwing short, lobed at the base and convex in the middle, apex oblique, exterior margin scalloped, abdominal margin long. Body moderately robust, thorax woolly, head tufted in front; palpi much elongated, porrect, thickly pilose, closely united, second joint long, oval, third joint of equal length, slender; legs somewhat

short and stout, fore tarsi of female furnished with claws and their appendages as in tarsi of hind legs; antennæ with a gradually-thickened obtuse club.

**LIBYTHEA RAMA** (PLATE 33, FIG. 2, 2a).

*Libythea Rama*, Moore, Proc. Zool. Soc. Lond. 1872, p. 556.

Upperside dark brown: forewing with an ochreous narrow streak extending along lower part of the cell and joined to a broader discal streak beyond, an upper and lower subapical geminated spot: hindwing with a transverse, medial discal, narrow straight ochreous streak. Underside pale brown, apical border of forewing and the hindwing transversely fasciated with purple-grey, and speckled with dark brown; discoidal streak on forewing broader and dull pale yellow, the apical spots whitish.

Expanse 2 inches.

“Central Provinces; hills 4000 to 6000 feet, in forest lands during S.W. Monsoon, May to October. Darts about and settles on the ground. Shy and not very easy to capture” (*Hutchison*).

“Plentiful about 3500 feet and upwards, on the roads and banks of same in vicinity of jungle” (*Mackwood*).

“Kandy and Dickoya” (*Wade*).

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Subfamily ERYCININÆ.

Pupa recumbent on a leaf or other object, and secured by the tail and a girdle across the middle.

Genus ABISARA.

*Abisara*, Felder, Wien. Entom. Monats. iv. p. 396 (1860).

Forewing triangular; costal margin arched, apex slightly pointed, exterior margin oblique, straight; costal vein extending nearly two-thirds the margin; first and second subcostal branches very short, emitted near together close before end of the cell, third at one-fourth beyond, fourth and fifth at one-half beyond, third and fourth terminating on costa before reaching the apex; cell very broad; discocellulars of equal length, concave, upper radial from end of the cell, lower from middle of discocellulars; middle median branch emitted at a short distance before end of the cell, lower at half length of the cell; submedian slightly recurved: hindwing short, broad, costal margin very convex at the base and thence oblique; exterior margin bluntly angled at end of the median vein, abdominal margin long; costal vein very short, with a basal outwardly curved spur; subcostal branches emitted beyond end of



the cell; cell long, narrow; upper discocellular long, very oblique, lower less oblique, straight, of equal length; middle median branch emitted before end of the cell, lower at some distance and opposite to half length of upper discocellular; submedian straight, internal vein recurved. Body small; palpi small, porrect, not projecting beyond the eyes, slender, pilose, second joint very long, third joint short, pointed; legs slender; antennæ with a well-formed spatulate club.

**ABISARA PRUNOSA** (PLATE 33, FIG. 3 a, b, ♂, ♀).

*Abisara Prunosa*, Moore, Proc. Zool. Soc. Lond. 1879, p. 137.

Male. Upperside deep brownish-purple, with slightly paler transverse discal fasciæ: hindwing with two subapical and two smaller subanal pale-bordered conical black spots margined outwardly by a delicate white line, and two intervening pale conical marks. Female duller coloured, the discal fasciæ and a marginal line paler, and more distinct; conical spots on the hindwing prominent. Underside paler, similar in tint and markings to upper side of female.

Expanse  $1\frac{1}{4}$  to  $1\frac{3}{4}$  inch.

Larva light green; vermiform, with numerous dorsal and lateral short fine hairs. Pupa light green, dorsally black spotted, hairy. Feeds on *Ardisia*.

“Western and Central Provinces, in forest land, nearly all the year; common. Has a rapid darting flight; settles on the underside of leaves with wings open” (*Hutchison*).

“Plentiful amongst the undergrowth of open jungle, or by roadsides. Low country and up to about 4000 feet (*Mackwood*).

“Galle and Kandy” (*Wade*).

**Family LYCÆNIDÆ.**

Six perfect legs in female, four in male, the anterior tarsi wanting one or both of the tarsal claws, but densely spined beneath. Pupa suspended by the tail and a girdle across the middle.

“These are perfect gems of beauty, mostly of small size, and including, probably, the smallest known butterflies. Their colours are most commonly azure-blue, purple, or copper. They enliven by their numbers and perpetual movements the hedges and flower-gardens of Ceylon. The different kinds are very numerous, though to a careless observer many quite distinct species appear alike, and it requires close inspection to distinguish them from one another. The larvæ are of small size, and

feed upon the very tender young leaves of the plants they prefer; they are more or less gregarious when in their early stage of growth.

“It is difficult to realize that the larvæ of some species of these lovely Lycænidæ, such as *Amblypodia*, &c., are carnivorous or even cannibal in their habits, and do not hesitate to eat their own brethren of the same brood, when any of the latter are commencing their change into the inactive chrysalis state, with their consequent inability to protect themselves from their voracious kindred, who devour them with avidity. Nature, however, finds a protection for these said helpless individuals, in the instinct of a species of ant (*Formica smaragdina*,\* Fabr.), which, finding a substance most palatable to it, secreted naturally from a glandular defined spot upon the bodies of these helpless larvæ, takes possession of them as ‘cows,’ surrounding each separate one and the leaf on which it had been feeding with a few silken strands of its web, protecting them jealously, and attacking most fiercely any living thing intruding upon them.” (*Note by Dr. Thwaites.*)

#### Genus SPALGIS.

*Spalgis*, Moore, Proc. Zool. Soc. Lond. 1879, p. 137.

Wings small, exterior margins even. Male: forewing triangular, costa scarcely arched at the base, apex somewhat acute, exterior margin oblique, almost straight, posterior margin rather long; costal vein at some distance from the margin, extending to half its length; first and second subcostal branches short, first emitted at nearly one-half before end of the cell, second at one-fourth before the end, third at one-third beyond the cell, fourth terminating at the apex, fifth (or upper radial) from end of the cell; discocellulars slender, almost straight, the radial from their middle; cell long, extending fully to half the wing; middle median branch emitted at a short distance before end of the cell, lower at one-half before its end; submedian straight: hindwing ovate, short; costal vein very convex from the base, extending to the apex, first subcostal branch emitted at one-fourth before end of the cell; discocellulars very slender, the radial from their middle; two upper median branches from end of the cell, lower at half distance before the end; submedian vein straight, internal recurved. Female: forewing less triangular, exterior margin convex, posterior margin long; hindwing convex externally. Body slender, abdomen long; palpi long, slender, clothed with very short hairy scales, second joint projecting half its length beyond the head, third joint half its length; legs short, femora delicately pilose beneath, fore tarsi of male minutely spinous at the side; antennæ short, with a thickened club.

\* “This ant forms its tough silken nest by spinning together with its own web several young growing terminal branches of trees; and in this nest are found a few bright green females of the ant and numerous examples of its red working neuters.” (*Dr. Thwaites.*)

**SPALGIS EPIUS** (PLATE 34, FIG. 1, 1a, ♂ ♀, 1b, larva).

*Lucia Epius*, Westwood, Genera of Diurnal Lepidoptera, p. 502, pl. 76, fig. 5, ♀ (1852).

*Spalgis Epius*, Moore, Proc. Zool. Soc. London, 1879, p. 137.

Male. Upperside violet-brown: forewing with a white quadrate spot from end of the cell. Underside greyish-white, with indistinct pale brown oval basal marks and several outer transverse interrupted zigzag lines. Female paler: forewing with a broader diffused white discal space, and a blackish discocellular lunular mark. Cilia whitish. Underside whiter; markings bolder. Antennæ reddish, with black and white basal articulations; legs banded with brown.

Expanse, ♂  $\frac{1}{2}$ , ♀ 1 inch.

Larva pale green, the segments armed with elongated divergent pointed processes. Pupa small, dilated in the middle. Feeds on *Euphorbiaceæ*.

“Central Provinces; about flower-gardens, at 3000 feet elevation, during February. Very local” (*Hutchison*).

“Kandy. Kottawa forest, Galle. Very common and easy to capture. Likes shady places and high jungle” (*Wade*).

Genus **MEGISBA**.

Allied to *Pithecopis*. Differs in the triangular form of the forewing; first subcostal branch emitted at nearly one-half length before end of the cell, second at one-third before its end, third at one-eighth, the fourth at one-half beyond and terminating before the apex; discocellulars very slender; middle median branch emitted immediately before end of the cell, lower at one-half before its end; submedian straight: hindwing convex at the apex, oblique towards anal angle, abdominal margin long; first subcostal branch emitted at one-fifth before end of the cell; two upper median branches from a short distance beyond end of the cell. Abdomen long, reaching to anal angle; antennæ with a shorter spatular club.

**MEGISBA THWAITESI** (PLATE 34, FIG. 3, 3a, b, ♂ ♀ and larva).

Male and female. Upperside dark violet-brown: forewing with an oblique lower discal white-speckled patch. Cilia whitish. Underside bluish-white: forewing with four blackish spots on middle of costal border, one within the cell, a brown discocellular streak, an outer discal transverse curved series of five brown streaks, a marginal row of blackish spots bordered inwardly by a narrow sinuous line and outwardly by a linear marginal line: hindwing with three black subbasal transverse spots, one on middle of abdominal margin and a larger one on costal border near the apex; a narrow brown discocellular streak and a discal series of irregular-shaped spots; a marginal row of blackish spots bordered within by a sinuous line and outwardly by a

linear marginal line, the third spot from anal angle large and blackest. Palpi black above; legs with prominent black bands; antennæ black with white annular bands.

Expanse, ♂  $\frac{10}{16}$ , ♀ 1 inch.

Larva light green, vermiform, middle segments swollen. Pupa thick, blunt at the ends. Feeds on *Sapindaceæ*.

“Kandy. Very common and easy to capture” (*Wade*).

#### Genus PITHECOPS.

*Pithecopis*, Horsfield, Catal. Lep. Mus. East India Company, p. 66 (1828).

Wings small, very broad: forewing elliptical; much arched from the base, exterior margin convex, posterior margin of equal length with anterior; costal vein extending to less than half length of the margin; subcostal branches very short, first branch emitted at one-half before end of the cell, second at one-third before its end, third at one-sixth before its end, fourth at one-half beyond the cell and terminating on costa before the apex, fifth from end of the cell; discocellulars very slender, upper slightly longest, nearly straight; cell long, broad; middle median branch emitted at one-sixth before end of the cell, lower at nearly one-half before its end; submedian straight: hindwing oval; exterior margin very convex; costal vein arched at base, extending to apex; first subcostal branch emitted at one-fourth before end of the cell; discocellulars very slender, upper curved outward, lower curved inward; cell broad; two upper median branches emitted from end of the cell, lower at one-third before its end, submedian and internal vein straight. Body slender; palpi porrect, slender, clothed with short lax scales, second joint laterally compressed, long, projecting half its length beyond the head, third joint about half its length, longest in the female, slightly clavate at tip in the male and cylindrical in the female; legs slender, fore tarsi composed of five joints, laterally spined, and in the male with a terminal bifid claw and in the female with a blunt claw; antennæ with a well-formed lengthened spatular club.

#### PITHECOPS DHARMA (PLATE 34, FIG. 4).

Male. Upperside vinous-brown: forewing with the middle of the discal area slightly white speckled, costal edge white streaked: hindwing with the outer upper area broadly white; a marginal row of brown oval spots, each encircled by a white border; cilia white. Female more intense brown, the discal white-speckled patch on forewing more distinct: hindwing entirely brown. Underside bluish-white: forewing with brown streaks on edge of costa, a brown curved streak at end of the cell, an outer discal transverse curved row of six short waved streaks, and a marginal row of narrow spots, bordered within by a slender line and outwardly by the marginal line:

hindwing with three transverse subbasal black spots, another on middle of abdominal margin, and a larger one on costal margin near the apex; a brown discocellular streak, a discal zigzag series of six narrow brown streaks, and a marginal row of small blackish spots bordered inwardly by a narrow brown line and outwardly by the marginal line. Markings most prominent in the female. Body brown, white beneath; palpi black above; legs with black bands; antennæ black, with white annulations.

Expanse, ♂  $\frac{6}{8}$ , ♀ 1 inch.

“Eastern Province; in beds of dry rivers in forest land. Taken in August on road to Trincomalee in damp places in beds of streams in abundance” (*Hutchison*).

“Kandy” (*Wade*).

#### Genus CURETIS.

*Curetis*, Hübner, Verz. bek. Schmett. p. 102 (1816).

*Phadra*, Horsfield, Catal. Lep. Mus. E. I. C. p. 123 (1829).

*Anops*, Boisduval, Spec. Gén. Léop. pl. 7, C (1836); Westwood, Gen. D. Lep. p. 473.

Wings broad: forewing triangular; costa much arched at the base; apical and posterior angles pointed, more or less acute; exterior margin slightly oblique; posterior margin long; costal vein short, extending to half length of the margin; first subcostal branch emitted at half length before end of the cell, second at one-fourth before its end, third and fourth at half length beyond, fifth (or upper radial) at a short distance before end of the cell; discocellulars very slender, of nearly equal length, slightly concave, radial from their middle; cell large, extending to more than half length of the wing; middle median branch emitted before end of the cell, lower at one-third before its end; submedian straight: hindwing short, bluntly oval, anterior margin very convex, apex rounded, exterior margin convexly oblique (or more or less angular in the middle and acute at anal angle), abdominal margin long; costal vein very convex from the base, extending to apex; first subcostal branch emitted at one-fourth before end of the cell; discocellulars very slender, slightly concave, radial from their middle; cell broad, long; two upper median branches emitted from end of the cell, lower at one-third before its end; submedian vein straight, internal long, recurved. Body moderately stout; abdomen short; palpi porrect, clothed with fine adpressed scales, second joint long, projecting nearly half its length beyond the head, third joint slender, flattened, about one-fourth length of the second in the male and one-half in the female; eyes hairy; legs short, thick, clothed with adpressed scales, fore tarsi of male composed of a single joint, with an obtuse claw at the tip and lateral spines beneath, fore tarsi of female composed of five joints, with two minute claws at tip; antennæ short, gradually thickening into a long club.

**CURETIS THETYS** (PLATE 34, FIG. 2, 2a, ♂ ♀).

*Papilio Thetys*, Drury, Ill. Exot. Ent. ii. pl. 9, f. 3, 4 (1773), ♀; Cramer, Pap. Exot. iii. pl. 238, f. D, ♀.

*Papilio Æsopus*, Fabricius, Spec. Ins. ii. p. 125 (1781), ♀.

*Papilio Phædrus*, Fabricius, Spec. Ins. ii. p. 125 (1781), ♂.

*Anops Phædrus et Æsopus*, Butler, Catal. Fabrician Lep. B. M. p. 160.

*Papilio Cinyra*, Cramer, Pap. Exot. iii. pl. 238, f. C (1782), ♂.

*Phædra terricola*, Horsfield, Catal. Lep. Mus. E. I. C. p. 124 (1829).

Male. Upperside glossy cupreous-red: forewing with a narrow black costal and exterior marginal band, the inner border of which is jagged on the veins and acute at the apex: hindwing with a black costal border and very narrow marginal band; abdominal border cupreous-brown. Body cupreous-brown, thorax and head tinged with olive-brown. Underside glossy-white, with a very faintly indicated dusky lunular transverse discal fascia, and a marginal row of more distinct black speckles. Female. Upperside dark brown: forewing with a broad white medial discal patch: hindwing with a narrow white irregular curved upper discal band. Cilia white. Underside as in male. Legs with red band above; palpi black above; antennæ black, tipped with red.

Expanse  $1\frac{2}{8}$  inch.

“Eastern Province between Kandy and Trincomalee in forest land. Taken in August whilst settling on the ground” (*Hutchison*).

“Kandy. Rather scarce” (*Wade*).

**Genus CYANIRIS.**

*Cyaniris*, Dalman, Vetensk. Acad. Handl. xxxvii. 63, 94 (1816).

Forewing elongated, triangular; exterior margin slightly oblique and convex, posterior margin long; costal vein extending to half length of the margin; first subcostal branch emitted at nearly one-half before end of the cell, free from costal; second at one-third, the third at about one-eighth before end of the cell, fourth at one-half from the third and terminating at the apex, fifth from end of the cell; discocellulars slightly concave, radial from their middle; cell long, somewhat narrow, extending to more than half the wing; middle median branch emitted about one-seventh before end of the cell, lower at nearly one-half before the end; submedian slightly recurved: hindwing oval, apex very convex; costal vein curved at the base, extending to apex; first subcostal emitted at one-fourth before end of the cell; upper discocellular shortest, outwardly oblique, lower straight, erect, radial from their middle; cell rather short; middle median branch emitted from immediately before end of the cell, lower at one-third before the end; submedian and internal veins straight. Body

slender, short; palpi porrect; second joint pilose beneath, projecting half beyond the head, third joint slender and about half its length, naked; legs slender, femora slightly pilose beneath; antennæ with a lengthened spatular club.

*Type*, C. Argiolus.

**CYANIRIS AKASA** (PLATE 34, FIG. 5, ♂).

*Polyommatus Akasa*, Horsfield, Catal. Lep. Mus. East India Company, p. 67, pl. 1, fig. 1, 1a, ♂ (1828).

Male. Upperside white: forewing with the base, costal and exterior border to near posterior angle broadly dusky-brown, and a very faintly indicated slender discocellular streak: hindwing with the base of costal border brown, base of abdominal border brownish-grey, a delicate brown outer marginal line and a row of very small indistinct spots. Female: forewing with the brown marginal band diffused along the posterior border, where it is slightly glossed with blue, the white disc also being blue-glossed: hindwing with the brown costal band and exterior marginal line and spots more distinct, the abdominal border also more distinctly glossed with blue. Underside white: forewing with a slender blackish discocellular streak, a curved discal series of five (or six) waved short linear streaks, and a marginal row of indistinct small spots: hindwing with three subbasal black spots, and a discal curved series of irregular-shaped spots. Legs with black bands; palpi black above and black fringed beneath.

Expanse, ♂  $1\frac{1}{2}$ , ♀  $1\frac{3}{4}$  inch.

**CYANIRIS LAVENDULARIS** (PLATE 34, FIG. 6, 6a, 7, ♂ ♀).

*Polyommatus lavendularis*, Moore, Annals of Nat. Hist. 1877, p. 341.

Male. Upperside dark lavender-blue, with an extremely narrow black outer marginal border. Female paler, and of a purple lavender-blue: forewing with the base of the costa and an outer band black: hindwing with black anterior border and marginal row of prominent pale-bordered black spots. Cilia white, with inner black border. Underside greyish-white: forewing with dusky-black streak at end of the cell, a discal series of oblique spots, and marginal row of small spots enclosed by a dentated line: hindwing with three black subbasal spots, some specimens with a smaller spot at base of subcostal and another at base of lower median vein, a curved series of seven discal spots, and a marginal row of spots enclosed by a dentate line.

Expanse, ♂  $1\frac{1}{10}$ , ♀  $1\frac{3}{10}$  inch.

Allied to *P. Puspa*, Horsf.; differs from Java specimens above in its uniform colour and narrower black borders.

“Eastern Province. Forests and Plains. Taken in August” (*Hutchison*).

**CYANIRIS SINGALENSIS** (PLATE 35, FIG. 1, 1a).

*Lycæna Singalensis*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 282; Moore, Annals of Nat. Hist. 1877, p. 342.

Male. Upperside light blue. Cilia white, with blackish inner line. Underside white: forewing with a dusky black streak at end of the cell, a submarginal series of five slightly sinuous spots, a spot near the costa, and a marginal row of small spots enclosed by an inner row of sinuous lunules: hindwing with three darker subbasal spots, a spot on costa beyond middle, a spot within and a slender streak at end of the cell, a discal curved series of five irregular-shaped spots, a curved streak above anal angle, and marginal row of small angled spots enclosed by sinuous lunules. Tibiæ and tarsi black streaked above. Female with the anterior and exterior borders pale brown, the border on hindwing with a row of pale blue sinuous marks.

Expanse, ♂  $1\frac{4}{10}$ , ♀  $1\frac{2}{10}$  inch.

“Occurs at Kandy” (*Wade*).

**CYANIRIS LANKA** (PLATE 35, FIG. 2, 2a).

*Polyommatus Lanka*, Moore, Annals of Nat. Hist. 1877, p. 342.

Male. Upperside very dark lavender-blue. Cilia white, with blackish inner line. Underside white; forewing with a grey-brown streak at end of the cell, a submarginal transverse linear row of four linear spots, a spot near the costa, and a marginal row of dentate spots: hindwing with two equidistant grey-brown spots on anterior border, a spot within and a slender streak at end of the cell, a discal curved series of five spots, two lunate marks on abdominal border, and an outer marginal row of dentate spots. Tibiæ and tarsi with black bands; palpi black above.

Expanse  $1\frac{3}{10}$  inch.

“Central Province. Hills, 3000 to 6000 feet, in forest land; at all times. Gregarious. Settles by hundreds in damp spots on the roads” (*Hutchison*).

“Kandy” (*Wade*).

Genus **CHILADES**.

Forewing elongated, triangular in the female; costal vein extending to nearly half length of the margin; first subcostal branch free from costal but running along its end, emitted beyond one-half before end of the cell, second at one-third, the third



at one-sixth, fourth at one-half from third and terminating before the apex, fifth from end of the cell; discocellulars slightly oblique, nearly straight, radial from their middle; cell long, extending to more than half the wing; middle median emitted at one-sixth before end of the cell, lower beyond one-half before the end; submedian straight: hindwing oval; exterior margin very convex; no tail; costal vein arched at base, extending to apex; first subcostal emitted at one-third before end of the cell; upper discocellular oblique, lower erect, radial from their middle; cell short, broad; two upper median branches emitted from end of the cell, lower at one-half before the end; submedian and internal veins straight. Body small, short; palpi slender, porrect, second joint long, projecting two-thirds beyond the head, attenuated at its tip, clothed with long adpressed scales, third joint very long, naked; legs slender; antennæ with a stout grooved club.

*Type*, C. Lais.

**CHILADES VARUNANA** (PLATE 35, FIG. 3).

*Polyommatus Varunana*, Moore, Proc. Zool. Soc. Lond. 1865, p. 772, pl. 41, fig. 6.

Male. Upperside pale purple-blue; exterior margins with a slight pale brown border: hindwing with two or three ill-defined pale-bordered black marginal spots from anal angle. Underside lilac-grey: forewing with a brown, white-bordered spot closing the cell, a transverse row of blackish, white-bordered discal spots, and a double row of marginal white-bordered lunules: hindwing with three transverse subbasal, white-bordered black round spots, and a fourth on the middle of the costa; a pale brown streak closing the cell; a discal series of dark brown spots, a submarginal row of brown lunules, and a marginal series of blackish triangular spots, all bordered with white. Palpi and legs above black, beneath white. Female. Upperside brown: forewing with a lower basal blue patch, and a narrow black spot closing the cell: hindwing with the black marginal spots more defined and white bordered.

Expanse  $1\frac{2}{3}$  inch.

“Colombo. In cinnamon gardens. Not a common insect. Flutters about near the ground and settles upon it” (*Hutchison*).

“Taken at Kandy” (*Wade*).

**CHILADES PUTLI** (PLATE 35, FIG. 4, 4a).

*Lycæna Putli*, Kollar Hùgel's Reise, Kashmir, iv. 2, p. 422 (1844).

Male. Upperside violet-brown: hindwing with indistinct marginal pale-bordered black spots. Cilia cinereous-white. Underside cinereous-brown: forewing with a

white-bordered brown discocellular spot, a transverse discal and a submarginal row of similar spots: hindwing with a white-bordered black costal spot, four transverse subbasal spots and one near base of abdominal margin; a white-bordered brown discocellular spot and a transverse discal row of similar spots, a marginal row of six prominent black conical spots speckled with metallic-green, the outer one at each end less distinct, each bordered by ochreous-yellow and above by a double white lunular line. Female. Upperside similar, the marginal spots on hindwing slightly bordered with ochreous; markings of underside more distinct.

Expanse, ♂  $\frac{8}{12}$ , ♀  $\frac{10}{12}$  inch.

“Kandy and Trincomalee. Found in grass. Rare” (*Wade*).

#### Genus ZIZERA.

Wings small: forewing elongated, triangular; costal vein extending to half length of the wing; first subcostal branch emitted at one-half length before end of the cell and slightly touching the costal near its end, second at one-third, the third at one-sixth, fourth from half of third and terminating before the apex, fifth from end of cell; cell long, broadest in the middle; discocellulars slightly oblique in the middle, radial from the centre; middle median branch emitted at one-sixth and lower at one-half before end of the cell; submedian slightly recurved: hindwing short, oval; costal vein arched at the base, extending to apex; first subcostal at one-fourth before end of the cell; upper discocellular shortest, oblique, lower erect, radial from their middle; cell short, broad; two upper median veins from end of the cell; submedian straight; internal vein recurved at base; no tail. Body slender, abdomen long; palpi very long, porrect, second joint projecting more than half its length beyond front of the head, laxly pilose beneath, third joint long, slender, half length of the second, naked; legs slender; antennæ with a stout broad spatular club.

*Type*, Z. *Alsus*.

#### ZIZERA KARSANDRA (PLATE 35, FIG. 6, 6a).

*Polyommatus Karsandra*, Moore, Proc. Zool. Soc. Lond. 1865, p. 505, pl. 31, fig. 7.

Male. Upperside dull blue; exterior border of both wings brown. Cilia brownish-cinereous. Female uniform purple-brown. Underside brownish-grey; exterior margin defined by a brown line: forewing with a white-bordered black spot within the cell, a discocellular streak, a costal spot above it, a transverse discal row of six spots, and a marginal row of white-bordered pale brown lunules: hindwing with a subbasal linear series of four white-bordered black spots, and a discal curved

series of eight spots; a pale-bordered brown discocellular streak, a marginal row of white-bordered brown spots, and a submarginal row of similar bordered lunules.

Expanse, ♂  $\frac{11}{16}$ , ♀ 1 inch.

“Colombo; in gardens and grassy land. Almost always abundant. Hovers round weeds and plants, and constantly settling on the ground” (*Hutchison*).

**ZIZERA INDICA** (PLATE 35, FIG. 7, 7a).

*Lycæna indica*, Murray, Trans. Ent. Soc. Lond. 1874, p. 525, pl. 10, f. 2, 3.

Male. Upperside paler blue than *Z. Karsandra*; the marginal brown band somewhat narrower. Female purple-brown; the basal area of both wings suffused with blue; the hindwing with a submarginal indistinct series of blue lunules. Underside similar marked to *Z. Karsandra*, but the forewing has no spot within the cell, and the spot above the discocellular streak is also absent.

Expanse, ♂  $\frac{9}{12}$ , ♀  $\frac{11}{12}$  inch.

**ZIZERA PYGMÆA** (PLATE 35, FIG. 5, 5a).

*Lycæna pygmæa*, Snellin, Tijdschrift voor Ent. xix. p. 153, pl. 7, f. 3 (1876).

Male. Upperside lavender-blue: forewing with an indistinct broad brownish outer marginal band: hindwing with a brown marginal line. Cilia white, with brown inner line. Female pale violet-brown. Underside pale grey: forewing with a series of nine pale-bordered black spots curving from base of subcostal vein towards the apex and then across the disc, the fifth or upper discal spot lunate; two marginal rows of pale-bordered brown lunules: hindwing with a series of nine pale-bordered black spots, the first spot disposed at the base of costal vein, two on the costal border, the others curving across the disc; two small spots also on the abdominal margin, one also below and another within the cell; a marginal row of brown lunular spots enclosed by an inner lunular line. Both wings with a brown discocellular lunule. Palpi black above; legs with black streaks.

Expanse, ♂  $\frac{8}{12}$ , ♀  $\frac{9}{12}$  inch.

Found in the same localities, and has the same habits as *Z. Karsandra*.

Genus AZANUS.

Forewing elongated, triangular, costa almost straight, apex acute; exterior margin oblique and slightly concave; posterior margin short, angle acute; costal vein curved in its middle and slightly bent before reaching the costa; first subcostal

branch emitted at one-third before end of the cell, anastomosed to the costal for a short distance near its end, second at one-sixth, third and fifth at end of the cell, fourth at one-half beyond and terminating at the apex; discocellulars very slender, radial from their middle; cell long; middle median branch emitted before end of the cell, lower at one-third before its end; submedian straight: hindwing small, short; apex convex, anal angle acute, abdominal margin short; costal vein much curved at the base, extending to the apex; first subcostal branch emitted at one-fourth before end of the cell; discocellulars very slender, radial from their middle; cell somewhat short, broad; two upper median branches emitted from end of the cell, lower at one-half before its end; submedian and internal vein straight; no tail. Thorax robust, woolly, abdomen short; palpi porrect; second joint long, laxly pilose beneath, extending half its length beyond the head, third joint slender, squamose, half length of second; legs slender, tarsi five jointed and finely spined beneath; antennæ with a prominent spatular club.

*Type*, A. Ubalus.

**AZANUS CRAMERI** (PLATE 36, FIG. 1).

Male. Upperside pale purple-blue, exterior margin defined by a slender black line. Cilia white. Female pale violet-brown, the basal areas pale violet-blue; forewing with a whitish-bordered brown discocellular spot: hindwing with a marginal row of indistinct pale-bordered blackish spots. Underside pale brownish-grey, outer marginal line black: forewing with a brown basal streak below the costal vein, a white-bordered blackish spot within the cell and a less distinct spot below it, a discocellular pale-bordered brown streak, a transverse subapical white-bordered brown band broken at its lower end, a marginal row of brown pale-bordered spots and an inner white submarginal lunular line: hindwing with a white-bordered black clavate basal streak, three subbasal spots, two spots on middle of abdominal margin, a costal spot, and an outer marginal row of spots, the two from anal angle speckled with metallic green; a curved discocellular and a discal pale-bordered brown catenulated band. Palpi above black; legs with black tarsal bands.

Expanse  $\frac{1}{2}$  inch.

"Colombo. In cinnamon gardens. Local. Rare" (*Hutchison*).

"Hambantotte. June, among bushes. Common" (*Wade*).

This is a comparatively broader insect than *A. Ubalus* (Cramer, Pap. Exot. iv. pl. 390, f. L, M), the forewing is also less acuminate at the apex, and the underside has additional spots towards the base.

## Genus TARUCUS.

Forewing triangular; costa very slightly arched at base, apex slightly acute, exterior margin oblique and slightly convex, posterior margin straight; costal vein short, not extending to half length of the margin; first subcostal branch short, emitted at one-half before end of the cell, anastomosed to costal near its end, second at one-third, and third at one-sixth before end of the cell, fourth at one-half from third and terminating at apex, fifth from end of cell; discocellulars slightly waved, radial from their middle; cell long, broad; middle median branch emitted at one-fifth before end of the cell, lower at more than half before the end; submedian straight: hindwing bluntly oval; exterior margin convex, anal angle acute; with a slender tail from end of lower median vein; costal vein much arched at the base, extending to apex; first subcostal emitted at one-half before end of the cell; discocellulars inwardly oblique, radial from their middle; cell short, broad; middle median branch emitted immediately before end of the cell, lower at one-half before the end; submedian straight, internal recurved. Body slender; palpi porrect, second joint projecting about one-third beyond the head, clothed with long lax scales, third joint slender, naked; legs slender; antennæ with a very long slender grooved club.

*Type*, T. Theophrastus.

## TARUCUS THEOPHRASTUS (PLATE 36, FIG. 3).

*Hesperia Theophrastus*, Fabricius, Ent. Syst. iii. p. 281 (1793).

*Lampides Theophrastus*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 164.

*Lycæna Theophrastus*, Horsf. Catal. Lep. Mus. E. I. C. p. 73; Trimen, Lep. Afr. Austr. ii. p. 241.

Male. Upperside lavender-blue, costal edge and exterior margins narrowly lined with black: forewing with an indistinct black discocellular spot, and hindwing with a less distinct subanal spot; tail black, tipped with white. Cilia white, with inner black border. Female, with blue basal and white discal areas, the discal areas black spotted, the outer borders black and traversed by a more or less distinct row of slender white lunular marks which are single on the forewing and double and broadest on the hindwing. Underside greyish-white: forewing with a black straight streak below the costal vein, an oblique subbasal streak, two transverse discal streaks, three subapical spots, and two marginal rows of quadrate spots: hindwing with a transverse basal and subbasal black streak, irregularly disposed discal spots, a submarginal broken row of lunular spots, and a marginal row of slightly larger rounded spots, the outer series speckled with metallic green scales.

Expanse 1 inch.

*Note*.—The markings on the underside of this species are wider and more

broken up than in the allied N. Indian form (*T. Nara*), and the female is more prominently white marked on the upperside.

“ Found in strips of high jungle fringing the Yalle River. Plentiful in this one spot in July ” (*Wade*).

**TARUCUS PLINIUS** (PLATE 36, FIG. 4).

*Hesperia Plinius*, Fabricius, Ent. Syst. iii. p. 284 (1793); Donovan, Ins. Ind. pl. 41, f. 1.

*Lycæna Plinius*, Horsfield, Catal. Lep. Mus. East India Company, p. 72.

Male. Upperside purple violet-blue. Female fuliginous-brown, basal areas glossed with cobalt blue, discal area of forewing with a series of whitish quadrate spots: hindwing with indistinct whitish discal spots and a more prominent submarginal and marginal lunular band, the latter enclosing indistinct blackish spots. Underside brown: forewing with a white basal angled mark, a subbasal curved line, four waved oblique discal outwardly-confluent lines, and two marginal lunular lines: hindwing with a white basal costal streak, a subbasal straight streak, two medial waved lines, and two discal contorted lines, a submarginal row of broad lunules, and a marginal row of conical marks, the two from anal angle black with metallic-green speckles and bordered with ochreous.

Expanse 1 inch.

“ Captured near Kandy, about 2000 to 2500 feet. Flies about hedges by roadside in January. Scarce ” (*Hutchison*).

“ Kandy, and Hambantotte in June ” (*Wade*).

**Genus CASTALIUS.**

*Castalius*, Hübner, Verz. bek. Schmett. p. 70 (1816).

Forewing triangular; costa arched at the base, apex pointed, exterior margin oblique and slightly convex; costal vein extending to a little over half length of the margin; first subcostal branch very short, anastomosed to costal for a short distance near its end, emitted at nearly one-half before end of the cell; second at a very short distance before base of first; third at one-eighth before end of the cell, fourth at one-half beyond the cell, fifth from end of the cell; discocellulars slightly oblique and recurved, radial from their middle; cell extending to more than half length of the wing; middle median branch emitted at one-eighth before end of the cell, lower at one-half before its end; submedian nearly straight: hindwing bluntly oval, exterior margin convex anteriorly, slightly angled and with a delicate tail at end of lower median vein; costal vein arched at base and extending to apex; first subcostal emitted at one-fourth before end of the cell; discocellulars recurved, radial from

their middle; cell short, broad; two upper median branches from end of the cell, lower at one-third before its end; submedian vein straight, internal recurved. Body small, abdomen short; palpi porrect, long, second joint compressed, clothed with compact hairy-scales, projecting half its length beyond the head, third joint slender, naked, more than half length of second; legs slender; antennæ with a blunt spatular club.

*Type*, C. Rosimon.

**CASTALIUS ROSIMON** (PLATE 36, FIG. 2).

*Papilio Rosimon*, Fabricius, Syst. Ent. p. 523 (1775).

*Castalius Rosimon*, Butler, Catal. Fabrician Lep. B. M. p. 162.

*Lycana Rosimon*, Horsfield, Catal. Lep. Mus. E. I. C. p. 71.

*Papilio Maimon*, Fabricius, Syst. Ent. p. 534 (1775).

*Papilio Clyton*, Cramer, Pap. Exot. i. pl. 67, fig. F, G (1779), ♂.

*Papilio Coridon*, Cramer, id. iv. pl. 340, fig. C—E (1782), ♀.

*Castalius Nazus*, Hübner, Verz. bek. Schmett. p. 70 (1816).

Male and female. Upperside white, basal area scattered over with silvery blue or greenish scales: forewing in male with a blackish-brown costal and outer marginal band, a large discocellular spot, and an outer discal irregular series of five spots, and a less distinct lower basal oblique spot: hindwing with a blackish-brown costal and broad outer marginal band, the latter traversed by a row of slender white more or less complete conical rings; tail black tipped with white. Cilia alternated with white. Female with broader black marginal bands and spots. Underside white: forewing with a black straight basal band, an oblique lower subbasal streak, a short discocellular streak, an outer discal series of five spots, and a marginal double row of small spots: hindwing with two basal transverse black streaks, a subbasal dispersed series of nine spots, a discal row and two marginal rows of smaller spots, the three anal spots on the outer row speckled with metallic-green scales. Body above black, thorax bluish, side and front of head white; palpi above and bands on tarsi black.

Expanse 1 to 1½ inch.

“Colombo. Plains and borders of cultivated ground; at all times. Slow flight; settles among grass and on the ground; easily captured” (*Hutchison*).

“Galle and Kandy. Very common” (*Wade*).

**CASTALIUS ETHION** (PLATE 36, FIG. 5, 5a).

*Lycana Ethion*, Doubleday and Hewitson Gen. Diurn. Lep. p. 490, pl. 76, fig. 3 (1852); Hewitson, Exot. Butt. V. Lyc. pl. 1, f. 5 (1876).

Male. Upperside dark violet-black: forewing with a broad bluish-white medial

discal transverse band, which is angled outward at its anterior end, the discal area outside the band suffused with blue. Female fuliginous-brown, with a similar white discal band, but not glossed with blue. Tail black. Underside bluish-white: forewing with two black basal oblique bands, an upper and lower discal short band with an intervening small spot, and two marginal rows of small spots: hindwing with two short black basal bands, three outer discal spots, and two marginal rows of smaller spots, the two spots from anal angle speckled with metallic-green scales; palpi black above; legs black with white bands.

Expanse 1 inch.

“Galle and Kandy. Very common” (*Wade*).

#### CASTALIUS DECIDIA

*Lycæna Decidia*, Hewitson, Exotic Butt. V. *Lyc.* pl. i. f. 4 (1876).

Upperside violet-black, with a broad white medial transverse band, which is angled inward towards the costa and hooked outward below the apex. Underside with narrow black markings on forewing and very attenuated streaks on the hindwing.

Expanse  $1\frac{1}{8}$  inch.

“Western and Central Provinces. Plains and Hills up to 4000 feet. Common in low country forests from June to October. Flits about the tops of shrubs and low trees, settling among the leaves” (*Hutchison*).

#### CASTALIUS HAMATUS (PLATE 36, FIG. 6, 6a).

Male. Upperside dark violet-black; both wings with a narrow white medial discal transverse band, which is attenuated and hooked outward at its anterior end below the costa, the band on both wings is also crossed by black veins, and thickly black speckled on the hindwing; cilia white alternated with black. Female with the white band broader and more acutely hooked. Underside white: forewing with a broad black subbasal band curving inward from the costa, an oblique short subapical and a lower discal band, a marginal lunular band which is dilated at both ends and projected inward from the middle: hindwing with a black basal curved band, a small contiguous spot on abdominal margin, a large upper and lower irregular discal spot, and a smaller intervening spot, a marginal row of lunules. Palpi black above; legs black with white bands.

Expanse  $1\frac{1}{4}$  inch.

“Galle and Kandy. Very common” (*Wade*).



## Genus EVERES.

*Everes*, Hübner, Verz. bek. Schmett. p. 69 (1816).

Forewing elongate, triangular; costa slightly arched at the base, apex rounded, exterior margin slightly oblique and convex, posterior margin long; costal vein short, bent slightly upward before reaching the costa, and not extending to half length of the margin; first subcostal branch ascending and anastomosed to costal near its end, second at one-third before end of the cell, third at one-sixth before its end, fourth from one-half length of the third and terminating at the apex, fifth from end of the cell; discocellulars slightly oblique, radial from their middle; the middle median emitted at one-sixth before end of the cell, lower at one-half before its end; submedian slightly recurved: hindwing oval; with a slender tail from end of lower median vein; costal vein extending to near apex, arched at the base; upper discocellular oblique, lower erect, radial from their middle; cell short; middle median branch emitted before end of the cell, lower at one-half before its end; submedian and internal veins straight. Body small, short; palpi slender, porrect, second joint pointed at its end and clothed with longish scales at its base beneath, third joint long, slender; legs slender; antennæ with a slender grooved club.

*Type*, *E. Amyntas* Fab.

**EVERES PARRHASIUS** (PLATE 36, FIG. 7).

*Hesperia Parrhasius*, Fabricius, Ent. Syst. iii. i. p. 289 (1793).

*Lycæna Parrhasius*, Horsfield, Catal. Lep. Mus. East India Company, p. 86.

Male. Upperside deep violet-blue, with a narrow brown outer marginal band, the band on the hindwing with black spots slightly bordered with white. Female violet-brown, the lower basal and discal areas more or less greyish-blue: hindwing with a marginal row of white-bordered black spots, the two spots between the median veins bordered with a red inner lunule. Underside greyish-white: forewing with a white-bordered dusky-brown discocellular lunule, an outer discal lunular line, and two marginal lunular lines: hindwing with three black subbasal and an apical spot, a white-bordered dusky-brown discocellular lunule, a discal row of lunules, and a marginal lunular line, the latter enclosing two large subanal black spots bordered with ochreous.

Expanse, ♂ 1, ♀ 1½ inch.

“Colombo. In open and cultivated land” (*Hutchison*).

“Galle and Kandy. Very common” (*Wade*).

## Genus JAMIDES.

*Jamides*, Hübner, Verz. bek. Schmett. p. 71 (1816).

Forewing elongate, triangular; costa slightly arched at base, apex very acute, exterior margin slightly oblique and convex, posterior margin long; costal vein bent upward near its end to the costa, extending to half length of the margin; first subcostal branch short, emitted at nearly one-half before end of the cell and slightly touching the costal at its angle, second branch at one-third before end of the cell, third close to the end, fourth at nearly one-half from third and terminating at the apex, fifth from end of the cell; discocellulars slightly waved, radial from their middle; cell broad, long, extending to more than half the wing; middle median branch emitted at one-sixth before end of the cell, lower at nearly one-half before the end; submedian straight: hindwing short, triangular, with a slender tail from end of lower median vein; costal vein arched and extending to apex; discocellulars slightly oblique, radial from their middle; cell short, broad; middle median branch emitted before end of the cell, lower at nearly one-half before the end; submedian straight, internal recurved. Body slender, short; palpi porrect, second joint projecting half length beyond the head, clothed with adpressed scales, third joint naked, slender, about half length of second; legs slender; antennæ with a thick club.

**JAMIDES BOCHUS** (PLATE 36, FIG. 8, 8a, ♂ ♀).*Papilio Bochus*, Cramer, Pap. Exot. iv. pl. 391, fig. C, D (1782), ♂.*Jamides Bochus*, Hübner, Verz. bek. Schmett. p. 71 (1816).*Hesperia Democritus*, Fabricius, Ent. Syst. iii. p. 285 (1793), ♂.*Hesperia Plato*, Fabricius, Ent. Syst. iii. p. 288 (1793), ♀.*Lampides Plato*, Butler, Catal. Fabrician Lep. B. M. p. 166, pl. 2, fig. 3, ♀.*Lycana Nila*, Horsfield, Catalogue Lep. Mus. East India Company, p. 78 (1829), ♂.

Male. Upperside: forewing jet-black, lower basal and discal area glittering steel-blue: hindwing glittering steel-blue, with a black marginal line and indistinct anal spots; abdominal margin jet-black. Cilia black. Female dark fuliginous-brown, the lower basal and discal area of both wings unglossed cobalt-blue; marginal spots on hindwing bordered with blue. Underside greyish fuliginous-brown: forewing with two faintly-indicated slender white discocellular streaks, two transverse discal broken lines, two submarginal lunular lines, and a marginal line: hindwing with two subbasal and two discal broken white lines, two submarginal sinuous lines, and a marginal line; a prominent red-bordered subanal black spot and a slight anal streak, both speckled with metallic-blue scales.

Expanse  $1\frac{1}{4}$  inch.

“Western and Central Provinces. Plains and Hills up to 4000 feet. Has a quick flight, darting from point to point among hedges on the roadside, and settling on the leaves” (*Hutchison*).

“Galle and Kandy. Common” (*Wade*).

Genus LYCÆNESTHES.

*Lycænesthes*, Moore, Proc. Zool. Soc. Lond. 1865, p. 773.

Wings moderately broad: forewing elongated, triangular; costal margin arched at the base, apex somewhat acute, exterior margin slightly oblique and nearly straight, posterior margin long; costal vein extending to half length of the margin; first subcostal branch emitted at more than one-third before end of the cell, second at one-fourth, third at one-eighth before its end, fourth at less than one-half beyond the cell and terminating at the apex, fifth from end of the cell; discocellulars very slender, slightly oblique, radial from their middle; cell long, extending to more than half length of the wing; middle median branch emitted at one-eighth before end of the cell, lower at one-third; submedian recurved: hindwing bluntly oval, costa convex at base, exterior margin convex anteriorly, anal angle slightly acute; costal vein much arched at the base, extending to the apex; first subcostal branch emitted at one-fourth before end of the cell; discocellulars oblique, upper concave, radial from their middle; the middle median branch emitted at nearly one-half before end of the cell; submedian vein straight, internal recurved; a short delicate cilia spine from end of median and submedian veins. Body short, robust; palpi long, compressed laterally, projecting nearly half its length beyond the head, second joint clothed with long hair-scales, third joint slender, naked, about half length of second; legs slender, femora finely pilose beneath, fore tibiæ of male spined beneath and with a blunt claw at tip; antennæ with a long slender pointed club.

LYCÆNESTHES LYCÆNINA (PLATE 35, FIG. 8, 8a).

*Lycænesthes Lycænina*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 281.

Male. Upperside purple violet-blue: hindwing with indistinct dusky spots with whitish outer border from anal angle. Female violet-brown; basal area suffused with blue; marginal anal spots more distinct. Underside pale greyish-brown: forewing with two white discocellular lines, a transverse discal catenulated band, a submarginal and marginal dentated line: hindwing with a white-bordered black spot near end of costal vein, a similar spot on middle of abdominal margin, and a larger ochreous-bordered marginal spot between middle and lower median veins; a white-bordered discoidal ringlet mark, a discal catenulated band, a submarginal and marginal dentated line. Palpi black above; legs with black bands.

Expanse  $1\frac{1}{16}$  inch.

"Pusalawe. Hills about 3000 feet. Forests. September" (*Hutchison*).

"Kandy" (*Wade*).

#### Genus NACADUBA.

Forewing triangular; costa regularly arched, exterior margin slightly convex, posterior margin straight; costal vein extending to half length of the margin, bent upward to costa near its end; first subcostal branch emitted at one-third before end of the cell, short, curved upward and touching the costal, second branch at one-fourth, third close to end of the cell, fourth at beyond one-half from third and terminating at the apex, fifth from end of the cell; discocellulars slightly concave, radial from their middle; cell broad, long, extending more than half the wing; middle median from angle before end of the cell, lower branch at one-third before the end; submedian straight: hindwing bluntly oval, furnished with a single slender tail; costal vein arched at the base; first subcostal curved upward, emitted at one-sixth before end of the cell; discocellulars slightly oblique, radial from their middle; cell broad; two upper median branches from end of the cell, lower at nearly one-half before the end; submedian and internal vein straight. Body moderate, rather short; palpi porrect, second joint extending more than half beyond the head, laxly pilose beneath; legs slender; antennal club grooved, pointed.

*Type*, *N. prominens*.

#### NACADUBA PROMINENS (PLATE 37, FIG. 3, 3 a, b, c).

*Lampides Prominens*, Moore, *Annals of Natural History*, 1877, p. 341.

Male. Upperside greyish violet-blue, with a very slender indistinct brown marginal line. Female violet-black, the lower basal and discal areas pale smalt-blue: hindwing with the costal border broadly black, and a marginal row of white-bordered black spots enclosed by an inner white lunular line. Underside pale greyish-brown: forewing crossed by two subbasal, two short discocellular, and two discal prominent dark-bordered white slightly waved bands, and two marginal blackish-interspaced lunular bands, the two discal bands broken and shifted inward at the middle median vein: hindwing crossed by six broken white bands and two marginal blackish-interspaced sinuous bands; a large subanal and small anal black spot, both speckled with metallic green scales and ochreous bordered.

Expanse  $1\frac{2}{16}$  to  $1\frac{4}{16}$  inch.

Larva onisciform; pale rose colour, with dorsal and lateral rows of brighter spots. Pupa somewhat cylindrical, head blunt; reddish, with minute black spots. "Feeds on the very young leaves of *Vateria indica*" (*Thwaites*).

“Colombo. In cinnamon gardens. Flight short, settling among shrubs and grass” (*Hutchison*).

“Kandy” (*Wade*).

**NACADUBA ATRATA.**

*Lycæna Atratus*, Horsfield, Catal. Lep. E. I. C. p. 78 (1828) ♀.

*Lycæna Kurava*, Moore, Catal. Lep. E. I. C. i. p. 22 (1857).

Closely allied to *N. prominens*, but comparatively smaller in size. Male of a uniformly darker grey-blue; female also of a more intense and darker glistening blue, the brown outer borders broader. On the underside the white bands are more distinct, the marginal band encloses a series of black spots, and the submarginal band is more acutely sinuous with black interspaces.

Expanse  $1\frac{1}{10}$  to  $1\frac{2}{10}$  inch.

“In the same locality as *N. prominens*” (*Hutchison*).

**NACADUBA MACROPHALMA** (PLATE 37, FIG. 4, 4a).

*Lycæna Macrophthalma*, Felder, Verh. Zool. Bot. Gesch. 1862, p. 483; Reise Novara Lep. ii. p. 275, pl. 34, f. 35.

Male. Upperside greyish violet-blue. Female violet-brown, with the lower basal and discal areas dark blue glossed with cobalt: hindwing with a marginal pale-bordered blackish macular band and inner lunular line. Underside greyish purple-brown: forewing crossed by two slender white discocellular bands, two discal bands, two submarginal lunular bands, and a marginal line, the two discal bands broken and shifted inward at the middle median branch: hindwing crossed by six slender white-bordered bands, two submarginal sinuous bands, and a marginal line; a large black red-bordered subanal spot and anal streak, speckled with metallic green scales. Female paler, with the white bands less prominent, the two submarginal sinuous bands on hindwing diffused and nearly confluent in some specimens.

Expanse, ♂  $1\frac{2}{8}$ , ♀  $1\frac{3}{8}$  inch.

“Poorie, ten miles from Colombo. Plains, forest; during S.W. monsoon—July to October. Flight short, settling on shrubs” (*Hutchison*).

“Kandy”: (*Wade*).

**NACADUBA VIOLA** (PLATE 38, FIG. 1, 1 a, b).

*Lampides Viola*, Moore, Annals of Natural History, 1877, p. 340.

Male. Upperside dark violet-blue; both wings with a slender black marginal line. Cilia whitish at the edge. Female dark violet-brown, smalt-blue on middle of the forewing: hindwing with indistinct marginal row of pale-bordered black spots,

the penultimate spot most distinct. Underside dark violet-grey; both wings with six very pale delicate white broken narrow bands, the two inner and the outer bands on the forewing short; a small black anal and large subanal spot, speckled with blue and ochreous bordered.

Expanse, ♂  $\frac{9}{10}$ , ♀ 1 inch.

**NACADUBA ARDATES** (PLATE 38, Fig. 2, 2a).

*Lycæna Ardates*, Moore, Proc. Zool. Soc. Lond. 1874, p. 574, pl. 67, fig. 1, ♂.

Male. Upperside purplish violet-blue; marginal line and a short tail on hindwing black. Cilia greyish, with dark inner line. Female violet-brown, lower medial area of forewing suffused with cobalt blue: hindwing with a marginal row of white-bordered indistinct black spots, the penultimate more distinct. Underside dark fawn colour or brownish-grey: forewing crossed by a white-bordered dusky antemedial band, a short discocellular band, a postmedial irregular catenulated band, and two marginal white lunular lines: hindwing crossed by three irregular catenulated bands, and a submarginal dentate-lunular line bordering a marginal row of spots; subanal spot large, round, black, and speckled with metallic green scales.

Expanse  $\frac{3}{4}$  to 1 inch.

“Colombo. About hedges of native gardens, flying among the bushes and settling on the leaves” (*Hutchison*).

“Kandy” (*Wade*).

**Genus CATOCHRYSOPS.**

*Catochrysops*, Boisduval, Voy. Astrolabe, p. 87 (1832).

Forewing triangular; costal vein extending half the wing, bent upward to costa near the end; first subcostal branch emitted at nearly one-half before end of the cell, curved upward and slightly touching the costal, second emitted at one-third, the third at one-eighth before end of the cell, fourth at two-thirds from base of third and terminating at the apex, fifth from end of the cell; discocellulars slightly concave, radial from their middle; cell narrower than in *Nacaduba*, extending to half length of the wing; middle median branch from immediately before end of the cell, lower at one-half before the end: hindwing short, triangularly-oval, abdominal margin long; furnished with a single slender tail; costal vein much arched; first subcostal branch slightly curved, emitted at one-fourth before end of the cell; discocellulars obliquely recurved, radial from their middle; cell broad; two upper median branches from end of the cell, lower at one-half before the end; submedian straight, internal recurved. Body moderate; palpi porrect, second joint laxly squamose, third joint long, slender, legs slender; antennal club rather short, grooved.

Type, C. Strabo.

**CATOCHRYSOPS STRABO** (PLATE 37, FIG. 2, 2a).*Hesperia Strabo*, Fabricius, Ent. Syst. iii. p. 287 (1793).*Catochrysops Strabo*, Boisduval, Voy. Astrolabe Lep. p. 88.*Lampides Strabo*, Butler, Catal. Fabrician Lep. B. M. p. 165.*Lycena Kandarpa*, Horsfield, Catal. Lep. Mus. E. I. C. p. 82 (1829).

Male. Upperside lilac-blue, with a very slender black marginal line: hindwing with a distinct black subanal spot. Female brown, with cobalt-blue lower basal and discal areas: forewing with two short lower submarginal indistinct whitish lunular lines: hindwing with two marginal rows of white-bordered blackish lunular spots, the subanal spot very large, blackest and bordered inwardly with red; an indistinct series of blackish discal spots with pale borders. Underside pale greyish-white or brownish-grey: forewing with a white-bordered brownish discocellular band, a discal transverse catenulated band, and two marginal lunular lines, a small black white-bordered spot on costa before the discal band: hindwing with two white-bordered black costal spots, a subcostal, a discocellular, and a discal white-bordered brown catenulated band, the latter abruptly terminating upward on abdominal border; submarginal lunular lines; an indistinct black anal streak and a large prominent black subanal spot, the latter speckled with metallic scales and bordered inwardly with orange-yellow. Tail black, tipped with white; cilia edged with white.

Expanse  $1\frac{1}{4}$  to  $1\frac{3}{4}$  inch.

“Colombo, in open and cultivated land” (*Hutchison*).

“Kandy” (*Wade*).

**CATOCHRYSOPS LITHARGYRIA***Lampides Lithargyria*, Moore, Annuals of Natural History, 1877, p. 340.

Male. Upperside greyish silvery-blue: forewing with very narrow marginal indistinct black border: hindwing with two triangular spots from anal angle, the second largest. Cilia white with dusky marginal inner line. Underside white: forewing with a broad greyish-brown spot at end of the cell, a transverse discal catenulated band with a contiguous spot at upper end, a narrower submarginal band, and very indistinct marginal lunules: hindwing with two prominent black costal spots, two greyish-brown subbasal spots, a broad spot at end of the cell, a curved discal macular band, a marginal series of lunular spots enclosed by a broad dentate band, the penultimate spot being black and bordered above with ochreous. Tail black tipped with white.

Expanse  $1\frac{2}{3}$  inch.

Allied to *C. Strabo*, but of an entirely different colour above and beneath, and the markings of underside all much broader. Also allied to *C. platissa*, H. S., from Australia.

**CATOCORYSOPS CNEJUS.**

*Hesperia Cnejus*, Fabricius, Ent. Syst. Suppl. p. 430 (1798).

*Lycæna Cnejus*, Horsfield, Catal. Lep. Mus. E. I. C. p. 83.

*Lampides Cnejus*, Butler, Catal. Fabrician Lep. B. M. p. 165.

Male. Upperside violet-blue, with a very slender brownish marginal shade, and a delicate outer black line: hindwing with two anal distinct black spots. Female violet-brown, with the lower basal and discal areas pale blue: hindwing with a bluish white-bordered black row of marginal spots, and an inner row of white lunules, the two anal spots red bordered. Cilia greyish-white; tail black, tipped with white. Underside pale brownish-grey: forewing with a white-bordered brownish discocellular streak, a transverse discal catenulated band, and marginal lunular lines: hindwing with two white-bordered black costal spots and two subanal spots; a white-bordered brownish discocellular streak, a discal catenulated band, marginal row of conical spots and a lunular line; two prominent black anal spots speckled with metallic green scales and bordered inwardly with orange-yellow.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

“Colombo. In cinnamon gardens” (*Hutchison*).

“Hambantotte; among low shrubs in June” (*Wade*).

**CATOCORYSOPS PANDAVA** (PLATE 37, FIG. 1, 1 a, b).

*Lycæna Pandava*, Horsfield, Catal. Lep. E. I. C. p. 84 (1829).

Male. Upperside glossy lavender-blue: forewing with a distinct brownish-black marginal border, and slender black outer line: hindwing with a marginal row of brownish-black spots bordered outwardly by a slender white lunular line, the penultimate spot bordered inwardly with red; costal border also brownish-black. Female violet-brown, with the lower basal and discal areas glossy lavender-blue: hindwing with a marginal row of white-bordered black spots, and bluish-white inner lunular line, the penultimate spot red bordered. Underside pale greyish-brown: forewing with a white-bordered brown discocellular streak, a discal catenulated band, and two marginal bands: hindwing with two white-bordered black costal spots and three lower subbasal spots, a white-bordered brown discocellular streak, a discal catenulated band, a submarginal lunular line, and a marginal macular band, the two anal spots red bordered.

Expanse  $1\frac{3}{4}$  inch.

Larva onisciform; greenish or violet-brown above, with a dorsal darker brown line and white spots, and a yellow lateral line.

Pupa violet-brown, thick, head truncate.

“Feeds on Cycadaceæ” (*Thwaites*).

“Hambantotte. Among low shrubs. June” (*Wade*).



## Genus POLYOMMATUS.

*Polyommatus*, Latreille, Sonnerat's Buffon, xiv. p. 116 (1805); Gen. Crust. et Ins. iv. p. 206 (1807).

Forewing triangular; costa slightly arched, exterior margin oblique and slightly convex towards the apex, posterior margin straight; costal vein extending to half length of wing; first and second subcostal branches short, first emitted at nearly one-half before end of the cell, second at one-fifth, third bifid and emitted close to end of the cell, fourth at one-half from third and terminating at the apex, fifth from end of the cell; discocellulars nearly erect, of equal length, radial from their middle; cell broad extending to a little beyond half length of wing; upper median from end of the cell, middle branch at one-fifth and lower at one-third before end of the cell; submedian nearly straight: hindwing bluntly oval; furnished with a single slender tail; costal vein much arched from the base; first subcostal branch curved, emitted at one-fourth before end of the cell; discocellulars very slender, upper slightly concave, radial from their middle; two upper median branches from end of cell, lower branch at one-third before the end; submedian straight, internal recurved, short. Body stouter than in *Lampides*; palpi porrect, long, slender, flattened, fringed beneath; legs slender; antennal club stout, grooved.

*Type*, *P. Bæticus*.

## POLYOMMATUS BÆTICUS.

*Papilio Bæticus*, Linnæus, Syst. Nat. i. ii. p. 789 (1767); Fabricius, Syst. Ent. pp. 522, 526.

*Lycæna Bætica*, Horsfield, Catal. Lep. Mus. E. I. C. p. 80.

*Lampides Bæticus*, Butler, Catal. Fabrician Lep. B. M. p. 165.

Male. Upperside dull violet-blue, with a very narrow brown marginal band: hindwing with two black anal spots and a marginal row of evanescent blackish spots. Female brown, the lower basal and discal areas cobalt-blue; two marginal rows of whitish lunules, less distinct on forewing; anal spots prominent. Cilia edged with white; tail black with white tip. Underside greyish-ochreous, brownish in female: forewing with four transverse discoidal, two discal, and two marginal white-bordered brown bands, the two discal bands broken below the middle and lower median veins, the outer marginal band indistinct: hindwing with the basal area crossed by eight or nine narrow white waved lines, a broad white discal band, and a narrow marginal lunular line; anal spots jet-black, and traversed externally by a lunule of steel-blue or green metallic scales, and bordered inwardly by ochreous-red.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

"Western and Central Provinces. In low country and up to 3000 feet. In weedy and cultivated land, but not forest. Chiefly in the spring. Flight slow as compared with many of the Lycænidæ. Settles among bushes" (*Hutchison*).

"Kaudy. Very common" (*Wade*).

## Genus LAMPIDES.

*Lampides*, Hübner, Verz. bek. Schmett. p. 70 (1816).

Wings somewhat broad; forewing nearly triangular; costa arched, exterior margin slightly oblique and convex, posterior margin acute; costal vein short, curved, bent upward to the costa near its end; first subcostal branch bent upward and joined to the costal by a short spur, emitted at one-half before end of the cell; second at one-third, the third at one-eighth before the end, fourth at one-half from third and terminating at apex, fifth from end of the cell; discocellulars curved, radial from their middle; cell broad; upper median branch emitted at one-eighth before end of the cell, lower at one-half before the end; submedian straight: hindwing triangularly-oval; apex convexly-angular; exterior margin very oblique, slightly angled at end of lower median vein, and a slender tail extending from the angle; abdominal margin long; costal vein much arched at base, extending to apex; first subcostal branch emitted at one-fifth before end of the cell; discocellulars outwardly oblique, radial from their middle; cell broad; two upper median branches emitted from end of the cell, lower at nearly one-half before the end; submedian and internal veins straight. Body slender, short; palpi porrect, second joint projecting about half its length beyond the head, clothed with long adpressed scales, third joint very long, slender, naked; legs slender; antennæ with a lengthened grooved pointed club.

*Type*, L. *Ælianus*.

## LAMPIDES ÆLIANUS (PLATE 38, FIG. 3, 3 a, b).

*Hesperia Ælianus*, Fabricius, Ent. Syst. iii. p. 280 (1793).

*Lycæna Ælianus*, Horsfield, Catal. Lep. Mus. E. I. C. p. 73, pl. 4, f. 1, 1a.

*Lampides Ælianus*, Butler, Catal. Fabr. Lep. B. M. p. 166.

*Papilio Alexis*, Stoll, Suppl. Cram. Pap. Exot. pl. 38, f. 3, 3c, ♂ (1790).

*Lycæna Alexis*, Moore, Catal. Lep. Mus. E. I. C. i. p. 25.

Male. Upperside pale cobalt-blue: forewing with a narrow black marginal band tapering to a point at posterior angle: hindwing with a marginal row of white-bordered black lunular spots and a slender outer line; the white bands of the underside slightly visible. Cilia of forewing black, slightly edged with white, of hindwing white edged with black; tail black, tipped with white. Female paler: forewing with a broad blackish marginal band, angled at the upper median vein and extending obliquely to middle of the costa: hindwing with the marginal row of white-bordered black spots more distinct, and followed by an inner black lunular line, costal border also broadly blackish. Underside pale brownish-grey: forewing crossed by four white oblique discal bands and three marginal parallel bands, the second, inner and fourth bands short; hindwing crossed with five white bands, the second, third, and fourth angled inward to abdominal margin; two upper submarginal

lunular bands and a marginal line; a short band also crossing end of the cell; an anal streak and subanal red-bordered black spot, sparsely speckled with metallic green.

Expanse  $1\frac{1}{8}$  to  $1\frac{3}{8}$  inch.

Larva onisciform; green or violet-brown, with a dark dorsal and lateral black lines.

Pupa pale violet-brown.

“Kandy and Galle. Very common” (*Wade*).

**LAMPIDES ELPIS** (PLATE 38, FIG. 4, 4a).

*Polyommatus Elpis*, Godart, Enc. Méth. ix. p. 654 (1823).

*Lycæna Elpis*, Horsfield, Catal. Lep. Mus. E. I. C. p. 76, pl. 1, f. 4.

Male. Upperside bright glossy cobalt-blue: forewing with an indistinctly defined very slender black marginal band: hindwing with a slender black marginal line, a row of white-bordered black lunular spots, and a very indistinct inner row of similar lunules. Cilia of forewing blackish, of hindwing white edged with black; tail black, tipped with white. Female paler and duller blue: forewing with a broad blackish marginal band angled inward and extending along the costa to its base: hindwing with a marginal row of white-bordered black spots and inner lunular line; costal border also broadly blackish. Underside pale brownish-grey: forewing crossed by four oblique discal white bands, the two outer shortest and sometimes broken, and three marginal parallel bands: hindwing crossed by five white interrupted bands, the third and fourth angled inward to abdominal margin; two upper submarginal lunular bands, and a marginal line, a short band also at end of the cell; an anal streak and a subanal red-bordered black spot, sparsely speckled with metallic green.

Expanse  $1\frac{2}{8}$  to  $1\frac{4}{8}$  inch.

“Central Province. 2000 to 3000 feet elevation, generally in flower-gardens, at any time. Has a quick flight” (*Hutchison*).

“Kandy and Galle. Very common” (*Wade*).

**LAMPIDES PSEUDELPIS.**

*Lampides Pseudelpis*, Butler, Trans. Linn. Soc. 2nd ser. Zool. i. p. 547, pl. 68, fig. 7, 8 (1877-9).

Upperside of a paler colour than in *L. Elpis*; both wings with a black marginal line: hindwing with a white inner marginal line only, no submarginal spots. On the underside the white bands are narrower, more irregular and broken, the two marginal bands more sinuous, the anal black spot larger and less broadly bordered with ochreous.

Expanse  $1\frac{1}{4}$  inch.

**LAMPIDES CORUSCANS** (PLATE 36, FIG. 9, 9 a, b).*Lampides Coruscans*, Moore, Annals Nat. Hist. 1877, p. 341.

Male. Upperside brilliant glistening cobalt-blue: forewing with very narrow black speckle-bordered marginal band: hindwing with narrow black marginal line and speckled black spots. Cilia black, with whitish outer edge on forewing and inner white line on hindwing. Female fuliginous-black: forewing with greyish-blue basal and discal area: hindwing with greyish-blue lower basal area, a submarginal row of dentate marks, and a marginal row of blue-bordered black spots. Underside pale leaden grey: forewing with two narrow white transverse discal lines, a short upper intermediate streak, a short outer line, a double marginal row of white dentate marks with blackish intermediate space, and marginal line: hindwing with several interrupted narrow white transverse lines, a submarginal prominent double dentate line with black intermediate space, and marginal line; a large subanal ochreous-bordered black spot.

Expanse  $1\frac{2}{5}$  inch.

“Plentiful in the Kottawa forest, Galle. Easy to capture” (*Wade*).

“Western and Southern Provinces. Plains, in forest land; during S.W. monsoon, fluttering about bushes in open glades of the forest; not common” (*Hutchison*).

**Genus TALICADA.**

Forewing with the costa arched at the base, exterior margin obliquely convex; first subcostal branch emitted at one-half before end of the cell, ascending to and anastomosing with costal to near its end; second at one-fifth and third at one-sixth before end of the cell, fourth at beyond half from third and terminating at the apex; fifth from end of the cell; discocellulars slightly recurved, radial from their middle; cell more than half length of the wing, broad to near the base; middle median at one-sixth before end of the cell, lower at one-half before the end; submedian nearly straight: hindwing broadly oval; furnished with a single slender tail from end of lower median vein; costal vein much arched from the base; first subcostal at one-third before end of the cell; discocellulars slightly recurved, radial from their middle; cell not extending to half the wing; middle median from near end of the cell, lower at more than half before the end; submedian and internal straight. Body moderate; palpi porrect, flattened, second joint laxly squamose beneath, third joint long, slender; legs slender; antennal club stout. Allied to Scolitantides.

*Type*, T. Nyseus.

**TALICADA NYSEUS** (PLATE 39, FIG. 1, 1 a, b).*Polyommatus Nyseus*, Guérin, Delessert's Voy. Inde, p. 78, pl. 22, fig. 1 (1843).

Upperside blackish violet-brown: hindwing with a broad scarlet band occupying the lower two-thirds of the outer area. Cilia spotted with white. Underside white: forewing with a broad black outer band, crossed by two submarginal series of white spots and a marginal lunular line; a black spot at end of the cell: hindwing with a black basal spot, three subbasal, three medial, and in the female a more or less perfect discal series; the apex of the wing also black; lower outer margin broadly scarlet, traversed by a row of white spots and a marginal lunular line, bordered with black dentate marks. Palpi and legs black above, banded with white; antennæ annulated with white.

Expanse  $1\frac{2}{8}$  to  $1\frac{3}{8}$  inch.

Larva onisciform; pale olive-yellow, with a slender green dorsal line and a lateral row of black dots. Pupa pale olive-yellow, dotted with black.

“Feeds on Bryophyllum” (*Thwaites*).

“Western and Central Provinces. Plains and nearly up to 4000 feet; generally on borders of cultivated ground, apparently all the year round. Flight slow; flits about low shrubs and settles on the ground” (*Hutchison*).

“Kandy and Galle. Common” (*Wade*).

**Genus CATAPÆCILMA.***Catapæcilma*, Butler, Trans. Linn. Soc. 2nd ser. Zool. i. p. 547 (1877-9).

Wings short: forewing triangular, broad; exterior margin slightly scalloped; first subcostal branch emitted at nearly one-half before end of the cell, free from costal; second at one-fourth before the end, third from close to the end and terminating at the apex, fourth from end of the cell; discocellulars erect, slightly waved, radial from their middle; cell broad at the end; middle median at one-fifth before end of the cell, lower at nearly one-half before the end; submedian straight: hindwing short; exterior margin slightly scalloped, abdominal margin long; furnished with three slender tails in both sexes; costal vein very convex at the base; first subcostal branch at one-third before end of the cell; discocellulars erect, radial from their middle; cell broad; middle median branch from close to end of the cell, lower at nearly one-half before the end; submedian slightly curved, internal much recurved. Body short, stout; palpi porrect, slender, very flat, second joint projecting more than half length beyond the head, pilose beneath, third joint slender; legs short; antennæ with a gradually formed slender club.

*Type*, C. Elegans.

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**CATAPÆCILMA ELEGANS** (PLATE 39, FIG. 3, 3a).

*Hypochrysops Elegans*, Druce, Proc. Zool. Soc. Lond. 1873, p. 350, pl. 32, fig. 12.

*Catapæcilma Elegans*, Butler, Trans. Linn. Soc. 2nd ser. Zool. i. p. 548.

Male. Upperside violet-blue; both wings with a very narrow violet-brown marginal border: hindwing with a slender white marginal lunular line and a bluish lunular streak from anal angle; cilia bluish-white, alternated on the forewing with brown. Female greyish-blue, with broad brown costal and exterior band: hindwing with marginal markings as in male. Underside purplish-grey: forewing with two silver-bordered red spots in the cell, one at its end and another beyond it, two lower discal silver-bordered black spots; a submarginal and marginal row of silver spots, the submarginal row slightly black-bordered on their outer side, and the marginal row with a small black upper and lower confluent spot, the two series interspaced by straggling parallel black streaks: hindwing with six silver-bordered red spots disposed on the basal area, two transverse discal red bands bordered inwardly by a silver line and outwardly by black streaks; a marginal silver macular band, the subanal spot black streaked; tails black tipped with white. Palpi reddish-purple, sides silver-streaked; legs grey, with red bands; antennæ brown with reddish bands and tip.

Expanse, ♂ 1½, ♀ 1⅓ inch.

“Kandy. Common” (*Wade*).

**Genus HORAGA.**

Forewing short, triangular; costa gently arched, apex acute, exterior margin slightly oblique, even; costal vein recurved; first subcostal branch emitted at half length of the cell, second at one-third, and third close to the end, fourth from its end; cell recurved, broad; discocellulars nearly erect, radial from their middle; middle median branch from near end of the cell, lower at one-third before the end; submedian straight: hindwing short, broad, bluntly oval; exterior margin uneven, furnished with three slender tails; costal vein much curved its entire length; first subcostal branch at one-third before end of the cell; discocellulars oblique, radial from their middle; two upper median branches from end of the cell, lower at one-third before the end; submedian slightly curved, internal recurved. Body short, thorax stout; palpi porrect, second joint squamose, slender, extending half beyond the head; third joint cylindrical, one-third length of second; legs short; antennæ short, gradually thickening to a pointed club.

*Type*, H. Onyx.

**HORAGA CINIATA** (PLATE 39, FIG. 2, 2a).

*Myrina Ciniata*, Hewitson, Ill. D. Lep. Lyc. p. 35, pl. 14, f. 30, 31 (1863); *id.* Suppl. p. 6, pl. 3, f. 84 (1869).

Male and female. Upperside violet-black; lower basal and discal areas blue: forewing with a large oval white medial discal spot: hindwing with a slender white marginal line. Underside pale brownish-ochreous; a white band crossing both wings, the band bulged outward on the disc of the forewing: hindwing with a slender white marginal line; a series of black spots from anal angle, the penultimate spot nearly obliterated by grey scales; a lunular band of metallic-green scales above each spot and two streaks above anal angle. Palpi black, grey speckled at the sides; legs white with black bands.

Expanse, ♂  $1\frac{1}{8}$ , ♀  $1\frac{2}{8}$  inch.

“Kandy. Rare. Easy to capture. Rests on low bushes. Is by no means shy, and when disturbed does not fly far” (*Wade*).

Genus **RATHINDA**.

Wings small: forewing short, triangular; costa arched in the middle, exterior margin slightly convex; costal vein very short, not extending to quite half the wing; first subcostal emitted at half length of the cell, second at one-third, and the third at one-fifth before the end, fourth from end of the cell; discocellulars nearly erect, radial from their middle; cell extending to more than half the wing; middle median at one-sixth, lower at one-fifth before end of the cell; submedian slightly waved: hindwing short, broadly oval, exterior margin indented above end of upper median vein and thence broadly lobular to anal angle; both sexes furnished with three slender tails; costal vein arched at the base; first subcostal at one-fourth before end of the cell; discocellulars recurved, radial from their middle; cell broad; middle median at one-sixth, lower at one-third before end of the cell; submedian straight, internal recurved. Body moderate, abdomen extending to anal angle; palpi very long, porrect, slender, second joint extending two-thirds beyond the head, third joint one-third length of second; legs squamose; antennæ with a gradually thickened club.

*Type*, R. Amor.

**RATHINDA AMOR** (PLATE 42, FIG. 1, 1a).

*Papilio Amor*, Fabricius, Syst. Ent. p. 518 (1775).

*Zephyrius Amor*, Guérin, Icon. Rég. Anim. Ius. pl. 81, f. 6.

*Myrina Amor*, Butler, Catal. Fabrician Lep. B. M. p. 184.

*Papilio Triopas*, Cramer, Pap. Exot. iv. pl. 320, f. G, II (1782).

Upperside violet-brown: forewing with an ochreous-white spot beyond end of the cell, and two less distinct smaller spots obliquely below it: hindwing with a

marginal row of red lunules from anal angle outwardly bordered by a slender white line. Underside pale ochreous-brown or greyish-ochreous; basal area of forewing with ochreous or white-bordered black spots; a curved white oblique black-bordered discal band and a slender marginal line; a short waved streak on lower end of discal band; basal area of hindwing with ochreous or white-bordered black spots, a curved medial sinuous black line, a more even discal line, and a submarginal line, the latter white within and bordered by metallic-green lunules, the subanal spaces also black-speckled. Palpi brown above, white beneath; legs white with black bands.

Expanse, ♂ 1, ♀  $1\frac{1}{4}$  inch.

“Eastern and Western Provinces. In low country forests during S.W. monsoon—May to September. Flutters about among the trees and settles on the leaves. Easily captured” (*Hutchison*).

“Kandy; Galle. Common” (*Wade*).

#### Genus ZESIUS.

*Zesius*, Hübner, Verz. bek. Schmett. p. 77 (1816).

Forewing triangular; costal vein short, curved; first subcostal emitted at one-half, second at one-third before end of the cell, third trifold, emitted close to end of the cell, fourth at one-half and fifth at beyond two-thirds; discocellular slightly recurved, upper radial from end of the cell, lower from middle of discocellular; cell short, broad; middle median at one-sixth before end of the cell, lower at nearly half before the end; submedian nearly straight: hindwing short, broadly produced hindward; apical margin very convex, exterior margin angled at end of middle and lower median veins and at the submedian vein, with a slender tail from the lower median and submedian in the male and a third tail from the middle median in the female; costal vein much arched from the base; first subcostal emitted at one-half before end of the cell; discocellulars slightly obliquely recurved, radial from their middle; cell broad; middle median from one-sixth and lower at nearly one-half before end of the cell; submedian straight, internal much recurved. Body stout; palpi long, slender, porrect, squamose, second joint projecting half beyond the head, third joint very slender, one-fourth length of second, pointed; legs squamose; antennæ with a lengthened club gradually thickening to tip.

*Type*, *Z. Chrysomallus*.

#### **ZESIUS CHRYSOMALLUS** (PLATE 40, FIG. 4, 4a, ♂ ♀, 4b, larva).

*Zesius Chrysomallus*, Hübner, Zutr. Exot. Schmett. fig. 301, 302 (1823), ♂.

*Dipsas Chrysomallus*, Moore, Catal. Lep. E. I. C. i. p. 33 (1857), ♂ ♀.

*Ialmenus Chrysomallus*, Hewitson, Illust. D. Lep. pl. 24, f. 4, 5.

Male. Upperside pale cupreous-red, costal and outer borders narrowly brown:



hindwing with three black spots from anal angle, bordered by a marginal slender greyish-blue line. Female violet-brown, the basal and discal medial areas, including the cell, pale blue: hindwing with an outer marginal slender black and white line and blackish pale-bordered spots, the second and third anal spot darkest, the third bordered within by a red lunule; tails with red and white borders. Underside greyish buff-white: forewing with two pale reddish-brown spots within the cell, another below the cell, a paler discocellular lunule, a transverse catenulated band, and a less distinct submarginal lunular line: hindwing with two reddish-brown spots on inner side of costal vein, two within the cell, two below the cell, one on abdominal margin, a paler discocellular lunule, a broken catenulated discal band bent up at lower end, and a submarginal lunular line; three anal black spots, the first and third with red inner border, the middle spot almost obliterated by blue-grey speckles. Body and palpi above brown.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{7}{8}$  inch.

Larva elongated, dorsally thickened, sloping at both ends; green, the segments with lateral purple-brown small pointed tubercles, which are stouter and longer on the anterior; a pale yellowish lateral line between the tubercles. Earlier stage purple-brown. Pupa green, spotted with purple-brown.

“Feeds on Terminalia” (*Thwaites*).

“Colombo. On cashew-trees in the cinnamon gardens. Flight rapid, darting from tree to tree, often settling on the cashew and cinnamon leaves” (*Hutchison*).

“Kandy; Hambantotte; Colombo; settles on rather high bushes; when disturbed circles round and soon returns. Common” (*Wade*).

#### Genus IRAOTA.

Forewing triangular; exterior margin slightly oblique and convex below the apex; cell somewhat fusiform, extending to more than half the wing; costal vein curved; first subcostal emitted at more than half before end of the cell, second at one-third, and third at one-fifth before end of the cell, third trifold, fourth at more than one-half from below third, fifth at one-half from below fourth and terminating below the apex; discocellulars bent inward close to subcostal, upper radial from subcostal end of the cell, lower radial from the angle close to subcostal; middle median at one-fifth, lower at one-third before end of the cell; submedian nearly straight. Male with a tuft of hair on underside of posterior margin: hindwing short, produced and lobed at anal angle; a slender tail from end of submedian vein in male, and in female a second tail from lower median vein; exterior margin slightly sinuous; male with a slightly indicated glandular space between the base of costal and subcostal veins; costal vein much arched at the base; first subcostal at nearly one-half before

end of the cell; discocellulars concave, acutely angled in the middle, radial from their angle; upper median from close to end of the cell, lower at nearly one-half before the end; submedian straight, internal recurved. Body robust; palpi porrect, second joint squamose, projecting slightly beyond the head, third joint slender; legs squamose, femora slightly pilose beneath; antennæ gradually thickened to tip.

**IRAOTA MÆCENAS** (PLATE 40, FIG. 2, 2a, ♀, 2b, larva).

*Hesperia Mæcenas*, Fabricius, Ent. Syst. iii. 1, p. 271 (1793); Donovan, Ins. of China, t. 39, f. 2.

*Deudorix Mæcenas*, Hewitson, Illust. Diurn. Lep. p. 25; Butler, Catal. Fabr. Lep. B. M. p. 180.

*Deudorix Timoleon*, var. Hewits. l.c. pl. 8, fig. 21.

Male and female. Upperside violet-black; lower discal area deep metallic-blue. Underside dark chestnut-brown: forewing with a white discoidal streak, a large discocellular spot, some transverse discal speckled spots, and lower submarginal lunular spots; posterior border also white: hindwing with a basal slender white-speckled curved line, some sinuous lines below the cell, an indistinct discal and a submarginal lunular line, and slender marginal line, the discal and anal area also minutely white-speckled; anal lobe and spot beyond black.

Expanse, ♂  $1\frac{4}{8}$ , ♀  $1\frac{1}{8}$  inch.

Larva onisciform; dorsally thickened, sloping obliquely at each end; pale green, with rows of small circular spots and longitudinally intervening pale pink bands. Pupa short, very broad laterally; purple-brown, with darker dorsal bands and segmental spots.

“Feeds on *Ficus religiosa*” (*Thwaites*).

**Genus DEUDORIX.**

*Deudorix*, Hewitson, Illust. Diurnal Lep. p. 16 (1863).

Forewing triangular; apex acute, exterior margin oblique, almost even, angle acute, posterior margin straight; costal vein arched in the middle; first subcostal emitted at two-fifths, second at one-fifth, and third immediately before end of the cell, fourth at one-half from below third and terminating at the apex, fifth from end of the cell; discocellulars concave, angled in the middle, radial from their angle; cell long, widest in the middle; middle median branch at one-sixth and lower at two-fifths before end of the cell; submedian recurved: hindwing short, produced hindward, exterior margin uneven; both sexes with a slender tail from lower median vein, lobated at anal angle; costal vein much arched at the base; first subcostal emitted at one-fourth before end of the cell; discocellulars oblique, slender, radial from their middle; cell short, broad at the end; middle median from very near the end of the cell, lower at one-third before the end; submedian straight, internal recurved. Body

robust; palpi porrect, second joint projecting one-third beyond the head, attenuated at apex, clothed with adpressed compact scales; third joint very slender, about one-fourth length of second in male, longer in female; legs squamose, femora slightly pilose beneath; antennæ long, extending beyond half the wing, club evenly formed.

*Type*, D. Epijarbas.

**DEUDORIX EPIJARBAS** (PLATE 39, FIG. 4, 4a, ♂ ♀).

*Dipsas Epijarbas*, Moore, Catal. Lep. Mus. E. I. C. i. p. 32 (1857).

*Deudorix Epijarbas*, Hewitson, Illust. Diurnal Lep. pl. 7, fig. 16, 17, 18.

Male. Upperside red: forewing with a broad black costal and outer marginal band, the posterior margin also black; hindwing with the costal area broadly black; abdominal margin greyish-brown; an anal spot, fringe, and tail black; veins of both wings also black. Female olive-brown. Underside pale vinous-brown in male, ochreous-grey in female: forewing with two slender white discocellular streaks and two transverse discal lines, and a less distinct marginal line: hindwing with two discocellular streaks, two curved discal broken lines, and a less distinct marginal line; anal lobe black, a red-bordered black spot between middle and lower median veins, a metallic-green and black-speckled streak above anal lobe. Front and sides of head, palpi beneath, and legs white, palpi above and bands on legs black.

Expanse  $1\frac{1}{2}$  inch.

“Western and Central Provinces. Near forests. Plains and up to 3000 feet. Chiefly during S.W. monsoon, but found also at other times. Flight rapid, darting from bush to bush. Taken also at Newera Eliya, 6000 feet” (*Hutchison*).

**DEUDORIX LANKANA** (PLATE 39, FIG. 5 ♀).

*Deudorix Lankana*, Moore, Proc. Zool. Soc. Lond. 1879, p. 141, ♀.

Female. Upperside pale violet-brown, marginal line black; cilia pale ferruginous; anal lobe ferruginous; tail black; cilia at anal angle and beyond tail white. Underside pale ferruginous, the margin darker; crossed by a narrow ferruginous-brown discal band; a black spot at anal lobe and a speckled spot beyond, both of which and the end of the band are bordered with white speckles. Legs blackish, banded with white.

Expanse  $1\frac{4}{8}$  inch.

Captured on the edge of high jungle in the Kottawah forest, near Galle, by Captain Wade.

I place this insect in *Deudorix* provisionally, not knowing the male.

## Genus VIRACHOLA.

Allied to *Deudorix*. Forewing comparatively more triangular, costa longer, exterior margin more oblique; the posterior margin in the male convexly produced towards the base and furnished beneath with a broad tuft of long hairs; veins similar, but the third and fifth subcostals emitted from end of the cell, the middle and lower medians somewhat nearer end of the cell, the submedian straight: hindwing more convex along the apical border, which in the male has a large rounded depressed roughened glandular space extending from beneath the costal vein across the two subcostal branches to upper part of the cell, both of the subcostal branches being grooved within the depressed area.

*Type*, *V. Perse*.

**VIRACHOLA PERSE** (PLATE 40, FIG. 1, 1a, ♂ ♀).

*Deudorix Perse*, Hewitson, *Illust. Diurnal Lep.* p. 18, pl. 8, fig. 24, 25, 26 (1863).

Upperside dark violet-brown; lower basal and discal areas blue: forewing with the discoidal cell and adjacent costal area blackish; a bright ochreous patch beyond the cell in male, whitish in female: hindwing with indistinct black spots from anal angle, and a slight blue marginal line; tail white tipped. Underside pale violet greyish-brown: forewing with a whitish-bordered brown discocellular spot, a discal catenulated band, and two less distinct marginal bands: hindwing with a similar marked spot below the costal vein, one on middle of abdominal margin, a figure of eight discocellular spot, a discal catenulated band the end of which is bent upward to the internal vein, and two less distinct marginal lunular lines; lobe spot large and anal streaks above it black, slightly green-speckled; markings of the female beneath very prominent.

Expanse, ♂  $1\frac{3}{4}$ , ♀  $2\frac{1}{4}$  inches.

“Eastern Province. . Plains; forest land. Rare. August” (*Hutchison*).

**VIRACHOLA ISOCRATES.**

*Hesperia Isocrates*, Fabricius, *Ent. Syst.* iii. p. 266 (1793), ♂.

*Thecla Isocrates*, Westwood, *Trans. Ent. Soc.* ii. p. 4, pl. 1 (1836).

*Deudorix Isocrates*, Butler, *Catal. Fabrician Lep. Brit. Mus.* p. 181.

*Hesperia Pan*, Fabricius, *Ent. Syst.* iii. p. 275, ♀; Donovan, *Ins. India*, pl. 38, f. 1.

Male. Upperside deep violet-blue: forewing with a very indistinct ochreous spot, visible only in certain lights, beyond the cell: hindwing with a slender black marginal line and small anal spots, the latter grey-speckled. Cilia greyish-white. Female violet-brown: forewing with a more distinct ochreous spot beyond the cell, which is diffused hindward in some specimens: hindwing with a prominent

subanal black spot which is inwardly bordered with ochreous and outwardly by grey-white speckles, the speckles continuing to anal angle. Underside pale vinous-grey: both wings with a white-bordered discocellular streak, a discal transverse broad catenulated band, and a less distinct single white submarginal line; a large black anal and subanal spot, the former inwardly white-bordered, the latter with ochreous border, intervening space blue-speckled.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{5}{8}$  inch.

“Hambantotte. In pathways running through dense jungle. In July” (*Wade*).

#### Genus RAPALA.

Allied to *Virachola*. Wings small: forewing comparatively shorter and less acutely triangular in form; exterior margin slightly convex; furnished with a broad tuft of hair on middle of posterior margin beneath: hindwing less produced hindward, more convex exteriorly; anal angle lobed; a single tail from end of lower median vein; male with a broad conical-shaped glandular depression between the costal and subcostal veins, but which does not extend below the subcostal. Palpi shorter, second joint more laxly squamose.

*Type*, *R. Varuna*.

#### RAPALA LAZULINA (PLATE 40, FIG. 3, 3a, ♂).

*Deudorix Lazulina*, Moore, Proc. Zool. Soc. Lond. 1879, p. 140.

Male. Upperside dull dark lazuline-blue, outer borders black, abdominal margin grey, anal lobe black; cilia edged with grey. Underside brownish-grey: forewing crossed by a discal band of two narrow white lunular lines, and a short streak at end of the cell: hindwing crossed by similar irregular bands, the discal bent upward to middle of anal margin; a black spot bordered above with ochreous at anal angle and another beyond. Female purple violet-grey above, the borders violet-brown; ochreous-grey beneath; marked as in male.

Expanse  $1\frac{1}{4}$  inch.

Allied to the Javan *R. Varuna* (Horsf. Catal. Lep. E. I. C., p. 91), and to *R. Orseis*, from Singapore.

“Kandy. Common” (*Wade*).

“Kandy and Kaduganawa; scarce” (*Mackwood*).

#### Genus APHNÆUS.

*Aphnaeus*, Hübner, Verz. bek. Schmett. p. 81 (1816); Hewitson, Illust. D. Lep. p. 60.

*Cigaritis* (part), Lucas, Explor. Alg. Zool. iii. p. 362 (1849).

*Spindasis*, Wallengren, Lep. Rhop. Caffraria, p. 45 (1857).

Wings small: forewing triangular; first subcostal vein emitted at one-half and second at one-third before end of the cell, third and fifth emitted together at a short

distance beyond end of the cell, fourth at two-thirds from below third and terminating at apex; discocellulars obliquely recurved, radial from their middle; middle median close to end of the cell, lower at one-half before the end; submedian straight; hindwing conical; costa gently arched, abdominal margin long, anal angle lobed; furnished with two tails; costal vein arched at base and curved to apex; first subcostal at one-fourth before end of the cell; discocellulars recurved, radial from their middle; middle median from close to end of the cell, lower at one-half before the end; submedian straight, internal recurved. Body short, robust; palpi porrect, squamose, second joint long, third short; legs squamose, femora slightly pilose beneath; antennal club long, stout.

*Type*, A. Orcas, Drury.

**APHNÆUS SCHISTACEA** (PLATE 41, FIG. 3, 3 a, b, ♂ ♀).

Male and female. Upperside greyish violet-brown; basal areas slightly grey-blue: forewing with three or four more or less prominent orange-yellow transverse streaks, the two middle often bifid, and in the female often also joined at the lower end to the outer streaks; an orange-yellow anal patch and two black spots at the angle. Underside pale yellow: forewing with a black-bordered red spot at base of the discocellular cell, a band across middle of the cell, a lengthened band at its end and crossing obliquely to near posterior angle, two short bands beyond, followed by a submarginal and a marginal band, each band proceeding from the costal margin, and all but the outer traversed by a silver line: hindwing with a lengthened similar band extending irregularly from the costa down the abdominal margin, two transverse medial bands, an upper discal band, and a submarginal band, the latter and outer medial band confluent at their lower end and extending into a red anal patch; marginal line and an inner row of narrow spots, and two spots on anal lobe black.

Expanse, ♂  $1\frac{2}{10}$ , ♀  $1\frac{4}{10}$  inch.

“Colombo. Common” (*Wade*).

**APHNÆUS FUSCA** (PLATE 41, FIG. 2, 2 a, b, ♂ ♀).

Male and female. Upperside uniform purplish violet-brown: forewing with two slender indistinct orange-red streaks in male and three or four in female: hindwing with a narrow orange-red anal patch spotted with black. Underside pale yellow; crossed by black-bordered silver-streaked red bands (similar to those in *A. schistacea*), but these are comparatively broader and more confluent.

Expanse, ♂ 1, ♀  $1\frac{2}{10}$  inch.

“Colombo. In cinnamon gardens. Has a quick flight; almost invariably settles on the leaves of cinnamon plants” (*Hutchison*).

**APHNÆUS LAZULARIA** (PLATE 41, FIG. 1, 1 a, b, ♂ ♀, 1 c, larva).

Male. Upperside violet-brown; basal areas lazuline-blue; anal lobe with a dull orange-red patch and silver-speckled black spots. Female olive-brown, with indistinct ochreous-grey transverse fasciæ; basal areas slightly bluish-grey; anal lobe brighter red. Underside pale ochreous-yellow: forewing with a deep purple-red silver-streaked basal triangular band, a band extending across and over the middle of the cell, one at the end, a short confluent double band beyond, a submarginal and a confluent slender marginal band: hindwing with two transverse basal similar bands, two discal, a submarginal, and a slender marginal band; anal lobe bright red, black spots large and silver-bordered; no black marginal line on any of the bands. In some specimens of the male the interspace between all the bands is nearly of the same deep red colour as the bands, this variety being represented in Hewitson's *Diurnal Lep.* pl. 25, fig. 10, as pertaining to *A. Lohita*.

Expanse  $1\frac{2}{3}$  to  $1\frac{4}{5}$  inch.

Larva fusiform, head prominent; head and segments laterally minutely pilose; greyish purple-brown minutely white-speckled, each segment with a blackish transverse band and white lateral streak. Pupa attenuated, thorax angular at the sides; purple-brown.

"Feeds on Convolvulacæ" (*Thwaites*).

"Kandy; Hambantotte. Common. Frequents low thorny bushes. When disturbed flies round and darts about very fast, but does not go far, soon returning to settle" (*Wade*).

**APHNÆUS ICTIS.**

*Aphnaeus Ictis*, Hewitson, *Illust. Diurnal Lep.* p. 61, pl. 25, fig. 8, 9 (1865), ♀.

*Spindasis Ceylonica*, Felder, *Verh. Zool. Bot. Gesch.* 1868, p. 281, ♂.

Male. Upperside purple violet-brown; lower discal areas glossed with ultramarine-blue: forewing with a small somewhat triangular orange-red spot; anal lobe also red and spotted with black. Underside pale dull sulphur-yellow, the transverse markings of a slightly darker ochreous-yellow, all with a black-bordered line and central silvery streak; exterior margin of both wings with a row of slender black spots. Female. Upperside brown; basal areas greyish vinous-brown, the orange spot on forewing large, broad, obliquely divided, and occupying the discal area.

Expanse, ♂  $1\frac{2}{10}$ , ♀  $1\frac{4}{10}$  inch.

Mr. Hewitson (*loc. cit.*) gives N. India as the locality of *A. Ictis*. His description and figures are taken from a female specimen (so labelled by him) in the British Museum Collection, which, though ticketed as from Ceylon, is not so stated by him. The variety which he indicates as "having the orange space on forewing smaller" is

the N. Indian specimen referred to as being in his own collection, and which he mistook to be the same as the Ceylon type. The Indian specimen so noted by him belongs to a distinct species, common in Upper India.

#### Genus PRATAPA.

Allied to *Iolaus* and *Camena*. From the latter it differs in having the forewing narrower and comparatively longer, the costa straighter: hindwing shorter, less produced hindward, the exterior margin below the apex even; second joint of palpi longer and the third joint shorter; a tuft on posterior margin of forewing and glandular costal patch on hindwing as in *Camena*. From typical *Iolaus* (*I. Helius*) this genus differs in the more triangular form of forewing, the hindwing having an uniformly arched costa with the costal vein extending to its apex; the cell is less triangular, the discocellulars shorter and recurved.

*Type*, P. Deva.

#### PRATAPA DEVA.

*Amblypodia Deva*, Moore, Catal. Lep. Mus. E. I. C. i. p. 46 (1857).

*Iolaus Deva*, Hewitson, Illust. Diurnal Lep. pl. 18, fig. 3, 4, 5.

Male. Upperside: forewing with the basal posterior area including the cell dark glossy purplish-blue, the costal margin and exterior border black, the division being evenly curved across the disc: hindwing with the medial discal area and beneath the cell to submedian vein glossy purplish-blue, the costal border including the cell and narrow outer marginal border black; two small marginal spots from anal angle; abdominal margin greyish. Female lavender-blue, with light brown borders: hindwing with black anal marginal spots. Underside cream-white; a slender black discal broken line and two very indistinct ochreous-brown marginal lines crossing both wings; fascicle of hair on posterior margin black: hindwing with an anal and subanal black spot, each broadly bordered with red.

Expanse  $1\frac{1}{2}$  inch.

Taken at Balangada, in October, by Mr. F. M. Mackwood.

#### Genus TAJURIA.

Differs from *Pratapa* in the absence of both the tuft of hair on forewing and the glandular patch on hindwing of the male. Forewing broader and more regularly triangular in form; venation similar: hindwing comparatively narrower and more produced hindward; cell broader, the subcostal and median branches emitted further from the base.

*Type*, T. Longinus.



**TAJURIA LONGINUS** (PLATE 42, FIG. 2, 2a, ♂ ♀, 2b, larva).*Hesperia Longinus*, Fabricius, Ent. Syst. Suppl. p. 430 (1798).*Amblypodia Longinus*, Horsfield, Catal. Lep. Mus. E. I. C. p. 110, pl. 1, fig. 7.*Polyommatus Longinus*, Lucas, Lep. Exot. pl. 44, f. 3.*Bithys Longinus*, Hübner, Zuträge, Exot. Schmett. fig. 933, 934.*Amblypodia Pseudolonginus*, Butler, Proc. Zool. Soc. Lond. 1867, p. 35.

Male. Upperside: forewing with the basal posterior area including the cell deep blue, costal and exterior border black, the division oblique across the disc; hindwing with the medial basal and discal areas including the cell deep blue, the costal border broadly and a slender marginal line black; a black spot on anal lobe; abdominal margin greyish-black. Female lavender-blue, darkest at the base: forewing with the costa and exterior border violet-brown, the division across the disc being curved: hindwing with the costal border broadly, a marginal macular band and a discal sinuous band violet-brown. Palpi black above, white beneath; legs white with black bands. Underside greyish-white, with a slender black discal broken line nearly obsolete on forewing, and indistinct ochreous-brown marginal lines, an anal and subanal black spot bordered with ochreous-yellow.

Expanse  $1\frac{1}{2}$  inch.

Larva distended anteriorly, excavated on the sides, dorsally contracted behind, and throughout transversely swollen, head small; purple-brown, with grey dorsal and lateral transverse fasciæ. Pupa purple-brown, short, thick, head truncate, excavated behind the thorax, dorsal segments produced.

"Feeds on Loranthaceæ" (*Thwaites*).

"Colombo. In cinnamon gardens. Rare. Flight rapid, darting. Settles on leaves of shrubs" (*Hutchison*).

"Numerous to the north of Kandy" (*Mackwood*).

"Kandy; Colombo, and Galle. Common" (*Wade*).

**Genus CHERITRA.**

Forewing triangular; costa uniformly arched to the tip, exterior margin oblique, posterior margin straight; first subcostal branch emitted at one-half and second at one-third before end of the cell, third immediately before the end, fourth at two-thirds from below the third and terminating at the apex, fifth from a slight angle at end of the cell; discocellular slightly waved, radial from their middle; cell very broad, long, extending to more than half the wing; middle median from close to end of the cell, lower at one-third before the end; submedian slightly waved: hindwing short, broadly truncate hindward; costa much arched at the base and very oblique to apex; exterior margin angled at end of upper and median veins, with a very long tail from lower median and a short tail from submedian vein; anal angle excavated above the lobe; male with a tuft of fine hair covering a glandular patch between

base of costal and subcostal veins; costal vein arched at the base; first subcostal at one-third before end of the cell; discocellulars outwardly oblique, radial from their middle; cell broad; middle median from immediately before end of the cell, lower at nearly one-half before the end; submedian nearly straight; internal much recurved. Body moderate; palpi porrect, second joint long, squamose, extending half length beyond the head, third joint one-fourth its length, slender; legs squamose, short; antennæ gradually thickened to end, tip pointed.

*Type*, C. Jafra.

#### CHERITRA PSEUDOJAFRA.

Male. Upperside purplish violet-blue, olivaceous-brown in some lights; marginal line black: hindwing with a large anal black patch bordered above and below by slender white lunules. Cilia and tail white. Female violet-brown, with broad white borders to black anal patch. Underside entirely white: forewing with a very indistinct slender black discal broken line and linear submarginal line: hindwing with a similar slender discal and submarginal sinuous line, and marginal lunules; a large inner and outer anal black spot and two smaller intervening spots, each speckled with metallic-green scales.

Expanse, ♂  $1\frac{6}{10}$ , ♀  $1\frac{7}{10}$  inch.

“Kornegalle and Lower Ambegamoa. Scarce” (*Mackwood*).

#### Genus LOXURA.

*Loxura*, Horsfield, Catal. Lep. Mus. E. I. C. p. 119 (1829).

Forewing subtriangular; costa very convex to the tip, apex pointed, exterior margin straight, slightly oblique, posterior margin long, nearly straight; costal vein extending to half the wing; first, second, and third subcostals at equal distances apart, first branch emitted at more than one-half before end of the cell, second at one-third, the third at one-fifth, fourth at one-half from below third and terminating at apex, fifth from a slight angle at end of the cell; discocellulars slightly concave, erect, radial from their middle; cell broad, longest at upper end; middle median branch at one-fifth and lower at one-third before end of the cell; submedian almost straight: hindwing short, produced hindward into a broad lengthened tail; exterior margin even, very oblique below the apex; abdominal margin very long, anal lobe moderate; costal vein arched at the base and thence straight to near the apex; first subcostal at one-third before end of the cell; discocellulars recurved, radial from their middle; cell broad; upper median from immediately before end of the cell, lower at nearly one-half before the end; submedian long, extending to anal angle; internal recurved. Body small, short; palpi porrect, very long, flattened and squamose throughout, second joint projecting two-thirds beyond the head, third

joint half its length; legs short, thick, squamose; antennæ short, one-third only of length of costa, thickened throughout its length.

*Type*, L. *Atymnus*.

**LOXURA ARCUATA** (PLATE 42, FIG. 4, 4a, ♂ ♀, 4b, larva).

Male. Upperside bright fulvous: forewing with a blackish apical marginal band, curving from middle of the costa to posterior angle: hindwing with a very slender indistinct blackish marginal band; abdominal margin and anal lobe, and tail, yellowish or brownish-fulvous. Female with broader marginal bands; basal areas, abdominal margin and tail more dusky than in male. Underside yellowish-ochreous; both wings crossed by two outer very indistinct narrow lunular bands. Palpi and legs white, speckled with black.

Expanse, ♂  $1\frac{4}{10}$ , ♀  $1\frac{5}{10}$  inch.

Larva slender, limaciform, anterior segments thickened, head small; green, with two dorsal white-striped marks. Pupa green; thorax oblique in front, anal segments attenuated.

"Feeds on Smilax" (*Thwaites*).

An intermediate species, nearer to *L. Prabhu* than to *Atymnus*.

"Western and Central Provinces. Plains and up to 2000 feet in forest ground. At any time. Flight slow; settles on the bushes, and easily caught" (*Hutchison*).

"Kandy and Galle. Common" (*Wade*).

"Very plentiful in March and April, but found nearly always; generally about 1000 to 2000 feet, but ranges as high as 3500 feet" (*Mackwood*).

**Genus BINDAHARA.**

Forewing short, triangular; costa much arched at the base, exterior margin oblique, posterior margin convex in the middle and furnished beneath with a tuft of hair; first subcostal emitted at nearly one-half, second at one-fifth, and third close before end of the cell, fourth at one-third from below the third, fifth from end of the cell; discocellulars recurved, radial from their middle; cell broad; middle median at one-fifth, lower at nearly one-half before end of the cell: hindwing short, attenuated hindward and produced into a very long tail, anal angle lobed; exterior margin sinuous towards the tail; furnished with a prominent costal glandular patch; costal vein abruptly arched at the base; first subcostal emitted at one-half before end of the cell; discocellulars oblique, radial from their middle; cell broad; middle median from immediately before end of the cell, lower at nearly one-half and extending to end of the tail; submedian straight, internal recurved. Body moderately stout; palpi porrect, second joint squamose, very long, extending two-thirds beyond the head, third joint one-third its length, slender, naked; legs squamose, femora slightly pilose beneath; antennæ with a lengthened pointed club.

**BINDAHARA PHOCIDES** (PLATE 42, FIG. 3, 3a, ♂ ♀).

*Hesperia Phocides*, Fabricius, Ent. Syst. iii. p. 282 (1793) ♀; Donovan, Nat. Rep. ii. pl. 44, f. 1.

*Myrina Phocides*, Butler, Catal. Fabrician Lep. B. M. p. 183.

*Amblypodia Sugriva*, Horsfield, Catal. Lep. Mus. E. I. C. p. 105, pl. 1, fig. 10, 10a (1829), ♂.

*Myrina Sugriva*, Moore, Catal. Lep. Mus. E. I. C. i. p. 51, pl. 1a, fig. 12.

Male. Upperside black: hindwing with the anal area and tail pale brownish-ochreous, a short blue narrow band along the exterior margin, at the lower end of which is a cluster of metallic-green scales; abdominal margin ochreous-black; a black-speckled spot on anal lobe. Female olive-brown, in some aspects glossy ænescent-brown; anal area and tail white, a large black spot at outer base of the tail, and a black-speckled spot on anal lobe. Underside. Male brownish-ochreous, merging to ochreous-brown on the apical areas: forewing with two broad medial transverse darker brown pale-bordered irregular-margined bands, followed by a submarginal indistinct slender dentated line and a row of outer dots: hindwing with four dark brown pale-bordered basal spots, a discocellular streak, a broad curved discal irregular catenulated band (the upper part of which only is dark brown), a submarginal sinuous line, and a marginal row of indistinct lunular spots; three anal black spots, the outer lobe spot large, the other two small and speckled with metallic-green scales. Palpi and legs ochreous-white, with black bands above. Female white beneath; marked as in male.

Expanse, ♂  $1\frac{4}{10}$  to  $1\frac{6}{10}$ , ♀  $1\frac{2}{10}$  to  $1\frac{4}{10}$  inch.

“Kandy and Galle. Male plentiful in the Botanical Gardens at Kandy. Difficult to capture, as they settle very high and are rather shy” (*Wade*).

Genus **SURENDRA**.

*Surendra*, Moore, Proc. Zool. Soc. Lond. 1878, p. 835.

Wings short: forewing broad; costa gently arched, apex acute; exterior margin erect, slightly concave below the apex, and convex in the middle, posterior margin waved; costal vein extending to half the wing; first subcostal emitted beyond one-half and second at nearly one-half before end of the cell, third from close to the end, bifid, fourth thrown off at beyond one-half and terminating at the apex, fifth from a slight angle at end of the cell; discocellulars recurved, nearly erect, of equal length, radial from their middle; the middle median from close to end of the cell, lower at one-third before the end; submedian nearly straight: hindwing somewhat quadrate; costa very slightly arched in the middle, apex almost pointed, exterior margin uneven, truncated posteriorly; male with a single tail from lower median vein, and the female with an additional shorter tail from middle median; anal lobe large; costal vein arched at the base; first subcostal emitted at one-third before end of the

cell; discocellulars oblique, concave, radial from the middle; two upper median branches from end of the cell, lower at one-third before the end; submedian straight, internal vein recurved. Body robust; palpi slender, second joint long, of equal width throughout, extending half beyond the head; third joint thin, one-third length of second; legs short, thickish, femora slightly pilose beneath; antennæ with a gradually thickened club.

*Type*, S. Quercetorum.

**SURENDRA DISCALIS** (PLATE 44, FIG. 1, 1a, ♂ ♀).

*Surendra Discalis*, Moore, Proc. Zool. Soc. Lond. 1879, p. 142.

Male. Upperside dark brown, lower basal and discal areas purplish violet-blue. Female ochreous-brown, slightly violet-tinted, and with a prominent ochreous discal patch. Underside greyish basally, ochreous-brown externally; both wings crossed with white-margined dark brown discocellular zigzag band, a sinuous discal line, and a submarginal similar dentated line.

Expanse  $1\frac{3}{10}$  inch.

"Matale. Garden hedges. August" (*Hutchison*).

"Kandy and Galle. Common" (*Wade*).

"Kandy and North Matale. Difficult to capture, from its habit of keeping within the protection of the thorny Acacias" (*Mackwood*).

**Genus AMBLYPODIA.**

*Amblypodia*, Horsfield, Catal. Lep. Mus. E. I. C. p. 98 (1828).

Wings broad: forewing arched at the base, apex pointed; exterior margin almost erect, slightly convex; posterior margin slightly waved; costal vein extending to more than half length of the margin; first subcostal branch emitted at half, second at nearly half, and third at one-sixth before end of the cell, third trifurcate in male, bifurcate in female, the fourth thrown off at two-thirds, and fifth at one-half from the fourth and terminating below the apex, sixth (or upper radial) from end of the cell; upper discocellular short, bent very obliquely outward, lower waved, lower radial from their angle near subcostal; cell broad; middle median emitted at one-fifth, lower at two-fifths before end of the cell; submedian slightly waved: hindwing broadly oval; costa much arched at base, apex and exterior margin very convex, concave hindward and produced into a short tail, anal lobe broad; costal vein arched at base and curving to apex; first subcostal at nearly one-half before end of the cell; discocellular slightly concave, oblique, radial from the middle; cell broad; middle median from close to end of the cell, lower at nearly one-half before the end; submedian slightly curved, internal vein recurved. Body robust, thorax stout; palpi porrect, adpressed, second joint squamose, extending one-third beyond the head,

third joint short, pointed; legs short, thickish; antennæ gradually thickening to the tip.

*Type*, A. Narada.

**AMBLYPODIA NARADOIDES** (PLATE 43, FIG. 2, ♀).

*Amblypodia Naradoides*, Moore, Proc. Zool. Soc. Lond. 1879, p. 141.

**Male.** Upperside dark violet purple-brown, with a broad dusky black marginal band; anal lobe and tail chestnut-brown, the angle white-speckled. Underside dark purple-brown; transverse band, speckled marks on basal area, and a submarginal series of speckled spots black, the latter and anal angle white-speckled. **Female.** Upperside dark brown: forewing with the lower basal and discal area smalt-blue. Underside pale brownish-grey, transverse line and speckled markings black; anal angle ferruginous.

Expanse, ♂  $1\frac{1}{8}$ , ♀  $1\frac{1}{8}$  inch.

A much darker insect than the Javan species *A. Narada*, Horsf.

“Western Province. Plains, in forest land, chiefly during S.W. monsoon, from May to October. Flight like *N. Amantes*. Generally rests on leaves, sometimes, but rarely on the ground” (*Hutchison*).

“Kandy. Rather scarce” (*Wade*).

**AMBLYPODIA DARANA** (PLATE 43, FIG. 1, 1a, ♀).

*Amblypodia Darana*, Moore, Proc. Zool. Soc. Lond. 1879, p. 141.

Differs from *A. Naradoides* in being larger, the upperside of the male of a deeper violet-blue, and the marginal band narrower; anal lobe red only in the middle, its margin and the tail black. Underside purple chestnut-brown; speckled markings black, the marginal series white-speckled. Female uniformly pale violet-brown above; underside similar.

Expanse, ♂  $1\frac{9}{10}$ , ♀  $2\frac{1}{8}$  inches.

“Kottawah Forest, near Galle. Rare” (*Wade*).

**Genus NILASERA.**

*Amblypodia* (part), Auctorum.

Wings ample: forewing subtriangular; costa much arched from the base, apex acute, exterior margin very slightly oblique and convex at lower angle, posterior margin recurved; costal vein short extending only to one-third the margin, subcostal branches at equal distances apart, first branch at three-fifths before end of the cell,

fourth at two-thirds from third and terminating at the apex, fifth from end of cell; upper discocellular shortest, oblique, lower erect, radial from their angle; cell long, more than half length of wing; middle median at one-fifth and lower at two-fifths before end of the cell; submedian straight: hindwing broadly oval; apical border very convex, a short thickish tail from lower median vein, anal angle somewhat pointed and not lobed; costal vein abruptly arched from base; first subcostal at nearly one-half before end of the cell; upper discocellular shortest, outwardly oblique, lower recurved, radial from their angle; middle median at one-sixth and lower at one-third before end of the cell; submedian nearly straight, internal recurved. Body robust, thorax stout; palpi porrect, second joint very flat, attenuated towards the apex, squamose, projecting half beyond the head, third joint slender in female, one-third length of second; legs squamose; antennæ gradually thickening towards the end, tip more slender.

*Type*, N. Centaurus, Fabr.

**NILASERA AMANTES** (PLATE 44, FIG. 2, 2a, 2b, ♂ ♀, 2c, larva).

*Amblypodia Amantes*, Hewitson, Catal. Lycænida Brit. Mus. p. 4, pl. 2, fig. 1, 2, 3, ♂ ♀ (1862).

Male. Upperside deep ultramarine-blue; costal and exterior margin with a slender black band. Female paler blue, inclining to cobalt; with broader marginal bands. Underside purple-grey: forewing with three white-bordered brown discoidal spots, a broad catenulated discal band, and a streak below end of the cell, two pale streaks below the cell, and two indistinct submarginal lunular fasciæ: hindwing with pale-bordered black-ringed basal spots, discocellular streak, and an irregular discal band; two indistinct submarginal fasciæ; a black spot at anal angle and green-speckled streak beyond.

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

Larva elongated, oval, depressed at the ends, anterior segment scutate, with a lateral row of fine short hair; green, with two subdorsal reddish lines, a patch on second and last segments, the interdorsal space marked with blackish spots and lines; a lateral row of spots. Pupa broad, thorax convex, head slightly produced; thorax and wing cases greenish, abdomen reddish.

“Colombo. Shrubby parts of cinnamon gardens, about May to end of June. Flight strong, rapid; conceals itself under leaves with wings always folded” (*Hutchison*).

“Common at Colombo” (*Wade*).

“Colombo. Cinnamon gardens and low country generally, fond of resting on the leaves of the Mango-tree” (*Mackwood*).

**NILASERA PIRAMA** (PLATE 43, FIG. 3, 3 a, b, ♂ ♀, 3c, larva).

Male. Upperside brilliant ultramarine-blue; both wings with marginal black band. Female purplish-blue, merging to greyish-blue at the base; marginal bands broad. Underside brown, suffused with purple-grey: forewing with slender white-bordered discoidal marks, less defined discal band, streaks below the cell, and submarginal fasciæ: hindwing with very indistinct browner basal spots, discal band, and submarginal lunular line; a few green speckles above anal angle.

Expanse  $1\frac{7}{8}$  inch.

Larva elongated, oval, depressed, anterior segment scutate; finely pilose along the sides; colour green, with dorsal and lateral reddish marks, and an intervening subdorsal slender black line. Pupa green; dorsal segments reddish.

“Feeds on *Schleichera trijuga*” (*Thwaites*).

Is nearest allied to the Javan *N. pseudocentaurus*, and is quite distinct from both the Indian *N. Centaurus*, and the Malayan *N. Nakula*.

“Kandy and Galle. Common; but settles rather high” (*Wade*).

“Colombo, and low country” (*Mackwood*).

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**Family PAPILIONIDÆ.**

Six perfect legs in both sexes. Pupa secured by the tail and a girdle across the middle.

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**Subfamily PIERINÆ.**

Abdominal margin of the hindwing not curved inwards.

“This family of butterflies contains several species which are remarkable, like some of the Euploeinæ, for their apparently migratory flights. In the Pierinæ, however, these flights are still more extraordinary. At certain times of the year immense hosts of these butterflies, mostly of a white colour or nearly white, may be observed during the hottest part of the day rushing in an impetuous flight across the country, driven by some irresistible instinctive impulse, and impatient of any obstruction in their headlong course; even ascending hills of 6000 feet in elevation, and descending again; striking like animated snow-flakes against any one meeting them in their course and then, after passing the obstruction, making on with the same pertinacity as before, towards where they are hurrying to, until the failure of sunshine arrests their progress for the day; to be continued probably on succeeding days until the



wondrous furor has exhausted itself. By the superstitious natives these marvellous movements of white butterflies are attributed to a desire on the part of the insects to do homage to the footstep of Buddha on Adam's Peak, moved, as the native himself is to do so at certain times of the year. But the phenomenon itself, apart from the native idea, is well worthy of study by any one who has time and opportunities to devote to it:—It would be interesting to ascertain; *firstly*, whence these butterfly hosts come, and where their feeding-grounds when in their larval state; *secondly*, to determine if the immense numbers of these butterflies, which have halted for the night, wake up in the early morning to continue their course, in exactly the same direction as on the previous day, and at what hour the resumed movement commences; and *thirdly*, to ascertain if during the time their progress is arrested by night, many fall a prey to the attacks of birds, bats, lizards, &c., to an extent to reduce their numbers very considerably; and how their eventual disappearance is to be accounted for. I should remark that amongst the main body of these travelling white butterflies, small groups of half-a-dozen individuals or more, may be observed, which in strings of sequence, looking as if playing "follow my leader," have a pretty appearance. In some portions of the country in their line of flight, where shallow water may be lying, large numbers of these white butterflies may be seen quenching their thirst on the damp ground, and flying up when disturbed, in quite a startling cloud. I have found the larvæ of *Pierinæ*, feeding upon *Leguminosæ*, *Capparidacææ*, and *Loranthacææ*." (*Dr. Thwaites*, MS. Note.)

#### Genus NYCHITONA.

*Nychitona*, Butler, Cistula Ent. i. p. 34—41 (1870).

*Nina*, Horsfield, Catal. Lep. Mus. E. I. C. p. 140 (1829).

*Pontia*, Boisduval, Spec. Gén. Lep. i. p. 430 (*nec* Fabricius).

Forewing subpyriform, apex very convex; costal vein extending two-thirds the wing; subcostal branches far apart, first at one-third before end of the cell, second immediately before the end, third and fourth on a foot-stalk one-third beyond the cell; radial from upper end of the cell; discocellular deeply concave; cell more than half length of the wing; middle median at one-eighth, lower at nearly one-half before end of the cell; submedian recurved: hindwing triangularly oval; precostal short; costal arched at base; first subcostal much curved, emitted at one-third before end of the cell; upper discocellular bent outward near subcostal, lower outwardly oblique, radial from angle of upper near subcostal; middle median at one-fourth, lower at one-half before end of the cell; submedian straight, internal recurved. Body very slender, palpi pilose beneath, projecting beyond the head; antennæ with a long compressed pointed club.

(*N. Xiphia*.)

**NYCHITONA XIPHIA** (PLATE 46, FIG. 6, 6a).*Papilio Xiphia*, Fabricius, Spec. Ins. ii. p. 43 (1781)*Pontia Xiphia*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 229.*Papilio Nina*, Fabricius, Ent. Syst. ii. p. 194 (1793).*Pontia Nina*, Horsfield, Catal. Lep. Mus. E. I. C. p. 140.

White: forewing with a short black oblique apical angular band, and a large quadrate subapical spot; base of costal border with black strigæ: hindwing with a very slender marginal line. Underside: forewing with the costal border and apex marked with delicate grey-speckled strigæ; subapical spot less prominent: hindwing crossed by zigzag strigæ, those on the disc assuming a transverse fascia.

Expanse  $1\frac{4}{8}$  to  $1\frac{6}{8}$  inch.

“Matale and Colombo. August in forest at Matale. June to December in gardens at Colombo. Flight slow, scarcely rising above the ground” (*Hutchison*).

“Kandy. Very common. Easy to capture” (*Wade*).

“A low country species. Flight slow, and seldom seen away from low brushwood—its favourite haunt” (*Mackwood*).

**Genus TERIAS.**

*Terias*, Swainson, Zool. Illustr. 1st ser. pl. 22 (1820—21).

Forewing subtriangular, generally round at the apex, rarely acuminate, costa much arched at the base, exterior margin slightly oblique, posterior margin recurved; costal vein extending to somewhat over half the margin; first subcostal at nearly one-third and second at one-twelfth before end of the cell, third, fourth and fifth on a foot-stalk beyond the cell; upper discocellular shortest, erect, lower bent outward at its middle, radial from end of upper; cell broad, extending to half the wing; middle median at one-ninth, lower at one-third before end of the cell; submedian much recurved: hindwing broadly obovate or rounded; precostal nearly atrophied; costal vein arched; subcostal straight to end of the cell, first branch much curved, emitted close before the end; upper discocellular shortest, lower very convex, outwardly oblique, radial from their angle; middle median at one-eighth, lower at nearly one-half before end of the cell; submedian straight, internal recurved. Body slender, thorax hairy; palpi short, scarcely extending beyond the head, flat, squamose, third joint minute, pointed; legs slender, squamose, tarsi long; antennæ short, with a moderately stout grooved club.

*Type*, T. Hecabe.

**TERIAS HECABE** (PLATE 45, FIG. 1. 1 a, b, ♂ ♀, 1c, larva).

*Papilio Hecabe*, Linnæus, Syst. Nat. i. ii. p. 763 (1767); Fabricius, Syst. Ent. p. 472.

*Terias Hecabe*, Swainson, Zool. Illustr. iii. 1, pl. 22; Butler, Catal. Fabrician Lep. Brit. Mus. p. 227.

Male. Upperside lemon-yellow: forewing with a broad black outer marginal excavated band, the costal border also narrowly black: hindwing with a prominent

black marginal band of half-an-inch in width and which is slightly dentated on the veins. Female slightly paler yellow; the marginal band on hindwing paler and somewhat broader. Underside of both sexes of a paler tint: forewing with two short slender black discoidal streaks, a discocellular mark, and black marginal points to all the veins: hindwing with a single similar discoidal mark, one above and another below the cell, a discocellular mark, and a discal ill-defined and indistinct zigzag speckled band; a marginal row of black dots.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

Larva cylindrical; pale green. Pupa purplish-brown; head pointed, thorax convex, wing-caves tumid.

“ Feeds on Leguminosæ ” (*Thwaites*).

“ Universal and at all times. One of the commonest insects in the Island ” (*Hutchison*).

“ Kandy and Galle. Very common ” (*Wade*).

“ Common everywhere; lower and middle ranges, and all the year round. Larva feeds on the Madras thorn ” (*Mackwood*).

**TERIAS SIMULATA** (PLATE 45, FIG. 2, 2 a, b, ♂ ♀).

Both sexes of smaller size and paler in colour than *T. Hecabe*; outer band on forewing similar but acutely scalloped, the band on hindwing in both sexes much narrower. Underside with the markings more distinct in the male, and in the female they are slightly reddish, the forewing in the latter sex also having a reddish sub-apical streak.

Expanse  $1\frac{4}{10}$  inch.

**TERIAS HECABEOIDES** (PLATE 45, FIG. 3, 3 a, b, ♂ ♀).

*Terias Hecabeoides*, Ménetries, Catal. Mus. Petr. Lep. i. p. 85, pl. 2, fig. 2 (1855), ♂.

Male. Differs from *T. Hecabe* in the comparatively broader band on both wings. In the female the bands are conspicuously broader, that on the forewing having the middle excavated portion narrow and more oblique, the band on the hindwing is also more diffused and shows more prominent vein streaks. Underside similar to *T. Hecabe*.

Expanse, ♂  $1\frac{1}{2}$ , ♀  $1\frac{3}{4}$  inch.

**TERIAS CITRINA** (PLATE 45, FIG. 4, 4a, ♀).

Male and female. Upperside paler lemon-yellow in both sexes. Male with the bands similar to but comparatively broader than in *T. rotundalis*. Female with the outer band on forewing broad and somewhat like that of *T. Hecabe*, but with the portion at the posterior angle outwardly oblique; the band on the hindwing is also

broad. Underside: markings distinct; the forewing in both sexes with a slight reddish slender subapical patch.

Expanse, ♂  $1\frac{7}{10}$ , ♀ 2 inches.

**TERIAS ROTUNDALIS** (PLATE 46, FIG. 1, 1 a, b, ♂ ♀).

Upperside bright yellow. Male: forewing with the outer band narrower, and the costa showing only a thread-like blackish edge: hindwing with a very slender marginal dentated band. Female with more rounded forewing and broader outer band, the hindwing with a marginal black thread-like dentated line. Underside with indistinct markings in both sexes; no subapical patch.

Expanse  $1\frac{4}{10}$  to  $1\frac{8}{10}$  inch.

**TERIAS UNIFORMIS** (PLATE 46, FIG. 2, 2 a, b, ♂ ♀).

Upperside bright yellow: the bands on forewing of both male and female slightly broader than the band in male of *T. citrina*; the band on the hindwing in both sexes also of similar width. Underside bright yellow; markings not distinct; the female with a broad reddish apical patch somewhat like that in *T. Sari*.

Expanse  $1\frac{7}{10}$  inch.

**TERIAS DRONA** (PLATE 46, FIG. 3, 3a, ♂ ♀).

*Terias Drona*, Horsfield, Catal. Lep. Mus. East Ind. Compy. p. 137, pl. 1, fig. 13 (1829).

Male. Upperside bright yellow. Both wings with a uniformly broad brown marginal band with sinuous inner border. Cilia yellowish. Female paler; the bands as in male. Underside bright yellow, irrorated with minute black scales, and a marginal row of small black linear dots; a black-speckled discocellular streak on both wings: hindwing with three small black subbasal spots and a costal spot near the apex; an indistinct black-speckled discal zigzag fascia.

Expanse  $1\frac{3}{10}$  to  $1\frac{6}{10}$  inch.

“Taken at the same time and place as the next species” (*Hutchison*).

“Kotinalie. Found on grass land” (*Wade*).

“Hills, 2000 to 4000 feet. Found as a rule near Patnas or short grass land” (*Mackwood*).

**TERIAS CINGALA** (PLATE 46, FIG. 4, 4a, ♂ ♀).

*Terias Cingala*, Moore, Annals of Nat. Hist. 1877, p. 48.

Male. Upperside yellow: forewing with brown outer marginal band: hindwing with narrow brown marginal band. Cilia brown, edged with yellow. Underside pale yellow, with a marginal row of minute black dots: hindwing with two slightly perceptible dusky transverse discal streaks. Female duller coloured, the basal area

numerously brown speckled: hindwing with the anterior portion of the marginal band to the middle of exterior margin as broad as that of the forewing. Underside also paler than in male.

Expanse  $1\frac{3}{10}$  to  $1\frac{5}{10}$  inch.

“Central Province. Hills, 3000 feet; grass land in forest. Taken on the road from Pusalawe to Rambodde, where they were in numbers by the roadside, and apparently at all seasons. Gregarious. Easily captured” (*Hutchison*).

“Neighbourhood of Kandy” (*Mackwood*).

**TERIAS RAMA** (PLATE 46, FIG. 5, 5a, ♂ ♀).

*Terias Rama*, Moore, Proc. Zool. Soc. Lond. 1872, p. 566.

Male. Upperside paler yellow than *T. Cingala*: forewing with a broad brown outer marginal band with the lower inner border acutely sinuous and extending to posterior margin; cilia brown: hindwing with a very slender marginal band slightly sinuous at the upper end but nearly obsolete at anal angle; cilia yellow. Female: forewing with the outer band interrupted above the posterior angle: hindwing with the band broad at the upper end. Underside paler, irrorated with brown scales, and with a marginal row of minute black dots; the discal area of forewing only being bright yellow; a slender brown-speckled discocellular streak on both wings: hindwing with a distinct brown dot below costal vein, and two medial discal transverse fasciæ composed of brown speckles.

Expanse  $1\frac{5}{10}$  inch.

**Genus CATOPSILIA.**

*Catopsilia*, Hübner, Verz. bek. Schmett. p. 98 (1816); Butler, Lep. Exotica, i. p. 54 (1871).

*Murtia*, Hübner, l. c. p. 98 (1816).

*Callidryas* (part), Boisduval.

Wings broad: forewing subtriangular; male with a tuft of fine hair near base of posterior margin beneath; costal vein extending two-thirds the margin; subcostal much arched at the base, first branch emitted at more than one-half before end of the cell and extending close alongside the costal, second from end of the cell, third trifold, third and fifth on a foot-stalk at one-third beyond the cell, fourth at one-third before the apex from below the third; discocellulars slightly oblique, both angled inward, radial from their middle; the middle median at one-fourth, lower at one-half before end of the cell; submedian slightly waved: hindwing broadly obconical; male with an oval glandular patch of raised scales above the subcostal vein; precostal vein very short; costal bent upward at the precostal; first subcostal at one-third before end of the cell; discocellulars very oblique, lower bent near the middle, radial from the angle; middle median at nearly one-fifth, lower at nearly one-half before end of the cell; submedian straight, internal slightly curved. Body

stout; thorax hairy; palpi porrect, projecting one-third beyond the head, second joint laxly squamose, third short; legs slender; antennæ gradually thickened to end, tip blunt.

**CATOPSILIA CATILLA** (PLATE 47, FIG. 3, 3a, ♂ ♀).

*Papilio Catilla*, Cramer, Pap. Exot. iii. pl. 229, f. D, E (1779) ♀.

*Callidryas Catilla*, Butler, Catal. Fabrician Lep. B. M. p. 222; Lep. Exotica, i. p. 24, pl. 9, f. 7—10.

*Papilio Hilaria*, Cramer, Pap. Exot. iv. pl. 339, f. A, B (1781), ♂.

*Colias Hilaria*, Horsfield, Catal. Lep. Mus. E. I. C. p. 132.

*Papilio Titania*, Fabricius, Ent. Syst. Suppl. p. 28 (1798).

Male. Upperside yellowish-white, the basal area yellow; with a very slender black apical and exterior marginal band. Female pale or bright yellow: forewing with the marginal black band broader, its inner border sinuous, and with a more or less distinct angular subapical zigzag slender band descending the disc; a large black discocellular spot: hindwing with a marginal series of slight dentate black spots. Underside: male glaucous ochreous-white, base of forewing tinged with yellow; posterior border white; both wings with a white-centred red discocellular spot, and a very indistinct discal series of red-speckled spots; female ochreous-yellow: forewing with the posterior border whitish; discocellular spot large; apical margin and angular subapical spots reddish: hindwing with two discocellular pearly-centred spots, and indistinct discal reddish spots; some specimens with the discocellular spot broadly surrounded with an angular red patch.

Expanse  $2\frac{1}{2}$  to 3 inches.

“Western and Central Provinces. Plains and up to 6000 feet at all times. Very local. Found in several spots of limited extent; and always there” (*Hutchison*).

“Galle, Colombo. Very common” (*Wade*).

“Principally in the lower and middle ranges. In the flights along the sea-coast, beginning generally in November, this species of *Catopsilia* forms about a third of the number, always travelling to the north; the flights lasting for days, thousands of them passing in an hour” (*Mackwood*).

**CATOPSILIA CROCALE** (PLATE 48, FIG. 1, 1 a, b, ♂ ♀, larva).

*Papilio Crocale*, Cramer, Pap. Exot. i. pl. 55, fig. C, D (1775) ♀.

*Callidryas Crocale*, Butler, Lep. Exotica, i. p. 22, pl. 9, f. 1, 2, 3, 6.

*Papilio Alcmeone*, Cramer, Pap. Exot. ii. pl. 141, f. E (1777), ♂; Fabr. Ent. Syst. iii. p. 196.

*Colias Alcmeone*, Horsfield, Catal. Lep. Mus. E. I. C. p. 131.

*Callidryas Alcmeone*, Moore, *id.* p. 57, pl. 1, f. 7, 7a.

*Papilio Jugurtha*, Cramer, Pap. Exot. ii. pl. 187, f. C, D (1777), ♀.

*Colias Jugurthina*, Godart, Enc. Méth. ix. p. 95, ♀; Horsfield, Catal. Lep. Mus. E. I. C. p. 132.

Male. Upperside yellowish-white, the basal area yellow; costal edge and exterior margin with a slender black band, which is slightly sinuous at the apex.

Female with a broader black costal and exterior marginal band, which is angled inward above end of the cell and more or less confluent with a discocellular spot, the band subapically traversed by three or four pale spots: hindwing with a sinuous-bordered black marginal band. Underside pale yellow, the posterior discal area of forewing whitish; a slight ochreous streak on upper discocellular veinlet on the hindwing.

*Female Variety*.—Upperside more uniformly yellowish, or pale yellow, with much broader costal and marginal band and confluent discocellular spot on forewing, and the hindwing having a broader marginal band with confluent narrow lunular discal band.

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

Larva cylindrical; dark green, minutely black spotted, with a broad bluish-black lateral band and pale lower line. Pupa green; tapering to a slender point at each end, thorax convex.

“Feeds on *Cassia fistula*, &c.” (*Thwaites*).

“Everywhere. Plains and hills up to 6000 feet, in forest and cultivated land. Have taken them at almost all times. Flight strong, quick, sits in crowds on damp spots of roadside” (*Hutchison*).

“In all parts, but numerous in the lower country” (*Mackwood*).

**CATOPSILIA GNOMA** (PLATE 48, FIG. 2, ♀, 2a, larva).

*Papilio Gnoma*, Fabricius, Syst. Ent. App. p. 828 (1775) ♂.

*Callidryas Gnoma*, Butler, Lep. Exotica, i. p. 43, pl. 16, f. 1—4.

*Papilio Philippina*, Cramer, Pap. Exot. iv. pl. 361, f. C, D (1781), ♀.

*Colias Philippina*, Horsfield, Catal. Lep. Mus. E. I. C. p. 130.

Male: pale olivaceous-white: forewing with a very slender blackish-brown apical band which is macular on the exterior margin; a slender streak at end of the cell. Female with a slightly broader and more distinctly macular marginal band, and larger rounded spot at end of the cell. Underside dull yellowish-ochreous, numerous covered with brownish-ochreous strigæ, an indistinct transverse discal fascia formed of slightly darker strigæ across both wings; a small red streak at end of each cell. Female brighter yellow; strigæ distinct; discal fasciæ reddish and macular on the hindwing; a duplex purple-white centred reddish-bordered spot at end of cell on forewing, two pearly-white centred and a large inner spot with similar borders at end of cell, and a red streak at base of the cell on hindwing; costal and outer margins narrowly bordered with red.

Expanse, ♂  $2\frac{3}{8}$ , ♀  $2\frac{1}{8}$  inches.

Larva cylindrical; green, spotted with minute black dots, with a lateral yellow

stripe. Pupa green with a lateral yellow stripe; tapering at both ends, thorax arched.

“Feeds on Leguminosæ” (*Thwaites*).

**CATOPSILIA ILEA** (PLATE 47, FIG. 1, 1 a, b, ♂ ♀, larva).

*Papilio Ilea*, Fabricius, Ent. Syst. Suppl. p. 421 (1798), ♂.

*Callidryas Pyranthe* (variety), Butler, Lep. Exot. i. p. 36.

Male. Upperside similar in colour to *C. Pyranthe*, but with a more slender blackish apical marginal band. Female also with a narrower apical marginal band, and with no, or at most but very indistinct, inner subapical lunular streak: hindwing with no marginal band, only with indistinct cilia spots. Underside very similar to *C. Pyranthe*. Female with more prominently marked strigæ, and pale-centred reddish spot at end of each cell, the hindwing with two contiguous similar spots.

Expanse  $1\frac{7}{8}$  to  $2\frac{1}{8}$  inches.

Larva cylindrical; green, minutely spotted with black, with a dark and pale lateral line. Pupa green, tapering at each end, thorax convex.

“Feeds on *Cassia fistula*, &c.” (*Thwaites*).

“Colombo. Neighbourhood of the cinnamon gardens. Rare. Flight slow” (*Hutchison*).

**CATOPSILIA PYRANTHE** (PLATE 47, FIG. 2, 2a, ♂ ♀).

*Papilio Pyranthe*, Linnæus, Syst. Nat. ii. p. 763 (1767).

*Callidryas Pyranthe*, Moore, Catal. Lep. Mus. E. I. C. i. p. 56, pl. 1, f. 8, 8a; Butler, Catal. Fabrician Lep. B. M. p. 224; Lep. Exot. i. p. 35, pl. 3, f. 8, 9, 10.

*Colias Pyranthe*, Horsfield, Catal. Lep. Mus. E. I. C. p. 129.

Male. Upperside pale greenish-white: forewing with a narrow blackish apical marginal band, and a small slender spot at end of the cell. Female: forewing with the blackish costal border and the apical band broader, the latter with inner subapical confluent lunular streaks; a large oval spot at end of the cell: hindwing with a slender black marginal band. Underside with the costal area of forewing and entire hindwing pale greenish ochreous-yellow, numerous covered with short delicate brown strigæ; an indistinct pale ochreous spot at end of each cell; posterior border of forewing pale greenish-white.

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

“Galle. Very common” (*Wade*).

“In all parts, but more numerous in low country than in upper. A few occur in the low country flights” (*Mackwood*).



**CATOPSILIA CHRYSÆIS** (PLATE 48, FIG. 3, 3a, ♂ ♀).*Papilio Chryseis*, Drury, Illustr. Exot. Ent. i. pl. 12, fig. 3, 4 (1770), ♂.*Callidryas Chryseis*, Butler, Lep. Exotica, i. p. 5, pl. 3, fig. 4—7.*Papilio Alcyone*, Cramer, Pap. Exot. i. pl. 58, f. A—C (1775), ♂ ♀.

Male. Upperside pale greenish-white: forewing with a broad apical marginal black band with acutely sinuous inner border; a very slender small black-speckled streak at end of the cell. Female with a broader and angular inner-bordered apical marginal band, the costal margin also blackish; a large oval black spot at end of the cell: hindwing with a broad blackish macular marginal band. Underside pale buff-yellow, crossed by pale ochreous strigæ. Female with a slight indistinct reddish pale-centred spot at end of cell on forewing and three contiguous spots on hindwing.

Expanse, ♂  $2\frac{1}{4}$ , ♀  $2\frac{3}{8}$  inches.

## Genus IXIAS.

*Ixias*, Hübner, Verz. bek. Schmett. p. 95 (1816).*Thestias*, Boisduval, Spec. Gén. des Lep. i. p. 590 (1836).

Wings ample, broad: forewing short, subtriangular; exterior margin slightly uneven; costal vein extending to two-thirds the margin; first subcostal at one-third, second at one-eighth before end of the cell, third trifold, fifth from beyond end of the cell, fourth at nearly one-half from below third; cell very broad, extending to half the wing; discocellulars outwardly oblique, both concave, upper shortest, radial from their angle; middle median at one-sixth, lower at one-third before end of the cell; submedian very recurved: hindwing obconical, short, exterior margin uneven, oblique, slightly angular before the lower end; precostal vein slender; costal curved towards the end; first subcostal at one-fourth before end of the cell, much curved; discocellulars very oblique, upper shortest, lower recurved, radial from their angle; cell broad; middle median at one-sixth, lower at one-third before end of the cell; submedian slightly curved, internal recurved. Body stout, thorax and head hairy; palpi projecting slightly beyond the head, hairy beneath, third joint short; legs slender; antennæ terminating in a gradually compressed club.

**IXIAS PIRENASSA** (PLATE 50, FIG. 1, 1a, ♂ ♀).*Thestias Pirenassa*, Wallace, Trans. Ent. Soc. 1867, p. 395, pl. 9, f. 4, ♂.

Male. Upperside sulphur-yellow: forewing with the anterior half obliquely black and traversed by an orange-red scalloped-bordered subapical band crossed by black veins: hindwing with a narrow black marginal band attenuating to the posterior angle. Female sulphur-yellow; the orange-red band on forewing narrower and interrupted below the radial and upper median vein, the two lower portions being

marked with a black spot; band on the hindwing as in male. Underside duller yellow; the costal area and hindwing sparsely marked with delicate black-speckled strigæ; a black spot at end of each cell; both wings with a transverse discal indistinct row of purple-brown spots, the spots largest and most distinct on the costa and middle of hindwing.

Expanse, ♂  $1\frac{9}{10}$ , ♀  $2\frac{2}{5}$  inches.

“Eastern Province. Plains. In forest land. February and August” (*Hutchison*).

“Hambantotte. Haragama near Kandy. Mulliatim. Common” (*Wade*).

“Low country. Found plentifully in the low jungle about April, especially north of Kandy” (*Mackwood*).

#### IXIAS CINGALENSIS (PLATE 50, FIG. 2, 2a, ♂ ♀).

Male. Comparatively larger than *I. Pirenassa*; the subapical orange-red band broader and its outer scalloped border more regularly curved: hindwing with a somewhat broader band. Underside uniformly yellow, without markings, the hindwing only having a very small spot at end of the cell, or slightly indicated discal spots. Female yellow; with a yellow subapical continuous band, and a broad marginal black band on hindwing.

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

#### IXIAS MARIANNE.

*Papilio Marianne*, Cramer, Pap. Exot. iii. pl. 217, fig. C—E (1782).

*Thestias Marianne*, Boisduval, Spec. Gén. i. p. 592.

*Ixias Bebruce*, Hübner, Verz. bek. Schmett. p. 95.

Male. Upperside white, the basal area grey: forewing with the anterior half traversed by a very broad orange-red black-bordered band: hindwing with a broad black marginal band. Female with the orange-red band narrower at the costal end, broader and shorter at the lower end, and crossed by a linear row of black spots; the band on hindwing also broader. Underside dull sulphur-yellow, the disc of forewing pale orange; forewing with a large black white-centred discocellular spot, and a broad purple-brown band composed of conical white-pointed spots.

Expanse 2 inches.

“Eastern Province. Plains; in forest land. August. Fond of damp spots on the road” (*Hutchison*).

“Hambantotte and Mulliatim. Common” (*Wade*).

“Low country. Rather scarce” (*Mackwood*).

Genus **HEBOMOIA**.*Hebomoia*, Hübner, Verz. bek. Schmett. p. 95 (1816).*Iphias*, Boisduval, Spec. Gén. des Lep. i. p. 695 (1836).

Wings large: forewing triangular, narrow; costa convex, apex acute, exterior margin oblique, uneven, posterior margin recurved; costal vein extending to two-thirds the margin; subcostal running close alongside of costal, first and second branches emitted close together, first at one-fourth before end of the cell, third bifid at one-fourth before the apex, fifth from end of the cell; upper discocellular inwardly oblique, slightly concave, lower bent outward at the middle, radial from their angle; cell large, broad, extending beyond half the wing; middle median at one-third, lower at one-half before end of the cell; submedian much recurved: hindwing broad, obovate; exterior margin uneven; precostal vein prominent; costal curved to near apex; first subcostal emitted at nearly half before upper end of the cell; discocellulars extremely long and oblique, lower slightly waved; radial from their middle; cell very long, extending two-thirds the wing; lower median at nearly one-half before lower end of the cell and nearly opposite the end of upper discocellular, the middle median at one-third between the lower and end of the cell; submedian straight, internal slightly recurved. Body large, thorax stout, hairy; head hairy, tufted in front; palpi clothed with long scales, hairy in front and beneath, third joint small; legs long, slender; antennæ long, gradually thickening to end, tip truncate.

**HEBOMOIA GLAUCIPPE** (PLATE 49, FIG. 1, 1 a, b, ♂ ♀, larva).

*Papilio Glaucippe*, Linnaeus, Syst. Nat. i. ii. p. 762 (1767); Drury, Illust. Exot. Ent. i. pl. 10, f. 3, 4; Cramer, Pap. Exot. ii. pl. 164, fig. A—C.

*Hebomoia Glaucippe*, Hübner, Verz. bek. Schmett. p. 96.

*Iphias Glaucippe*, Boisduval, Spec. Gén. des Lep. i. p. 596; Wallace, Journ. Ent. ii. p. 3.

Male. Upperside creamy-white: forewing with a large orange-red apical patch, the extreme costal and exterior borders dark brown, the veins traversing the patch lined with black and with an intervening black dentate spot: hindwing with a slight black costal spot before the apex, and a dentate spot at end of subcostal veins. Female slightly tinged with yellow: forewing with the apical patch somewhat smaller, the veins traversing it blacker, its inner border slightly black-speckled, and the intervening dentate marks larger: hindwing with curved discal series of black spots, and a marginal band composed of large blackish confluent triangular spots. Underside with the apical area of forewing and the entire hindwing yellowish-ochreous, numerous covered with short dark brown strigæ, which are more or less blotched across the disc in the female: hindwing also with a dark-speckled raised line running from base of the cell to outer margin.

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

Larva subcylindrical, tapering towards each end, numerous covered with minute tubercles; green. Pupa much arched along the back; head pointed.

“Feeds on Capparis” (*Thwaites*).

“Kandy. Common” (*Wade*).

“Numerous all over the island in the early months of the year, but not towards the sea-coast. Occasional specimens all through the year” (*Mackwood*).

#### Genus CALLOSUNE.

*Callosune*, Doubleday, *Genera of Diurnal Lep.* p. 57 (1847).

*Aphrodite*, Hübner, *Verz. bek. Schmett.* p. 95 (1816)—*preoccupied*.

Wings short, broad: forewing subtriangular; apex almost rounded, exterior margin slightly convex, oblique; costal vein extending to more than half the wing; first subcostal at two-fifths, second at one-fifth before end of the cell; third and fifth at end of the cell, third bifid at nearly one-half before the apex; upper discocellular short, inwardly oblique, slightly concave, lower deeply concave, radial from their angle; cell broad; middle median at one-fifth, lower at beyond two-fifths before end of the cell; submedian recurved: hindwing broadly obovate, exterior margin slightly uneven; precostal vein long; costal much curved; first subcostal at one-third before end of the cell; discocellulars very oblique, upper very short, lower very long outwardly oblique and concave; radial from their angle near subcostal; middle median at one-eighth, lower at one-third before end of the cell; submedian straight, internal recurved. Body moderate, thorax and head hairy; palpi rather long, projecting half beyond the eyes, second joint flat, very laxly pilose beneath, third joint slender; legs very long, slender; antennæ rather short, ending in a spatular club.

#### CALLOSUNE EUCHARIS (PLATE 49, FIG. 4, ♂).

*Papilio Eucharis*, Fabricius, *Syst. Ent.* p. 472 (1775), ♂.

*Euchloë Eucharis*, Butler, *Catal. Fabrician Lep. Brit. Mus.* p. 215.

*Teracolus Eucharis*, Butler, *Proc. Zool. Soc. Lond.* 1876, p. 164.

*Papilio Aurora*, Cramer, *Pap. Exot. iv.* pl. 299, fig. A—D (1782).

*Pieris Titea*, Godart, *Encycl. Meth.* ix. p. 124.

Male. Upperside white: forewing with a broad ochreous-yellow apical patch bordered externally by dark brown, the inner border of the patch pale yellowish and also slightly brown speckled at upper and lower end: hindwing with a marginal series of small black spots. Female duller coloured; apical patch narrow, reddish, with broader borders and brown cross veins; a slight brown discocellular streak; marginal spots on hindwing larger. Underside pale yellow on basal and apical area of forewing; both wings with a slight short subapical ochreous macular fascia in the male and the female, also with a lower discal fascia and marginal macular band.

Expanse  $\frac{6}{10}$  inch.

**CALLOSUNE DANÆ.**

*Papilio Danaë*, Fabricius, Syst. Ent. p. 476 (1775); Donovan, Ins. Ind. pl. 26, fig. 2.

*Euchloë Danaë*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 215.

Male. Upperside white: forewing with a broad apical black-margined crimson patch bordered within by a black band; a small black discocellular spot: hindwing with a narrow black almost macular marginal band. Female yellowish-white, basal area grey: forewing with the crimson patch traversed by a curved black narrow macular band; a larger black discocellular spot and a lower discal speckled spot: hindwing with a black discocellular spot, a discal row of spots, and a marginal band. Underside yellowish-white; apex and hindwing slightly suffused with pale ochreous-yellow: forewing with an oblique subapical reddish fascia traversed by black spots; discocellular spot and discal macular band as in upperside; the discocellular spot on hindwing of both sexes centred with red, the discal spots in female reddish-brown.

Expanse  $1\frac{4}{8}$  to  $1\frac{6}{8}$  inch.

**CALLOSUNE SANGUINALIS.**

*Teracolus sanguinalis*, Butler, Proc. Zool. Soc. Lond. 1876, p. 158.

Male. Much like a small example of *C. Danaë*: forewings more acuminate, the carmine apical patch rather brighter; the grey colouring confined to the extreme base and costa, not extending into the hindwing; the marginal spots of hindwing better separated and rather smaller. Underside of forewing redder on the apical area, the angulated series of spots larger and redder; the spots upon the margin near external angle small and indistinct: hindwing white, slightly creamy, with the outer border very feebly ochreous; the spots, which are arranged as in *C. Danaë*, are greyish-brown; the spot at end of the cell reddish, with a narrow brown margin. Female differs from same sex of *C. Danaë* in its smaller size, more sulphur-tinted colouration, the regular and much paler basal grey suffusion, which is almost invisible on the hindwing, the much brighter apical carmine patch, the absence of the spot near external angle of forewing, the minute character of the discal spots of hindwing, and the better defined and narrower outer border: forewing beneath with the apical area redder, the basal area yellower, and without a terminal grey streak crossing the cell; the black spots smaller: hindwing beneath distinctly ochreous, with the discal spots reddish, irrorated with black and grey.

Expanse ♂ 1 inch 6 lines.

**CALLOSUNE LIMBATA** (PLATE 49, Fig. 5, ♂).

*Teracolus limbatus*, Butler, Proc. Zool. Soc. Lond. 1867, p. 161.

Male. Upperside white; basal and costal area greyish: forewing with an oblique black-bordered orange-red apical patch, traversed by black veins; a black dot at end of the cell: hindwing with a marginal sinuous black band. Female duller

coloured, somewhat yellowish-white; apical red patch less defined, the borders dark brown; the band on hindwing more macular. Underside white: forewing with the cell and apex suffused with sulphur-yellow, traversed by a subapical brownish streak; a black spot at end of each cell, that on the hindwing bordered within by orange-yellow.

Expanse  $1\frac{4}{5}$  inch.

“Hambantotte. Common” (*Wade*).

“Found on the Trincomalie side of the Island” (*Mackwood*).

“Very scarce at Vavoniya Vilankulam. Affects grassy spots where it is allowed to seed” (*Pole*).

#### Genus IDMAIS.

*Idmais*, Boisduval, Spec. Gén. des Lep. i. p. 584 (1836); Doubleday, Gen. D. L. p. 59.

*Colotis* (part), Hübner.

Wings small: forewing elongated, triangular; costal vein extending to half the margin; first subcostal at one-third, second at one-fourth before end of the cell, third and fifth at end of the cell, third bifid at one-third before the apex; upper discocellular short, inwardly oblique, lower deeply concave, radial from their angle; middle median at one-fifth, lower at one-third before end of the cell; submedian recurved: hindwing short, obovate; costa arched in the middle, apex convex, exterior margin oblique; precostal slender; costal vein short, curved; first subcostal at one-third before end of the cell; upper discocellular very short, lower oblique, concave, radial from their angle; middle median at one-sixth, lower at one-third before end of the cell; submedian nearly straight, internal recurved. Body slender, thorax and head slightly hairy; palpi extending one-third beyond the eyes, second joint laxly pilose beneath, third joint slender; legs slender, fore tarsi short in female; antennæ short, with a small spatular club.

#### IDMAIS TRIPUNCTA (PLATE 49, FIG. 3, 3a, ♂ ♀).

*Idmais tripuncta*, Butler, Proc. Zool. Soc. 1868, p. 221.

Male. Upperside pale pinky yellowish-ochreous: forewing with a broad black marginal band with sinuous inner border and traversed by three subapical ochreous spots and an outer series of very indistinct short linear streaks; a large black spot at end of the cell: hindwing with a narrow macular marginal black band. Female paler, the bands and discocellular spot broader, the apical spots also broader. Underside pale ochreous-yellow: forewing with an ochreous-brown discal transverse macular band, and a black lined discocellular spot: hindwing with a similar coloured zigzag discal band, and an ochreous discocellular round spot.

Expanse 2 inches.

“Pattalam. January. Very rare” (*Mackwood*).

**IDMAIS MODESTA** (PLATE 49, FIG. 2, 2a, ♂ ♀).*Teracolus modestus*, Butler, Proc. Zool. Soc. Lond. 1876, p. 137.

Male. Upperside pale pinky yellowish ochreous-grey at base; costal and outer borders broadly black-brown: forewing with the outer band feebly sinuated inwardly between the median veins and barely enclosing a spot of the ground-colour below the lower median, and marked by an oblique subapical series of three small similar coloured spots; a black dentate spot at end of the cell: hindwing with the outer band inwardly traversed by a row of small grey-bordered spots of the ground-colour. Female paler, some specimens being yellowish-white, with the inner borders of the brown bands less defined. Underside of male sulphur-yellow, forewing with a slight dusky dentate streak at end of the cell, and a transverse subapical fascia terminating hindward in two black spots; a black dot at end of the cell in hindwing; female beneath tinged with grey, the markings dusky black and suffused with ochreous, the hindwing also having a discal dusky macular fascia.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

“Dambool, Hambantotte and Mulliatim District” (*Wade*).

“Low country. Found abundantly in the Dambool District and north of it” (*Mackwood*).

**Genus CATOPHAGA.***Catophaga*, Hübner, Verz. bek. Schmett. p. 93 (1816).

Forewing triangular, acute in male; costal vein extending a little over half length of the margin; first subcostal at one-half, second at one-fourth before end of the cell; third trifold, fifth at one-fifth beyond the cell, fourth at one-fourth before the apex; upper and lower discocellulars concave, radial from their angle; middle median at one-fourth, lower beyond one-half before end of the cell; submedian recurved: hindwing triangularly-oval; exterior margin oblique, anal angle somewhat prolonged; precostal vein curved; costal somewhat bent at the precostal; first subcostal at one-third before end of the cell; discocellulars very oblique, nearly straight; middle median at one-fifth, lower at one-third before end of the cell; submedian straight, internal much recurved. Body moderate, thorax stout, hairy; palpi hairy beneath, extending half beyond the eyes; third joint long, slender; legs long, slender; antennæ with a flattened club.

*Type*, C. Paulina.

**CATOPHAGA NEOMBO** (PLATE 50, FIG. 3, 3 a, b, ♂ ♀).

*Pieris Neombo*, Boisduval, Spec. Gén. des Lep. i. p. 539, ♀; Moore, Catal. Lep. Mus. E. I. C. i. p. 72. pl. 2a, fig. 3, ♀.

Male. Upperside white: forewing with the basal costal area and apical border blackish speckled, the latter indistinctly traversed by white spots: hindwing very slightly black speckled at end of subcostal veins. Underside: apex of forewing and

the entire hindwing pale dull ochreous-yellow. Female. Upperside yellowish-white: forewing with a broader and more prominently black costal and apical border and traversing white spots: hindwing with a marginal black dentated macular band. Underside: forewing with the base suffused with yellow; apex pearly violaceous-white bordered by a subapical ill-defined slender blackish band: hindwing pearly violaceous-white.

*Variety of Female.*—Upperside bright yellow, marginal markings similar to those in white female. Underside: costal border and apex of forewing and the entire hindwing ochreous-yellow; discal area of forewing pale yellow, the subapical black band more or less distinct.

Expanse 2 to 2½ inches.

“Central Province. Hills 3000 to 6000 feet. Open places in forest. Generally in company with *C. Galene* and *C. Lankapura* but more common than the latter. The yellow variety found with the white one—but less common” (*Hutchison*).

“Hills from 2500 feet, and principally up to 4000 feet. Found in abundance in early months of the year, taking part in the large annual flights of butterflies” (*Mackwood*).

**CATOPHAGA VENUSTA** (PLATE 51, FIG. 3, ♀).

Intermediate between *C. Neombo* and *C. Galene*. Male similar to *C. Galene*, the apex very sparsely black speckled. Female: forewing differs from white form of *C. Neombo* in the costa being somewhat more narrowly black bordered and the black then continuing from upper end of the cell less obliquely below the apex, where it is more pointed towards the exterior margin, the lower portions as in *C. Neombo*, the apical spots as in *C. Galene*: hindwing with a marginal apical series of four small black-speckled spots. From female *C. Galene* it differs also in the narrower black costal border, more lengthened and outwardly-pointed border below the apex, the lower portion more rounded, less excavated below, and narrower at the posterior angle; apical spots similarly disposed: hindwing differs in having a marginal upper row of four very small spots. Underside similar to both species, the black subapical band in female narrower than in *C. Neombo*, and indistinctly defined below the middle median vein.

Expanse, ♂ 2¼, ♀ 1¾ to 2 inches.

Has been taken by Mr. J. Pole in the Vavonia Vivankulam district in low country, north of Trincomalie, during December.

**CATOPHAGA GALENE** (PLATE 51, FIG. 2, 2 a, b, ♂ ♀).

*Pieris Galene*, Felder, Novara Voy. Lep. ii. p. 165 (1865).

Male. Upperside white: forewing with the costal base and apex slightly speckled with minute black scales which form on the latter an indistinct sinuous-bordered apical band. Underside: apex of forewing, and the entire hindwing pale



dull ochreous-yellow. Female. Upperside pale olivaceous yellowish-white: forewing with a broad black oblique outer marginal band traversed by three or four white spots, the inner border of the band excavated below the middle and lower median veins and curved outwardly beneath to the posterior angle; base of wing and costa greyish-black: hindwing with a broad sinuous-bordered marginal band. Underside olivaceous yellowish pearly-white: forewing with a broad curved subapical black band.

Expanse ♂ ♀ 2 to 2½ inches.

“Western and Central Province. Plains and up to 6000 feet, in open ground and forest. Much more common in the hills than on the plains. Has a very rapid and long flight” (*Hutchison*).

“Kandy” (*Wade*).

“Most abundant in low country and up to 4000 feet. Found all the year round. In the up-country flights this species forms nearly a third of the number; on a sunny day thousands will pass by in an hour” (*Mackwood*).

**CATOPHAGA LANKAPURA** (PLATE 50, FIG. 4, 4a, ♂; pl. 51, f. 1, 1a, ♀).

*Catophaga Lankapura*, Moore, Proc. Zool. Soc. Lond. 1879, p. 142.

Male. Upperside white: forewing with a broader apical blackish-speckled band than in *C. Galene*: hindwing with a slight black-speckled point at end of the veins. Underside: apex of forewing and the entire hindwing bright pale ochreous-yellow. Female: forewing with a broad black outer marginal band traversed by three or four small yellowish-white spots; costal base greyish-black: hindwing with a broad black sinuous-bordered marginal band. Underside with the apex of forewing and the entire hindwing bright ochreous-yellow: forewing with a broad curved subapical black band: hindwing with an indistinct blackish speckled macular submarginal band.

Expanse 2¼ to 2½ inches.

“Occurs in the same districts as *C. Galene*, and joins in the annual flights, forming fully half of the whole number. A few weeks after the flight is over they are to be found congregated on damp spots in the open sunshine in great numbers; I have seen quite 100 within the diameter of 12 inches” (*Mackwood*).

**Genus HIPOSCRITIA.**

*Hiposcritia*, Geyer, in Hübner's *Zuträge*, iv. p. 16 (1832).

Forewing of male much less triangular than in *Catophaga*; costa more arched; discocellulars less oblique, upper very short: hindwing with straighter costa, more convex and uneven exterior margin; costal vein much arched at the base. Antennal club narrower and longer. Sexes somewhat similar in pattern to females of *Catophaga*.

*Type*, H. Pandione.

**HIPOSCRITIA NARENDRA** (PLATE 51, FIG. 4, 4 a, b, ♂ ♀).*Appias Narendra*, Moore, Annals of Nat. Hist. 1877, p. 48.

Male. Upperside white: forewing with a broad black angular-bordered apical band traversed by two oblique white spots: hindwing with a very slender black-speckled margin, the speckles also extending slightly up each vein. Underside: apex of forewing buff-brown, subapical black band broad: hindwing buff-brown, densely speckled with brown scales, a series of these forming irregular uninterrupted zigzag transverse streaks; a small discocellular black spot. Female with broader black apical band, its inner border scalloped and extending to posterior angle: hindwing with a broad black scalloped-bordered marginal band. Underside with darker ochreous apex and broader band, the hindwing also much darker and showing a submarginal row of large whitish patches.

Expanse, ♂ 2½, ♀ 2⅔ inches.

"Hills 2000 to 4000 feet. Rare" (*Mackwood*).

Genus **APPIAS**.

*Appias*, Hübner, Verz. bek. Schmett. p. 91 (1816); Butler, Cist. Ent. i. p. 49.

Forewing triangular, less in female; costal vein extending two-thirds the margin; first subcostal at one-fourth, second at one-eighth, third trifold, fifth at one-fifth beyond the cell, fourth at one-third before the apex; upper discocellular obliquely concave, lower straight, radial from their angle; cell more than half length of wing; middle median at one-fourth, lower at more than half before end of the cell; submedian waved: hindwing broadly oval, exterior margin convex hindward; precostal vein nearly straight; costal curved; first subcostal at one-third before end of the cell; upper discocellular very oblique, lower less oblique, radial from their angle; cell broad; middle median at one-fourth, lower at one-half before end of the cell; submedian straight, internal recurved. Body moderate, thorax stout, hairy; palpi porrect, hairy beneath, second joint extending half beyond the eyes, third joint long, slender; legs long, slender; antennæ with a flattened club.

*Type*, A. Zelmira.

**APPIAS LIBYTHEA** (PLATE 52, FIG. 3, 3a, ♂ ♀).

*Papilio Libythea*, Fabricius, Syst. Ent. p. 471 (1775); Donovan, Ins. of India, pl. 27, f. 3, ♀.

*Tachyris Libythea*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 210.

*Pieris Libitina*, Godart, Enc. Méth. p. 133; Boisduval, Spec. Gén. Lep. i. p. 499, ♀.

*Pieris Rouzii*, Boisduval, Spec. Gén. des Lep. i. p. 481, ♂.

Male. Upperside white: forewing with a very slender black sinuous marginal border: hindwing with a very slight dentate black mark at end of the veins.

Underside white; costal border slightly black-speckled. Female dull white: forewing with the base of costa, the discoidal cell, a suffused fascia beneath the cell, and a broad marginal band dusky-black; a confluent black streak from end of the cell: hindwing with a dusky-black marginal dentated band, and a paler transverse more or less distinct discal fascia with confluent blackish veins. Underside with all the markings of the upperside indistinctly visible; base of hindwing yellowish.

Expanse, ♂  $2\frac{1}{4}$ , ♀ 2 to  $2\frac{1}{4}$  inches.

“Hambantotte. June and July” (*Wade*).

“Puttalam” (*Pole*).

“Low country, so far found only in the Kurunegalla District” (*Mackwood*).

**APPIAS VACANS** (PLATE 52, FIG. 2, 2a, ♂).

*Appias vacans*, Butler, Trans. Ent. Soc. Lond. 1870, p. 490; Lep. Exotica, p. 90, pl. 34, f. 5, 6, ♀.

Male. Upperside similar to *A. taprobana*. Female yellowish-white: forewing with the costal border and dentated marginal band dark vinous-brown; base of the cell and along its lower part to the exterior band brown-speckled: hindwing tinged with greenish-yellow; marginal band as in male. Underside of both sexes: forewing white, costal and exterior band ochreous-brown, apical spot in male ochreous-yellow: hindwing ochreous-yellow; band as above.

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

“Colombo. Plains. In open waste ground from October to end of year. Flight quick; alights on shrubs. Shy, but when driven off generally returns to the same spot. Only appeared one year, and then tolerably plentiful” (*Hutchison*).

**APPIAS TAPROBANA** (PLATE 52, FIG. 1, 1 a, b, c, ♂ ♀, larva).

*Appias taprobana*, Moore, Proc. Zool. Soc. Lond. 1879, p. 143.

Male. Upperside greyish-white: both wings with a black marginal band the inner border of which is acutely dentated; costal border and inner border of marginal band on hindwing grey. Female dark vinous-brown: forewing with two longitudinal sub-apical and two lower discal yellowish-white streaks: hindwing with the basal area dull white merging into the dark marginal border by dentate streaks. Underside: forewing of male white; costal and sinuous outer border cupreous ochreous-brown; a bright yellow spot before the apex: hindwing bright yellow, with broad marginal cupreous-ochreous band; costal and subcostal veins lined with cupreous-brown scales. Female differs only in having the median vein brown bordered to the outer band, and having no yellow apical spot.

Allied to *A. Hippo*.

Expanse  $2\frac{1}{8}$  to  $2\frac{3}{8}$  inches.

Larva cylindrical, dark green, minutely black dotted; a white lateral line, and pale green beneath. Pupa pale pinkish olivaceous-green; head acutely produced, thorax and lower dorsal segment angular.

"Feeds on *Cratœva*" (*Thwaites*).

"Low country. Found generally in the months of September to December. Larva feeds on *Cratœva religiosa*" (*Mackwood*).

#### Genus HUPHINA.

Wings broader and shorter than in *Appias*: forewing less triangular, costa much arched from the base, apex almost rounded; costal vein extending to half the margin; upper discocellular deeply concave, not oblique, lower less concave; cell shorter: hindwing broader; cell narrower and longer; discocellulars more oblique; antennal club slender.

Type, *H. Coronis*.

#### HUPHINA PHRYNE (PLATE 53, FIG. 1, 1 a, b, ♂ ♀, larva).

*Papilio Phryne*, Fabricius, Syst. Ent. p. 473 (1775).

*Pieris Phryne*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 202.

*Papilio Evagete*, Cramer, Pap. Exot. iii. pl. 221, fig. F, G (1782).

Male. Upperside white: forewing with the veins black lined, a broad black outer marginal band traversed by white spots; veins basally and the base of costal border greyish: hindwing with a broad black lunular-bordered marginal band. Female yellowish-white; veins of forewing and outer bands broadly brown-black, traversing marginal spots yellowish on forewing, more prominent and cordate on hindwing. Underside with the veins blackish-bordered; apex and costa of forewing, and hindwing yellow.

Expanse  $1\frac{7}{8}$  inch.

Larva cylindrical, tapering at anal end; green, finely white dotted, with a lower lateral white line. Pupa greenish, thorax and basal abdominal segment acutely angled.

"Feeds on *Capparis*" (*Thwaites*).

"Colombo, and on road from Kandy to Trincomalie. Plains; both in cultivated land and forest. Not at all common. Has a slow, uncertain flight" (*Hutchison*).

"Kandy" (*Wade*).

"In low country and hills; chiefly from 2000 to 4000 feet, not frequently beyond" (*Mackwood*).

**HUPHINA REMBA** (PLATE 53, FIG. 2, 2a, ♂).

*Pieris Remba*, Moore, Catal. Lep. Mus. East Ind. Comp. i. p. 75 (1857); Wallace, Trans. Ent. Soc. 1867, p. 340.

Male. Upperside pale yellowish-white: forewing with a broad oblique black apical band: hindwing with a slender marginal black-speckled diffused-bordered band. Underside: forewing with the costal border and apex broadly ochreous olive-brown, streaked with paler ochreous before the apex: hindwing ochreous olive-brown, with darker broad discal and lunular submarginal fasciæ. Female blackish-brown: forewing with a large broad white oblique medial patch: hindwing with a smaller white upper-discal patch. Underside as in male.

Expanse  $2\frac{2}{8}$  to  $2\frac{4}{8}$  inches.

"Hills; 2000 to 4000 feet. Rare" (*Mackwood*).

Genus **BELENOIS**.

*Belenois*, Hübner, Verz. bek. Schmett. p. 92 (1816); Butler, Cist. Ent. i. p. 37, 50 (1870).

*Anaphais*, Hübner, l.c. p. 93 (1816).

*Pinacopteryx* (Sect. i.), Wallengren, Rhop. Caffr. (Acta Acad. Sci. Holm.) 1857, p. 7.

Forewing triangular; costal vein extending to two-thirds the margin; first subcostal at one-fourth before end of the cell and anastomosed to costal near its end, second at one-eighth before end of the cell, third trifold, fifth at more than one-third beyond the cell; discocellulars oblique, slightly curved, radial from their angle; middle median at one-fourth, lower at one-half before end of the cell; submedian slightly waved: hindwing bluntly oval; precostal long; costal curved, short, first subcostal at nearly one-half before end of the cell; upper discocellular very oblique; cell fusiform; middle median at nearly one-fourth, lower at one-half before end of the cell; submedian straight, internal recurved. Body moderate; thorax hairy; palpi long, very laxly pilose beneath, second joint extended beyond the eyes, third joint long, slender; antennæ with a long spatular club.

*Type*, B. Calypso.

**BELENOIS TAPROBANA** (PLATE 53, FIG. 3, 3a, ♂ ♀).

*Pieris taprobana*, Moore, Proc. Zool. Soc. Lond. 1872, p. 565.

Male. Upperside white: forewing with a broad black marginal band extending from one-third before the apex to posterior angle, and traversed by three or four slender white subapical streaks; costal edge and base also black, with a nearly confluent tapering discocellular streak: hindwing with a broad black marginal band traversed by small white streaks and bordered before the costal end by a slender lunule. Female suffused with ochreous-white, the exterior bands, costal base and confluent discocellular streak broader and of a brownish-black, no traversing white streaks. Underside with broad bands as above and the veins of hind-

wing of a deep vinous-brown; base and apical streaks on forewing and interspaces between the veins and marginal spots on hindwing bright ochreous.

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

“Colombo. In gardens and open cultivated ground. October to end of year. Flight slow, settling on the ground. Very uncertain in its appearance; only observed during two out of five years' collecting” (*Hutchison*).

“Colombo. Hambantotte. Galle” (*Wade*).

“Low country, appearing apparently in certain years only, as for two or three years together scarcely one is to be seen and then in the next they appear in numbers.” (*Mackwood*).

#### Genus NEPHERONIA.

*Nepheronia*, Butler, Cist. Ent. i. pp. 38, 53 (1870).

*Valeria*, Horsfield, Catal. Lep. Mus. E. I. C. p. 139 (1829).

*Eronia* (part), Boisduval; Doubleday.

Forewing triangular, elongated; costa arched, apex convex; costal vein extending two-thirds the margin; first and second subcostal branches emitted close together, first at one-fourth before end of the cell; third trifold, sixth (or upper radial) from end of the cell; discocellulars oblique, upper deeply concave, lower nearly straight, radial from their angle; cell extending to nearly two-thirds the wing; middle median at one-fourth, lower at one-half before end of the cell; submedian waved: hindwing obconical; costal margin nearly straight; precostal vein short; costal curving towards the end; first subcostal at one-fourth before end of the cell; discocellulars very oblique, radial from their middle; middle median at one-fourth, lower at one-half before end of the cell; submedian straight, internal recurved. Body long, thorax hairy; palpi short, thickly clothed with scales, hairy beneath; legs long, slender; antennæ long, terminating in a lengthened club. (*N. Valeria*.)

#### NEPHERONIA CEYLONICA.

*Eronia Ceylonica*, Felder, Novara Voy. Lep. ii. p. 191 (1865).

Male. Upperside. Forewing fuliginous-black, with light-blue space within the cell and interspaces between the veins from the subcostal to middle of the disc: hindwing with light-blue interspaces between all the veins to middle of the disc. Underside nacreous-blue: forewing with the costa and apical margin dusky-cyaneous, the veins from base to near their end black, the median branches crossed by a confluent black streak: hindwing with a marginal row of very indistinct white spots with dusky borders. Female with narrow blue streaks between all the veins, and a marginal row of spots. Underside with the discoidal and median vein more broadly black.

Expanse, ♂  $2\frac{6}{8}$ , ♀ 3 inches.

“General. Occasionally numerous in low country in the smaller jungles” (*Mackwood*).

A distinct species both from the S. Indian *N. Pingasa* and the Andaman *N. Naraka*.

**NEPHERONIA FRATERNA** (PLATE 54, FIG. 3, 3a, ♂ ♀).

A smaller insect than *N. Ceylonica*. Male with comparatively narrow black marginal border and more slender black veins above; the underside of a greenish pearly-white; the veins from base of forewing very narrowly black lined: hindwing immaculate. Female with broader blue streaks between the veins than in female of *N. Ceylonica*.

Expanse, ♂  $2\frac{3}{8}$ , ♀  $2\frac{5}{8}$  inches.

**NEPHERONIA SPICULIFERA.**

Nearer to *N. Hippiæ*, Fabr., than to the two preceding species. Differs in the forewing having the blue interspaces between the veins longer, and with a distinct submarginal row of sagittate spots. Underside more like, but less prominently marked than *N. Ceylonica*. Female with all the interspaces between the veins much narrower than in the two preceding species. Underside with dark brownish-grey bordering the whitish interspaces, and with a distinct row of whitish marginal spots.

Expanse, ♂  $2\frac{5}{8}$ , ♀  $3\frac{2}{8}$  inches.

“Eastern Province. Rather rare elsewhere. Plains and up to 2000 feet; not common higher. Taken in February and August. Flight slow; very shy, dives into bushes when alarmed” (*Hutchinson*).

“General. Occasionally numerous in the low country in the smaller jungles, and mostly in the interior of the island” (*Mackwood*).

**Genus DELIAS.**

*Delias*, Hübner, Verz. bek. Schmett. p. 91 (1816); Butler, Cist. Ent. i. p. 40.

*Thyca* (Sect. i.), Wallengren, Svensk. Acad. Förh. 1858, p. 76.

Forewing lengthened triangular, narrow; apex rounded; costal vein extending to more than two-thirds the margin; first subcostal at one-fifth before end of the cell, second trifold, third at one-fourth before the apex, fourth at one-fifth beyond end of the cell; cell extending more than half the wing; discocellulars both slightly concave and oblique, radial from their angle; middle median at one-third, lower at beyond half before end of the cell; submedian recurved: hindwing oval, somewhat lengthened; precostal straight; subcostal arched; first subcostal at one-third before upper end of the cell; discocellulars very oblique, slightly concave; radial from their angle; cell very long, lower part extending two-thirds the wing; middle median at one-fifth,

lower at nearly half before end of the cell; submedian straight, internal curved. Body moderately stout, thorax and head hairy; palpi porrect, extending beyond the head, very laxly pilose beneath, third joint long, slender; legs long, slender; antennæ with a grooved club.

*Type*, D. Egialca.

**DELIAS EUCHARIS** (PLATE 54, FIG. 1, 1 a, b, ♂ ♀, larva).

*Papilio Eucharis*, Drury, *Illust. Exot. Ent.* ii. pl. 10, f. 5, 6 (1773); Cramer, *Pap. Exot.* iii. pl. 201, f. B, C; pl. 202, f. C.

*Thyca Eucharis*, Wallace, *Trans. Ent. Soc.* 1867 p. 351.

*Pieris Epicharis*, Godart, *Enc. Méth.* ix. p. 153; *Boisd. Spec. Gén. Lep.* i. p. 456.

Male. Upperside white: forewing with all the veins black lined; crossed by a submarginal narrow band, the black expanded end of the veins thus forming a marginal series of white pointed conical streaks: hindwing with a slender black submarginal band joined by black veins to a marginal row of triangular spots, the interspaces formed of pinkish cordate spots. Female with all the veins in both wings broader black, the marginal spots more acutely pointed. Underside of both sexes with all the veins black lined as in female, the marginal spots on hindwing scarlet and white-bordered; apex of forewing and basal area of hindwing yellow.

Expanse, ♂  $2\frac{7}{8}$ , ♀  $3\frac{1}{2}$  inches.

Larva subcylindrical; head small; clothed with fine rather long hair; ochreous-yellow, white-spotted; head and legs black. Pupa thick anteriorly, with a dorsal row of black spines; yellow, black spotted.

"Feeds on *Loranthus*" (*Thwaites*).

"Common throughout the low country, and up to 4000 feet; at times a few occur higher up. The larvæ feed on the parasitic *Loranthus*, sometimes in thousands, but fortunately ichneumons destroy the greater number" (*Mackwood*).

"Kandy and Galle" (*Wade*).

**Genus PRIONERIS.**

*Prioneris*, Wallace, *Trans. Ent. Soc. Lond.* 1867, p. 383; *Butler, Cist. Ent.* i. p. 39.

Wings large: forewing triangular; exterior margin very oblique, uneven; costal margin minutely serrated; costal vein extending nearly two-thirds its length; first subcostal branch at nearly one-half and second at one-fourth before end of the cell, third trifold, fourth at one-third before the apex, fifth at one-fourth beyond the cell; upper discocellular very oblique, lower less; radial from their angle; cell nearly two-thirds length of the wing; middle median at one-fourth, lower at one-half before end of the cell; submedian slightly concave near the base: hindwing broadly oval; exterior margin uneven; precostal curved; costal arched; first subcostal at one-half



before end of the cell; discocellulars very long and oblique, upper slightly concave, radial from their angle; cell two-thirds length of the wing; middle median at one-fourth, lower at one-half before end of the cell; submedian straight, internal recurved. Body stout, thorax and head hairy; palpi long, very laxly pilose beneath; legs long; antennæ long, with a gradually thickened club.

**PRIONERIS SITA** (PLATE 54, FIG. 2, ♂).

*Pieris Sita*, Felder, Novara Voy. Lep. ii. p. 161, pl. 25, fig. 12 (1865).

*Prioneris Sita*, Wallace, Trans. Ent. Soc. 1867, p. 385.

Male. Upperside greyish-white: forewing with the veins lined with black, expanding and confluent at their end: hindwing with the veins black only at their end; both wings with a very slight and indistinct submarginal lunular band formed by sparsely dispersed black scales. Underside with all veins on both wings black lined, the submarginal lunular band more defined, the hindwing with the marginal interspaces scarlet bordered with white; apex of forewing and basal area of hindwing yellow.

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

“Hills from 2000 to 6000 feet. Comparatively scarce” (*Mackwood*).

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Subfamily PAPILIONINÆ.

Abdominal margin of the hindwing curving inwards.

“This noble group of butterflies includes some of the largest and most magnificent species in Ceylon. They are notable for their deliberate sweeping mode of flight, and for its occasionally somewhat soaring character. This latter peculiarity is to be strikingly observed in the glorious Ornithoptera Darsius, which is not uncommon in open woods, and is most conspicuous from its rich black and golden colour” (*Dr. Thwaites' MS. Notes*).

Genus PATHYSA.

*Pathysa*, Reakirt, Proc. Entom. Soc. Philadelphia, iii. pp. 503, 504 (1864).

Forewing broad, triangular, costa very considerably arched, apex pointed, exterior margin oblique and concave in the middle; cell long, broadest across the middle; first subcostal branch short and anastomosed to the costal, emitted at one-seventh, and second branch at one-tenth before end of the cell; discocellulars nearly straight, upper slightly longest: hindwing broad, costa long and oblique; exterior margin convex, very sinuous, produced into a very long narrow ensiform tail; cell very long, narrow; first subcostal at nearly one-half before end of the cell, second

branch concave at the base; discocellulars bent outward at the middle, radial from their angle. Body short, stout; antennæ with a short thick rounded club. Sexes similar.

Larva smooth, slightly distended about the fourth and fifth segments; with two short fleshy tubercles on second and two on anal segment. Pupa attenuate at anal end, thorax pointed and excavated in front.

*Type*, *P. Antiphates*.

**PATHYSA ANTIPHATES** (PLATE 63, FIG. 1, 1a).

*Papilio Antiphates*, Cramer, Pap. Exot. i. pl. 72, fig. A, B (1779); Boisduval, Spec. Gén. Lep. i. p. 248; Butler, Catal. Fabrician Lep. B. M. p. 240.

*Papilio Alcibiades*, Fabricius, Mant. Ins. ii. p. 8 (1787).

*Papilio Pompilius*, Fabricius, Mant. Ins. ii. p. 8 (1787).

*Podalirius Pompilius*, Swainson, Zool. Ill. 2nd ser. iii. pl. 106.

Pale olivaceous yellowish-white: forewing crossed by seven black bands, each proceeding from the costa, the third, fourth, and fifth band not extending beyond the cell, the sixth submarginal attenuated and terminating at lower median vein, the seventh marginal, their interspaces suffused with brighter olive-yellow, and the veins between the three outer bands black lined: hindwing with a marginal zigzag row of black lunules, and an inner row of indistinct black-speckled lunules, the tail also black-streaked down the centre and a dusky-grey black-speckled patch at its base; a black lunular spot at anal angle; basal and discal markings of the underside distinctly visible.

Expanse, ♂  $3\frac{1}{4}$ , ♀  $3\frac{1}{2}$  inches.

“Eastern Province. Plains and forest. August. Taken in same place and in company with *P. Nomius*” (*Hutchison*).

“Kottawa forest; Galle. Rare elsewhere” (*Wade*).

“A scarce butterfly. Found only in a few localities widely apart, about 1500 to 3000 feet range” (*Mackwood*).

**PATHYSA NOMIUS** (PLATE 62, FIG. 2).

*Papilio Nomius*, Esper, Ausl. Schmett. pl. 52, f. 3 (1755—98); Boisduval, Spec. Gén. Lep. i. p. 251.

*Papilio Orestes*, Fabricius, Ent. Syst. iii. 1, p. 34 (1793).

*Papilio Meges*, Hübner, Samml. Exot. Schmett. i. pl. 107 (1806—16).

Pale greenish-white: forewing crossed by five black bands, the third, fourth, and fifth of which do not extend over the cell, and a broad outer band traversed by a submarginal row of round whitish spots: hindwing with two black elongated subbasal bands terminating in lunules above the anal angle, and a broad outer band traversed by three white lunular anterior spots and three posterior sinuous-lunules,

and at the anal angle by a black spot, the anal interspace of the band grey-speckled; tail black. Thorax and abdomen with black longitudinal band.

Expanse  $2\frac{1}{2}$  to 3 inches.

“Eastern Province. Plains and forest. August. Taken only on one occasion, on a journey from Kandy to Trincomalie, associated with *P. Antiphates* and *Z. Dason*, sitting in numbers on damp places on the road, dense forest being on both sides” (*Hutchison*).

“Trincomalie” (*Wade*).

“Low country only, and principally in the Northern Province. Very scarce” (*Mackwood*).

#### Genus DALCHINA.

Forewing elongated, triangular, attenuated and pointed at the apex, costa slightly arched, exterior margin very long, oblique and nearly even, posterior margin short; cell very long, first and second subcostals at nearly equal distances apart, first branch short and anastomosed to costal, second also touching the costal close to its apex; discocellulars inwardly oblique; hindwing triangular, produced and attenuated hindward, abdominal margin long, costa short and oblique, exterior margin oblique, sinuous, and produced into a short, blunt-pointed tail at end of upper median vein; cell very long, narrow; second subcostal very concave at the base. Antennal club very short and thick. Body robust; woolly. Sexes alike.

Larva smooth, thickened about the third to fifth segments, and thence decreasing to each end; with two minute short subdorsal fleshy prominences on the fourth segment, two on the front of second, and two on the end of anal segment. Pupa conical, truncated in front, thorax produced into a long pointed frontal prominence.

*Type*, *D. Sarpedon*.

#### DALCHINA TEREDON (PLATE 62, FIG. 1, a, b).

*Papilio Teredon*, Felder, Verh. Zool. Bot. Ges. xiv. p. 305, No. 215 (1864); *Novara Reise*, Lep. i. p. 61 (1865).

Male and female. Black: forewing with a medial row of emerald-green spots from the apex to the posterior margin, which are broader and quadrate but not separated hindward, the two lower spots also being of a bluish tint: hindwing with a medial transverse bluish-green band, the broad costal end of which is whitish, and a submarginal row of four slender lunules. Underside cupreous-brown, with glossy bands as above: hindwing with a crimson-bordered black spot at the costal inner end of the band, and four similar lunular spots from the cell to below end of the band, and another spot at anal angle.

Expanse, ♂ 3, ♀  $3\frac{1}{2}$  inches.

Larva smooth, green, with a paler lower lateral line, and a yellow dorsal band ending in a lateral tubercular spot on fourth segment; a pair of short tubercles on front and anal segment. Pupa green, with lateral and dorsal longitudinal yellowish streaks. Feeds on *Cinnamomeum*.

“Kandy; Galle. Common” (*Wade*).

“Numerous everywhere. In dry season dozens together are to be seen on the damp sandy spots near streams” (*Mackwood*).

#### Genus ZETIDES.

*Zetides*, Hübner, Verz. bek. Schmett. p. 85 (1816).

Forewing of a broader triangular form than in *Dalchina*, costa more arched, exterior margin more concave and sinuous; cell broader at the base; first subcostal at one-sixth before end of the cell, and anastomosed to the costal, second at one-third between the first and end of the cell; discocellulars less oblique, upper longest: hindwing broader, shorter, and less produced hindward: exterior margin scalloped, and in some with a short blunt or slightly spatular tail. Body stouter, less woolly. Antennæ comparatively shorter, club short and spatular. Sexes alike.

Larva more robust than in *Dalchina*, thicker, with longer pointed fleshy tubercles. Pupa with blunt projecting frontal thoracic process.

*Type*, *Z. Eurypylus*.\*

#### ZETIDES TELEPHUS (PLATE 63, FIG. 3).

*Papilio Telephus*, Felder, Verh. Zool. Bot. Ges. xiv. p. 305, No. 221 (1864); *Reise Novara*, Lep. i. p. 364 (1865).

Male and female. Black: forewing with three pale emerald-green streaks crossing the cell, and a lobate spot at its end, five small spots beyond, and an oblique transverse discal series of five larger spots, the lower being of a bluer tint and increasing in width, a submarginal row of small regular-sized spots: hindwing with a transverse medial bluish-green band (the costal end of which is whitish), and a submarginal row of small spots. Underside brown, with markings as above, but larger and somewhat of a dull nacreous tint: hindwing with a crimson spot crossing the black costal division of the medial band, and crimson-bordered black spots on its lower outer end and up the abdominal margin.

Expanse, ♂ 2½, ♀ 2¾ inches.

“Kandy; Galle. Common” (*Wade*).

“Low country only, and principally in the Northern Province” (*Mackwood*).

\* Hübner having figured an allied species in the second vol. of his *Samml. Exot. Schmett.*, his action thus fixes this form as the type of *Zetides*.

**ZETIDES DOSON** (PLATE 61, FIG. 3).

*Papilio Jason*, Esper, Ausl. Schmett. pl. 58, fig. 5 (*nec* Linn.).

*Papilio Doson*, Felder, Verh. Zool. Bot. Gesch. xiv. p. 305, No. 222; p. 350, No. 127 (1864).

Differs from *Z. Telephus* in being larger, the transverse medial macular band much narrower in both wings. On the underside the medial band is also narrower, especially across the hindwing, and all the markings are smaller; the cell streaks on the forewing are more slender; the marginal row of spots wider apart, especially those at the apex; on the hindwing the outer black spots to the discal band are larger and less bordered with carmine.

Expanse 3 to  $3\frac{1}{4}$  inches.

“Eastern Province in forest ground. August. Taken on the Trincomalie road. Sits in crowds on wet places. Have covered forty or fifty at once with my net. Very rare elsewhere” (*Hutchison*).

**ZETIDES AGAMEMNON** (PLATE 63, FIG. 2, 2a).

*Papilio Agamemnon*, Linn. Syst. Nat. i. 2, p. 748 (1767); Esper, Ausl. Schmett. pl. 46, f. 1—3; Boi-duval, Spec. Gén. Lep. p. 230.

*Papilio Dorylus*, Sulzer, Gesch. Ins. p. 142, pl. 13, f. 3 (1776).

*Papilio Ægistus*, Cramer, Pap. Exot. ii. pl. 106, f. C, D (1779).

Brownish-black: forewing with a bright olive-green costal, discal, and a sub-marginal row of spots which increase in size from the apex: hindwing with four transverse series of green spots, the two inner rows elongated, and those at the costal end whitish.

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

Larva green, with paler lower lateral line; with two dorsal, two anterior, and two anal black-pointed slender fleshy tubercles. Pupa green. Feeds on *Magnoliaceæ* and *Anonaceæ*.

“Galle; Kandy; Dickoya. Common” (*Wade*).

“In fair numbers, both in low country, and hills above 4000 feet, all through the year. Larva feeds on Soursop and Cinnamon” (*Mackwood*).

**Genus HARIMALA.**

Forewing short, triangular; costa much arched, exterior margin moderately oblique and scalloped; a slight tomentose glandular streak along the two lower median and submedian veins, on the upperside; cell broad; first subcostal at two-fifths and second at one-fifth before end of the cell: hindwing short; exterior margin deeply scalloped and furnished with a large spatular tail; abdominal margin long; first subcostal at one-half before end of the cell. Antennal club slender. Sexes similar.

Larva somewhat limaciform; anterior segments convexly scutellated; with two short fleshy tubercles on anterior and two on anal segment. Pupa curved backward anteriorly, head broad in front.

*Type*, H. Crino.

**HARIMALA MONTANUS** (PLATE 61, FIG. 1, ♀).

*Papilio Crino*, var. *Montanus*, Felder, Verh. Zool. Bot. Gesch. xiv. p. 322; p. 370, No. 262 (1864).

Brownish-black, densely covered with emerald-green scales: forewing with a transverse emerald-green narrow band, widening hindward, the inner border of which is nearly straight and the outer slightly concave between the veins in the male, and in the female the entire band is formed of more regularly lunular-shaped parts: male furnished with a slender brown streak along the middle of the two lower medians and the submedian vein, the streak being most developed on the lower median, and composed of fine short silky hairs, these hairy streaks in some specimens being easily rubbed off after capture: hindwing with a broad transverse discal band, which is bluish anteriorly and green posteriorly, ending in a crimson-bordered black anal spot, and followed by a lower submarginal series of green-speckled lunules.

Expanse, ♂  $3\frac{1}{2}$ , ♀ 4 inches.

Larva somewhat limaciform; anterior segments convexly scutellated; a pair of short fleshy tubercles on anterior and anal segment. Feeds on the Satinwood-tree. Pupa curved backward anteriorly, head broad in front.

The larva of this butterfly was taken feeding on the satinwood-tree by Mr. John Pole, at Vavuniya Velankalam, on December 25th, 1880, and from whose pencil-sketch, forwarded to the author by Mr. F. M. Mackwood, the above brief description has been made.

“Occurs everywhere. Plains and hills up to 6000 feet. Forest. Abundant during S.W. monsoon. Flight not rapid, but wavering; difficult to catch on the wing. Settles on leaves” (*Hutchison*).

“Rather scarce at Galle; common at Kandy” (*Wade*).

“Low country. Occasionally to be seen above 2000 feet. Swift in flight. Usually abundant in March and April” (*Mackwood*).

**Genus ORPHEIDES.**

*Orpheides*, Hübner, Verz. bek. Schmett. p. 86 (1816).

Forewing triangular; costa arched, apex somewhat pointed, exterior margin slightly concave; cell two-thirds the length of the wing, broad; first subcostal at two-fifths and second at one-fifth before end of the cell; upper discocellular

outwardly oblique, lower shortest: hindwing ovate, broad, exterior margin convex, scalloped; cell long. Antennæ slender, club short and thick. Sexes similar.

Larva cylindrical, attenuated posteriorly; anterior segments scutellated, furnished with two small tubercles on second segment and two on anal segment. Pupa convex beneath, head slightly bifid, thorax conically projected in front.

*Type*, O. Demoleus.

**ORPHEIDES ERITHONIUS** (PLATE 61, FIG. 2 a, b).

*Papilio Erithonius*, Cramer, Pap. Exot. iii. pl. 232, fig. A, B (1782).

*Papilio Epius*, Fabricius, Ent. Syst. iii. 1, p. 35, a (1793); Donovan, Ins. of China, pl. 29, fig. 2; Boisduval, Spec. Gén. Lep. i. p. 238.

*Papilio Demoleus*, Esper, Ausl. Schmett. pl. 50, f. 1, 4; Donovan, Ins. China, pl. 29, f. 1.

Brownish-black: forewing with the basal area crossed by slender yellow strigæ; an oblique discal series of irregular shaped yellow spots, two spots also within the cell and a streak at its end, a regularly disposed submarginal row of more uniform sized spots, and a row of very small spots on the extreme margin: hindwing with a broad yellow subbasal irregular outer-bordered band, a submarginal series of spots, and a marginal row of lunular spots; the basal and interdiscal areas minutely yellow-speckled; a lunular spot of blue speckles on the costa between the band and discal spot, and a carmine oval spot at the anal angle; in the female the costal blue spot is much brighter, and the anal spot encloses a small upper black spot bordered by a blue-speckled lunule.

Expanse  $3\frac{1}{4}$  to  $3\frac{3}{4}$  inches.

Larva cylindrical, thickest anteriorly; green, with pale yellow lower lateral line, head and legs; a dark-bordered yellow dorsal band on edge of fourth segment, and another ending in a lateral ocellated spot on third segment; a pale lateral streak obliquely ascending eighth and ninth segments, and an irregular upright streak on tenth segment, a pair of short pointed tubercles on front and anal segment. Pupa green.

“Colombo. Very common also at Galle. Appears at Kandy, but not very plentiful” (*Wade*).

“Low country, and up to about 4000 feet. Abundant at all times of the year” (*Mackwood*).

**Genus ILIADES.**

*Iliades*, Hübner, Verz. bek. Schmett. p. 88 (1816).

Wings large. Forewing elongate triangular, costa arched, exterior margin very oblique, posterior margin shortest; first subcostal branch emitted at one-third and second at one-fifth before end of the cell, third from its end, fifth at one-third from below fourth; discocellulars of equal length, upper slightly oblique, radial from their

angle; median branches at nearly equal distances apart; a transverse veinlet and short basal internal vein: hindwing broad; exterior margin convex, scalloped, some females with a spatulate tail from end of upper median; cell extending to half the wing; first subcostal at one-half before end of the cell; upper discocellular oblique, lower bent inward, radial from their angle; lower median at one-half before end of the cell; submedian much curved in the middle. Body stout; abdomen moderately short; antennæ with a slender club. Sexes dissimilar; female polymorphic.

Larva elongated, cylindrical, anterior segments scutellated, third, fourth, and fifth segments thickened, head attenuated; with an ocellated spot on each side of fourth segment, and a slight fleshy tubercle on anal segment. Pupa thick, curved backward and prolonged at the apex, head bifid, thorax somewhat concave, dorsal segments slightly tuberculate.

*Type*, I. Memnon.

**ILIADES PARINDA** (PLATE 60, FIG. 1 *a, b*).

Male. Blue-black: forewing with a broad discal transverse pale greyish band formed of streaks between the veins, the band decreasing to the anterior end: hindwing with the outer area from middle of the cell pale greyish-blue; a discal submarginal and a marginal row of blue-black oval spots, the two latter series being sometimes confluent. Female. Brownish-black: forewing with broader band extending more towards the costa, and more or less of an ochreous-grey colour: hindwing similar to the male, except that the colour is outwardly duller and inwardly more or less tinged with ochreous-grey; some specimens also have a red streak at base of the cell on the forewing.

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

Larva smooth, glossy green, with a whitish lateral lower band from sixth to anal segment, a broad oblique similar-coloured band ascending the eighth, ninth, and tenth segments, shield edged with whitish anteriorly, and its posterior dorsal end bordered by a transverse blackish marked crest, a similar crest also across the fourth segment, ending on each side in a large ocellated spot. Pupa green or olive-brown. Feeds on *Citrus decumana*, &c.

Differs from *I. Polymnestor* in the band on the forewing being longer and broader, more especially in the female, in which sex it is of a different tint, and in the pale colour of the hindwing extending more towards the base in both sexes, this portion of the wing also being of a different tint.

“Western, Central, and Southern Provinces. Plains and hills, in forest and open ground. Taken at Colombo from April to end of the year; elsewhere at various times. Has a slow, majestic flight; flaps the wings a great deal. Quite fearless, and is easily caught hovering over flowers” (*Hutchison*).



“Kandy and Galle. Common” (*Wade*).

“Found all over the island, predominating in the low country. Very difficult to capture perfect. March and April principal time for emergence from chrysalis” (*Mackwood*).

“Darts rapidly through the air, alighting on the ruddy foliage of the Hibiscus, or the dark green foliage of the Citrus, on which it deposits its eggs. The larva has a hump on the fourth or fifth segment, and from this hump, on being irritated, it protrudes a horn of an orange colour, bifurcate at the extremity, and covered with a pungent mucilaginous secretion, and strikes it upon the offending object with unerring aim” (*Emerson Tennent*).

#### Genus CHARUS.

Forewing shorter, broader, and more regularly triangular than in *Iliades*, costa much arched in the middle, the cell much broader, exterior margin very slightly scalloped: hindwing comparatively shorter and less produced hindward, exterior margin more deeply scalloped; tailed in both sexes. Antennal club shorter. Sexes similar.

Larva and pupa similar to *Iliades*.

*Type*, *C. Helenus*.

#### CHARUS HELENUS (PLATE 58, FIG. 3, ♂).

*Papilio Helenus*, Linnaeus, *Syst. Nat.* i. p. 459 (1758); Cramer, *Pap. Exot.* ii. pl. 153, fig. A, B; Clerck, *Icones*, pl. 13, fig. 2.

Brownish-black: forewing sparsely irrorated with golden-yellow scales disposed in streaks between the veins: hindwing with a broad pale yellow upper discal band, which has an irregular outer border; an indistinct crimson slender lunule above anal angle, and other lunules from the lower exterior margin, these being most distinct in the female; a few yellow scales on the disc below the band.

Expanse  $4\frac{1}{2}$  to  $5\frac{1}{2}$  inches.

Larva green, similar in form to *I. Parinda*, with pale pinkish flesh-colour lateral lower band along all the segments, the oblique band on the eighth, ninth, and tenth segments more irregular and extending across the back. Pupa olive-brown, much curved backward anteriorly, similar to that of *I. Parinda*.

“Kandy; Ambogamua; Kottawa forest. Frequents high jungle only; in suitable country not uncommon” (*Wade*).

“Found principally in open glades, and roadways in the jungle, from about 2000 to 4000 feet” (*Mackwood*).

## Genus LAERTIAS.

*Laertias*, Hübner, Verz. bek. Schmett. p. 84 (1816).

Wings short, broad: forewing triangular, costa arched, apex rounded: hindwing convex and scalloped externally, with a more or less developed spatular tail in both sexes from upper median vein. Cell in both wings broad. Venation similar to *Iliades*. Antennal club moderately stout. Body short. Sexes dissimilar; female polymorphic.

Larva smooth, glossy, much attenuated posteriorly, anterior segments swollen and scutellated. Pupa curved anteriorly, head flattened, slightly bifid, thorax conical in front, abdominal segments slightly tuberculated.

*Type*, L. Pammon (Cyrus, Hübner, S. Ex. Sch. ii. pl. 97).

## LAERTIAS ROMULUS (PLATE 59, FIG. 1, a, b, c).

*Papilio Romulus*,\* Cramer, Pap. Exot. i. pl. 43, f. A, ♀ (1775); Felder, Verh. Zool. Bot. Gesch. xiv. p. 319, No. 398, p. 367, No. 240 (1864).

*Papilio Pammon*, var. *Ceylonicus*, Felder, l.c., pp. 319, 367, No. 235 (1864).

Male and female. Dark brown: forewing with a marginal row of ochreous-yellow spots which increase in size to posterior angle: hindwing with a transverse medial yellow macular band, and marginal row of slender ochreous-yellow lunules, the female also having an upper and lower anal red lunule.

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

*Second form of female* (fig. 1, b). Forewing with pale interspaces between the veins forming a broad triangular pale area across the middle: hindwing with a more or less broad medial creamy-white macular band formed of four spots which are disposed side by side straightly across the disc, and in some specimens with an additional small spot within end of the cell; a crimson-red patch from the band to abdominal margin; a submarginal row of lunules and a marginal row of more slender lunules, the latter with ochreous-yellow ciliary border; anal area numerously covered with bluish-grey scales.

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

*Third form of female*—*Romulus* (fig. 1, c). Forewing with whitish interspaces between the veins beyond the cell and across the middle: hindwing with crimson-red medial spots, large submarginal lunules and narrower marginal lunules, the latter slenderly bordered by whitish cilia; discal area thickly irrorated with blue-grey scales.

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

Larva smooth, glossy-green, much attenuated posteriorly, anterior segments swollen and scutellated; fourth and fifth segments with a dorsal transverse cream-

\* Cramer's name of *Romulus* was given to the Ceylon form of ♀ *Pammon*, and is, therefore, here retained for this species.

coloured fleshy crest, that on the fourth ending on each side in an eye-like spot; a brown-streaked cream-coloured oblique band ascending from base of seventh segment, and is nearly united with that from the opposite side on back of ninth segment; a similar-coloured broken lateral band on the tenth segment, which is continued round base of anal segment, the latter segment with two small pointed fleshy tubercles. Pupa curved anteriorly; head flattened and slightly bifid, thorax conical in front, abdominal segments with short dorsal tubercles. Colour olive-brown.

Dr. Thwaites remarks, "I have repeatedly reared the three forms of female from larvæ apparently quite indistinguishable from one another."

"Kandy and Galle. These three butterflies are very common, especially those of the first form; the second form, perhaps, least so" (*Wade*).

"Everywhere; more abundant in the low country" (*Mackwood*).

#### Genus MENELAIDES.

*Menelaides*, Hübner, Verz. bek. Schmett. p. 84 (1816).

Forewing elongated, narrow in male, more triangular in female; apex very convex, exterior margin long and very oblique, posterior margin very short; cell long and narrow, extending two-thirds the wing; first subcostal emitted at two-fifths and second at one-fifth before end of the cell; upper discocellular shortest: hindwing very short, narrow, and much produced hindward; exterior margin scalloped and furnished with a more or less developed tail; cell short, broadest across the middle; first subcostal at one-fourth before end of the cell; upper discocellular very long and oblique, twice the length of lower. Antennal club gradually thickened. Sexes similar.

Larva stout, cylindrical; furnished with rows of fleshy tubercles. Pupa stout; head and thorax with rounded lateral angles, thorax conical, abdominal segments with dorsal and lateral foliated protuberances; wing-cases dilated.

*Type*, *M. Polydorus*.

#### **MENELAIDES CEYLONICA** (PLATE 57, FIG. 2, a, b).

Allied to *M. Aristolochiæ*.

Male, brownish-black. Female, olivaceous-black: forewing with pale streaks between the veins and at end of the cell: hindwing with an ochreous-white broad medial discal macular band, composed of five elongated spots outside end of the cell and a sixth small indentated spot within end of the cell; a submarginal series of broad dusky-red lunules. Front of head, sides of thorax, and abdomen beneath crimson.

Expanse 3 to 4 inches.

Larva purple-brown, with two dorsal rows of purple tubercles, and two rows of

shorter and more pointed tubercles on each side, the tubercles on seventh segment pale flesh colour. Pupa pale reddish-brown; head, base of wing-cases, and abdomen dorsally foliated; thorax conical. Feeds on *Aristolochia*.

“Common everywhere” (*Wade*).

“Low country, and hills up to about 4000 feet. All the year round. Occasionally a few occur in the highest range” (*Mackwood*).

**MENELAIDES HECTOR** (PLATE 58, FIG. 2).

*Papilio Hector*, Linnæus, Syst. Nat. i. p. 459 (1758); Clerck, Icones, pl. 33, fig. 1, ♀; Cramer, Pap. Exot. ii. pl. 141, fig. A, ♂; Boisduval, Spec. Gén. Lep. i. p. 269; Westwood, Arcana Ent. i. pl. 3. *Papilio H. Hector*, Hübner, Samml. Exot. Schmett. i. pl. 110.

Bluish-black: forewing with a transverse medial interrupted band, composed of ochreous-white streaks, three similar-coloured streaks before the apex: hindwing with a discal transverse curved series of bright crimson spots and a submarginal row of lunules, the latter duller coloured and somewhat ochreous towards the costa in the female. Cilia ochreous-white. Head, front and sides of thorax, abdomen at anal end and beneath crimson.

Expanse, ♂  $3\frac{1}{2}$ , ♀  $4\frac{1}{2}$  inches.

Larva very similar to that of *M. Ceylonica*. Feeds on *Aristolochia*.

“Colombo. Very common” (*Wade*).

“Low country; occasionally found above 2000 feet. Very abundant in the early months of the year, but occurs all through the year. A difficult fly to catch, being very wary” (*Mackwood*).

**MENELAIDES JOPHON** (PLATE 58, FIG. 1, ♀).

*Papilio Jophon*, Gray, Catal. Lep. Ins. Brit. Mus. i. p. 10, pl. 4, fig. 4 (1852).

Violet-black: forewing with pale dusky ochreous-white streaks between the veins broadly across the medial discal area and lower end of the cell, forming a prominent broad triangular medial band: hindwing with a large somewhat rounded medial ochreous-white patch, and a submarginal series of dusky crimson lunules. Abdomen with crimson anal bands.

Expanse  $4\frac{1}{4}$  to  $4\frac{3}{4}$  inches.

“Ambogamua; Kottawa forest. Rather plentiful, but very difficult to capture, being a high flier” (*Wade*).

“Hills from 2000 to 4000 feet. Very local. Taken only in the Navalputha and Pusilawa country in a tract of about twenty miles in extent. June” (*Mackwood*).

## Genus CHILASA.

*Arisbe* (part), Hübner, Verz. bek. Schmett. p. 89.

*Clytia*, Swainson, Zool. Illust. 2nd Ser. iii. pl. 120 (1833).\*

Forewing triangular, costa arched; first subcostal at one-third, second at nearly one-fourth before end of the cell, third from its end and terminating at the apex, fifth at one-sixth from below the fourth; cell extending three-fifths of the wing; discocellulars slightly concave, radial from their angle; median veins at equal width; submedian curved near the base, with a short lower internal vein; median and submedian connected by a transverse veinlet near the base: hindwing subtriangular, costa slightly arched, exterior margin convex, scalloped; cell narrow; costal vein much arched; first subcostal at three-fifths before end of the cell, second slightly concave at the base; upper discocellular very oblique, lower bent inward, radial from their angle; middle median branch at one-fourth, lower at beyond one-half before end of the cell; submedian nearly straight. Body moderately stout. Antennæ short, with a short club. Sexes similar.

Larva thick, with two dorsal rows of fleshy tubercles, and a lateral third row on anterior segments. Pupa elongated, truncated anteriorly, excavated in front of thorax; abdominal segments with dorsal and lateral row of short warty spines.

*Type*, *C. dissimilis*.

CHILASA DISSIMILIS (PLATE 57, FIG. 1, *a, b*).

*Papilio dissimilis*, Linn. Syst. Nat. i. 2, p. 782 (1767); Clerck, Icones, pl. 16, f. 2; Cramer, Pap.

Exot. i. pl. 82, f. C, D; Boisd. Spec. Gén. Lep. i. p. 377.

*Clytia dissimilis*, Swainson, Zool. Illust. 2nd Ser. iii. pl. 120.

Black: forewing with ochreous-white interrupted streaks between the veins, a submarginal irregular series of dentate spots, and a marginal row of points: hindwing with ochreous-white streaks within the cell, discal sagittate streaks, outer dentate lunules, brighter ochreous-white marginal lunules and anal spots. Body with similar coloured spots.

Expanse, ♂ 4, ♀ 4½ inches.

Larva with two dorsal rows of fleshy tubercles, and a shorter lateral tubercle on third, fourth, and fifth segments; greenish-brown, with yellow dorsal, lateral anterior, and a posterior band; between the bands are two lateral rows of crimson spots, and a smaller spot at base of the dorsal tubercles. Pupa cylindrical; front of thorax excavated; a dorsal row of short minute spines. Feeds on *Tetranthera*.

“Kandy; Galle. Comimon” (*Wade*).

“Chiefly in the low country. Sometimes above 2000 feet. Not very abundant at any time. Larva feeds on Cinnamon” (*Markwood*).

\* Inadmissible; also previously used.

**CHILASA CLYTIÖIDES** (PLATE 56, FIG. 1, ♂).

Nearest to *C. Clytia*. Male and female. Umber-brown: forewing with darker brown interspaces between the veins, a submarginal series of small dentate brownish-white spots, and a marginal row of smaller points: hindwing with a discal series of lengthened sagittate brownish-white marks, outer contiguous row of dentate lunules, and a marginal row of narrow lunules, the anal lunules ochreous and interspaced by a black spot.

Expanse 4 inches.

**CHILASA LANKESWARA** (PLATE 56, FIG. 2, a, b).

*Papilio Lankeswara*, Moore, Proc. Zool. Soc. Lond. 1879, p. 143.

Differs from *C. Clytioides* in having comparatively larger and broader wings. Male. Forewing with only four submarginal spots, and a marginal row of points: hindwing with smaller and shorter discal sagittate marks, narrower dentate lunules, and the marginal lunules shorter and broader. Female. Forewing with a submarginal series of small dentate spots: hindwing with less prominent sagittate marks, narrower outer dentate lunules, and slender marginal lunules.

Expanse, ♂ 4, ♀ 4½ inches.

Larva and pupa similar to those of *C. dissimilis*. Feeds on *Tetranthera*.

**Genus ORNITHOPTERA.**

*Ornithoptera*, Boisduval, Voy. Astrolabe, Lep. p. 33 (1832).

*Amphisius*, Swainson, Zool. Illustr. 2nd Ser. pl. 98 (1832-3).

*Troides* (part), Hübner, Verz. bek. Schmett. p. 87 (1816).

*Pachlioptera* (part), Reakirt.

Male. Forewing large, powerful, elongated triangular; costal vein extending to three-fourths the margin; first subcostal branch emitted at one-half and second at one-fourth before end of the cell, third from a short distance beyond the cell and terminating at the apex, fifth at nearly one-half from below the fourth; cell extending beyond half the wing; upper discocellular shortest, straight, lower obliquely concave at its upper end; radial from their angle; fourth median vein from lower end of the cell, third at one-seventh, second at one-third, and first at one-half before end of the cell; median and submedian veins connected by a short transverse veinlet near the base; submedian with a short basal lower internal vein: hindwing small in proportion to the forewing; costa slightly arched, exterior margin rounded and scalloped, abdominal margin folded; precostal vein two-branched, the inner branch bent downward and united to the costal; first subcostal emitted at one-third before end of the cell; upper discocellular oblique, second shortest, radial from their angle; middle median at one-fifth, and lower at one-third before end of the cell; sub-

median slightly recurved. Head and eyes large; thorax very stout; abdomen long, males furnished with two large anal valves; palpi small, pressed to the head; legs long, anterior tibia with a short spur about the middle beneath, posterior tibia with two spurs at the apex, claws simple; antennæ very long, gradually clavate. Sexes dissimilar.

Larva elongated, thick, slightly attenuated at both ends, with dorsal and lateral rows of rather long fleshy tubercles; the second segment furnished with a horny plate, beneath which the nuchal retractile tentacles lie concealed. Pupa thick, anterior part curved backward; head broad and flat; thorax conical, flattened in front and behind; abdominal segments with dorsal short stout conical protuberances; wing cases dilated laterally.

*Type*, O. Helena.

**ORNITHOPTERA DARSIVS** (PLATE 55, FIG. 1, a, b).

*Ornithoptera Darsivus*, Gray, Catal. Lep. Ins. Brit. Mus. i. p. 5 (1852); Felder, Wien. Ent. Monats. iv. p. 97 (1860).

*Ornithoptera Amphimedon*, Doubleday and Hewits. Gen. D. Lep. pl. i. fig. 2, ♂ (*nec* Cram.).

Male. Forewing olive-black: hindwing with the basal area, abdominal and exterior borders purple-black, the discal area and end of cell crossed by a very broad scalloped-bordered golden-yellow band intersected by black veins. Female paler: forewing dark olive-brown, with the outer veins longitudinally bordered with dusky olivaceous-grey: hindwing with the yellow band traversed outwardly by a curved confluent row of large oval black spots, the outer intervening yellow space being more or less obliterated, and the space between the lower median and submedian veins adjoining the upper part of the band being dusky grey. Body, palpi and legs olive-black, abdomen with broad lateral yellow bands and narrower bands beneath, sides of thorax crimson.

Expanse, ♂  $5\frac{1}{2}$ , ♀  $6\frac{1}{2}$  inches.

Larva dull purple-brown, with two dorsal and anterior lateral rows of fleshy tubercles, the tubercles on the eighth segment and a streak from its base to lower end of seventh segment pale pink; between the tubercles are dark brown streaks. Feeds on *Aristolochia*. Pupa pale purplish-ochreous, bent backward anteriorly, thorax conical, anterior segments of abdomen also conical.

“This very fine insect is not uncommon in open woods, and may often be seen flying in pairs;—a female in the first place rising slowly and nearly vertically into the air, and then followed, at a short interval in the same direction and with the same style of flight, by a male, the two keeping about two or three feet apart, rising and falling in the air in perfect unison, as if for the period under the influence of a spell or of a kind of animal magnetism. The phenomenon recalls to mind the flying

of two paper kites one above the other, both attached by a common string held in the hand, so simultaneously do the insects move together whilst keeping at the same distance apart. Sometimes a second or even a third male finds itself drawn under the same influence, and constrained, as it would seem, to follow the same mysterious leading under a similar sexual excitement or exaltation" (*Dr. Thwaites' MS. Notes*).

"Western, Central, and Southern Provinces. Plains and hills, in forest and open ground. All the year. Habits same as *Iliades Parinda*, but often flies very high" (*Hutchison*).

"Kandy. Very common. Galle" (*Wade*).

"Abundant in the low country, and hills up to about 4000 feet; on the wing all the year round, but March and April are the months when they emerge from the chrysalis" (*Mackwood*).

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#### Family HESPERIIDÆ.

Six perfect legs in both sexes; hind tibiæ, with few exceptions, having two pairs of spurs. Pupa secured by many threads, or enclosed in a slight cocoon.

"These rather small butterflies, usually termed 'skippers,' are abundant in Ceylon. They include insects differing considerably in their habits; some flit about with the greatest activity during the very hottest hours of the day, whilst others are somewhat moth-like, making their appearance in the early morning or late in the evening. The larvæ of the latter are most commonly found feeding upon the foliage of palms, grasses, and other monocotyledonous plants, within the rolled-up leaves of which they change into the pupa state" (*Dr. Thwaites' MS. Notes*).

#### Genus BADAMIA.

*Hesperia*, Butler, Ent. Monthly Mag. 1870, p. 58.

Forewing narrow, elongated; costa slightly arched at base, exterior margin very oblique and slightly convex below the apex; cell very long and narrow, extending three-fourths the wing; first subcostal branch emitted at two-fifths, second at one-fifth, third at one-seventh, fourth close to, and fifth at end of the cell; discocellulars very slender, inwardly oblique, of nearly equal length, upper bent inward close to subcostal; upper radial from the angle, lower from their middle; median branches curved at their base, middle branch emitted at about one-fourth, and lower at three-fourths before end of the cell; submedian curved in the middle; hindwing short; apex very convex, angularly lobed at anal angle, abdominal margin short; precostal projecting inward; costal vein arched upward from the base; second subcostal emitted at one-third from the base; cell broad throughout; discocellulars



very slender, scarcely visible, of equal length; radial from their angle, very slender; middle median at about one-third, and lower at one-fifth from the base; submedian straight, internal slightly curved. Thorax stout; abdomen rather long, attenuated; head broad; palpi broad and flattened in front, bristly on outer edge, third joint long, projected forward, cylindrical; fore tibiæ tufted beneath, femora slightly pilose beneath; antennæ with a lengthened club and long pointed tip.

*Type*, H. *exclamationis*.

**BADAMIA EXCLAMATIONIS** (PLATE 66, FIG. 2, *a, b*).

*Papilio exclamationis*, Fabricius, Syst. Ent. p. 530 (1775); Spec. Ins. p. 131; Mant. Ins. p. 84; Ent. Syst. p. 325.

*Hesperia exclamationis*, Fabr. Ent. Syst. iii. i. p. 325; Butler, Catal. Fabrician Lep. Brit. Mus. p. 269, pl. 3, f. 2, ♂.

*Papilio Ladon*, Cramer, Pap. Exot. iii. pl. 284, fig. C, ♀.

*Calpodas forulus*, Hübner, Verz. bek. Schmett. p. 107 (1816).

Upperside dark purplish-brown, the base of both wings greyish olive-brown. Male. Forewing with three transparent slender yellow spots disposed longitudinally on the upper disc, the inner spot ending within the cell. Female. Forewing with the spots larger, the middle spot oblique and irregularly angulated; a less distinct spot also above the middle of submedian vein. Underside pale greyish-brown: forewing with discal area darker brown, the spots as above, and pale ochreous posterior border: hindwing with a dark brown anal area bordered above by a short pale ochreous streak. Thorax greyish olive-brown; abdomen dark brown with pale ochreous segmental bands; head and palpi in front pale ochreous with brown streaks; third joint of palpi brown; legs brown above, pale beneath.

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

Larva pale violaceous-yellow, with numerous black transverse dorsal lines; stigmata whitish encircled by black. Feeds on *Terminalia*. Pupa violaceous.

“Widely spread; in forest land, both in the plains and hills. Commonest during S.W. monsoon. A strong rapid flier; settles on leaves” (*Hutchison*).

“Galle and Kandy. Common” (*Wade*).

“Low country. Very plentiful at times” (*Mackwood*).

**Genus ISMENE.**

*Ismene*, Swainson, Zool. Illustrations, i. pl. 16 (1820-1).

Forewing short, broad, triangular; costa much arched at the base, exterior margin oblique, shorter than posterior margin; cell extending to more than half the wing, very narrow at the base; first subcostal emitted at beyond one-third, second and third at equal distances between first and end of the cell, fourth at half distance between third and fifth; discocellulars inwardly oblique, of equal length, upper bent

inward near the subcostal; upper radial from its angle, lower from their middle; upper median branch arched at the base within the cell, middle median at two-thirds before end of the cell and close to the lower median; submedian recurved. Male with a large basal circular glandular patch of raised scales: hindwing short, broad, anterior margin much arched, exterior margin convex, abdominal margin short; costal vein arched towards the end, cell short; second subcostal at nearly one-third from the base; discocellulars very slender, outwardly oblique, concave; radial from their middle; two upper median branches from end of the cell, lower from one-third before the end; submedian and internal slightly curved. Body very robust; palpi thick, flat in front, bristly at the side, third joint long, naked, cylindrical; antennæ short, thick, tip long and slender. Femora pilose beneath; tibiæ tufted; hind tibiæ also incrassated.

*Type*, I. *Ædipodea*.

**ISMENE ÆDIPODEA** (PLATE 64, FIG. 2, *a*, *b*).

*Ismene Ædipodea*, Swainson, *Zool. Illustr.* i. pl. 16 (1820-1); Moore, *Catal. Lep. Mus. E. I. C.* i. p. 247, pl. 7, fig. 4, 4a.

Male. Upperside ochreous olive-brown: forewing with an ochreous-red costal band which also extends across base of the cell; a large black basal patch below the cell. Cilia of forewing pale brownish-grey, of hindwing ochreous-red. Female. Differs above only in the absence of the basal black patch, and beneath in the less prominent white posterior marginal band. Underside ochreous-brown: forewing with a paler ochreous subapical and a marginal fascia, and a broad whitish posterior band: hindwing with bright ochreous-red longitudinal streak between the veins, broadest between the median, submedian and abdominal margin; a small black spot at the base above the costal vein. Thorax in front, head, palpi, body beneath, and legs, ochreous-red; terminal joint of palpi brown.

Expanse, ♂ 2, ♀  $2\frac{1}{4}$  inches.

“Near Trincomalie, in forest path; August. Very quick flier, but fearless” (*Hutchison*).

“Kandy; Balangada. Scarce” (*Wade*).

**Genus CHOASPES.**

Forewing somewhat narrower and more regularly triangular than in *Ismene*; cell broader; first subcostal emitted at one-third before end of the cell; discocellulars very oblique; middle median emitted at one-fourth and lower at three-fourths before end of the cell. No glandular patch in male: hindwing somewhat shorter; anterior margin more oblique, anal margin prominently lobed, abdominal margin longer; second subcostal emitted at one-third from the base; middle median

from near end of the cell, lower at one-half before the end; antennæ much slenderer throughout.

*Type*, C. Benjamini.

**CHOASPES BENJAMINI** (PLATE 64, FIG. 1, *a*, *b*).

*Thymele Benjamini*, Guérin, Delessert's *Souv. Voy. Inde*, ii. p. 79, pl. 22, f. 2, 2*a* (1843).

*Hesperia Xanthopogon*, Kollar, Hügel's *Kaschmir*, iv. p. 453, pl. 18, f. 1, 2 (1844).

Male. Upperside glossy bluish-purple olive-brown, the basal area more distinctly olive-brown. Cilia of hindwing and anal lobe broadly ochreous-red. Female deeper olive-brown. Underside glossy, ænescent olive-brown, the veins black: forewing with a broad pale cupreous-brown band on posterior margin: hindwing with a broad ochreous-red lobular patch with black macular upper border and broad central angular streak. Thorax greyish-olive above, vertex bluish-olive, abdomen brown; palpi and thorax in front, and abdomen beneath, ochreous-red.

Expanse 2 to 2½ inches.

Larva with broad transverse dorsal black and yellow bands and two rows of white spots along the back; head, two anal segments and laterally below the bands red; face black spotted. Pupa pinkish-grey, black spotted.

“Central Province. Hills 3000 to 5000 feet. Forests. May to November. Shy, but not difficult to capture. Settles on ground; easily disturbed, but returns to same place” (*Hutchison*).

“Dickoya. Not common. The larva rolls itself up in the tip of the leaf on which it feeds, and when it has eaten this leaf it goes to another, and so on till it changes to pupa” (*Wade*).

**Genus HASORA.**

Differs from *Hesperia* in the forewing being short, broad, and triangular; first subcostal emitted at one-third, second and third at equal distances between it and end of the cell, fourth halfway between third and the end; middle median at two-fourths and lower at three-fourths before end of the cell: hindwing very short, lengthened hindward; apex slightly angular, exterior margin slightly convex, lobe somewhat lengthened, abdominal margin long; second subcostal at one-fourth from the base; discocellulars very slender, outwardly oblique, upper shortest, lower slightly concave; radial from their angle, very slender; middle median from close to end of the cell, lower at one-half before the end. Thorax stout; abdomen short.

*Type*, H. Badra.

**HASORA BADRA** (PLATE 65, FIG. 4, *a*, *b*).

*Goniloba Badra*, Moore, *Catal. Lep. Mus. E. I. C. i.* p. 245, pl. 7, fig. 3, 3*a* (1857); *Proc. Zool. Soc. Lond.* 1865, p. 778.

Upperside dark vinous-brown; base of both wings olive-brown. Male: forewing

with a slightly suffused blackish subbasal patch, three conjugated very small indistinct semi-transparent yellowish spots near the costa one-fourth from the apex. Cilia pale greyish-brown. Underside pale purple-brown: forewing with a suffused blackish costal patch before the apex; posterior margin yellowish: hindwing with a subbasal and submarginal suffused blackish band, the latter terminating in a black patch on anal lobe; above the patch is a purple-white streak, and within the cell a small bluish-white spot. Palpi and body beneath dull yellow; legs pale brown. Female: forewing with three small subapical spots, more distinct than in male, and three large obliquely-quadrate spots, two being disposed on the disc, the third above them within the cell. Underside suffused with bluish-purple; the spots on forewing as above, and a broad yellowish posterior border: hindwing as in male.

Expanse, ♂ 2, ♀ 2¼ inches.

“Kottawa forest. Rare” (*Wade*).

#### Genus BIBASIS.

Intermediate between *Parata* and *Hasora*. Forewing comparatively longer than either of those genera; apex more pointed, exterior margin more oblique, and posterior margin shorter than in *P. chromus*; first subcostal emitted at nearly one-half before end of the cell, second at one-fourth before the end; middle median at one-fourth before end of the cell. No glandular streak in male: hindwing more oval, less convex externally, and broader posteriorly.

*Type*, B. Sena.

#### BIBASIS SENA (PLATE 65, FIG. 3, 3a).

*Goniloba Sena*, Moore, Catal. Lep. Mus. E. I. C. i. p. 245 (1857); Proc. Zool. Soc. 1865, p. 778.

Male and female. Upperside dark ochreous olive-brown. Cilia of hindwing carmine-red. Underside vinous-brown: forewing with a large buff-white discal patch from the middle of posterior margin suffusedly bordered above with purple: hindwing with a broad transverse purple-white band terminating above the anal angle, the inner border of the band sharply defined, the outer suffusing itself on the disc. Cilia carmine-red. Palpi and thorax in front and legs beneath, and anal tuft ochreous-yellow; thorax beneath greyish-brown.

Expanse 1¾ to 2 inches.

“Kandy” (*Wade*).

#### Genus PARATA.

Forewing narrower and less triangular than in *Hasora*, the exterior margin shorter and posterior margin longer; middle median emitted at nearly one-half and lower at one-sixth before end of the cell. Male with an oblique glandular streak of

laxly raised scales below the cell: hindwing less produced hindward; anal lobe short and angular; second subcostal emitted at one-third from the base; discocellulars very oblique; antennæ more slender.

*Type*, *P. Chromus*.

**PARATA CHROMUS** (PLATE 65, FIG. 1, *a, b*).

*Papilio Chromus*, Cramer, *Pap. Exot.* iii. pl. 294, fig. E, ♂ (1782).

*Goniloba Chromus*, Moore, *Proc. Zool. Soc. Lond.* 1865, p. 777.

Upperside dark vinaceous olive-brown, base of wings olive-green. Male: forewing with suffused blackish subbasal patch traversed by an oblique curved black glandular streak. Cilia greyish-brown. Head and thorax olive-brown; abdomen brown. Underside purplish-brown: forewing with blackish subbasal patch, pale posterior border, and apex indistinctly speckled with blue-grey scales: hindwing with a narrow transverse discal bluish-white band broken by a large blackish patch on anal lobe, exterior to which the cilia has a short white line. Third joint of palpi and legs above brown; palpi and thorax beneath dull yellow. Female paler brown: forewing with two yellowish semi-transparent discal angular spots, and a very small similar spot before the apex.

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

“Widely distributed. Plains and hills up to 6000 feet; during S.W. monsoon chiefly. Quick flier from bush to bush. Settles often and is not difficult to catch” (*Hutchison*).

**PARATA ALEXIS** (PLATE 65, FIG. 2, *a, b*).

*Papilio Alexis*, Fabricius, *Syst. Ent.* p. 533 (1775); *Spec. Ins.* p. 134; *Mant. Ins.* p. 87; *Ent. Syst.* iii. p. 336; *Jones' Icones*, fig. .

*Hesperia Alexis*, Butler, *Catal. Fabrician Lep. Brit. Mus.* p. 269, pl. 3, fig. 1, ♂.

Upperside dark vinaceous olive-brown, base of both wings olive-green. Male: forewing with a suffused blackish subbasal patch traversed by a curved oblique black glandular streak. Underside vinous-brown; costal border of forewing and basal area of hindwing suffused with purplish-blue: hindwing with a broad well-defined transverse white band broken above large blackish anal lobe-spot. Female: forewing with two small semi-transparent yellowish discal angular spots. Underside as in male, the forewing also showing the discal spots and a whitish streak along posterior margin.

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

Smaller than *P. Chromus*, with broader and prominently marked band on underside of hindwing.

“Kandy” (*Wade*).

"At all times of the year. Widely distributed from sea level up to 4000 feet and perhaps over. In April and July they may be found in thousands in jungle paths" (*Mackwood*).

Genus **BARACUS**.

Wings small: forewing triangular; exterior margin short, convex, slightly oblique, posterior margin long; first subcostal at two-fifths before end of the cell, first, second, and third at equal distances, fourth and fifth much recurved from the base; discocellulars inwardly oblique, radial from their middle; cell extending beyond half the wing; middle median near to end and lower at nearly one-half before end of the cell; submedian straight: hindwing short, broadly oval; apex and exterior margin very convex; abdominal margin short; subcostal straight, second subcostal from immediately before end of the cell; discocellulars slightly concave, radial from their middle; cell short; two upper medians from end of the cell, lower at one-third before the end; submedian and internal slightly recurved. Body moderate; palpi laxly clothed, terminal joint somewhat long, thick, pointed; hind tibiæ hairy above; antennæ with a thick club and pointed tip.

*Type*, *B. Vittatus*.

**BARACUS VITTATUS** (PLATE 69, FIG. 1, 1a).

*Isoeteinon vittatus*, Felder, Verh. Zool. Bot. Gesch. xii. p. 480 (1862); Reise Novara, Lep. iii. pl. 74, f. 21 (1867).

Male and female. Upperside dark olive-brown. Male with the lower basal and discal area of both wings olive-grey, and a small subapical spot of the same colour also on the forewing. Female: forewing with a small olive-grey subapical spot and slender macular discal streak: hindwing with less distinct olive-grey lower basal and discal area. Underside ferruginous, the veins narrowly lined with paler ferruginous: forewing with the basal area dusky brown: hindwing with a longitudinal medial yellow fascia from base of cell, and less distinct short yellow discal streak between the veins. Body, palpi, and legs olive-brown, paler beneath.

Expanse, ♂  $1\frac{2}{3}$ , ♀  $1\frac{3}{4}$  inch.

"Abundant in grassy places among the hills" (*Hutchison*).

"Ambogamua" (*Wade*).

"Common in the patenas and swamps, 2000 feet upwards. Most numerous from December to March" (*Mackwood*).

Genus **ASTICTOPTERUS**.

*Astictopterus*, Felder, Wien. Ent. Monat. iv. p. 401 (1860).

Forewing elongated; exterior margin short, slightly oblique and convex, posterior margin long; cell broad, extending two-thirds the wing; first subcostal at

nearly one-half before end of the cell, first, second, and third branches wide apart; discocellulars very slender and very oblique, upper bent inward, lower shortest, upper radial from the angle, lower from their middle; the middle median at one-sixth and lower at three-sixths before end of the cell: hindwing broadly oval; cell extending half the wing; discocellulars erect; radial very slender; second subcostal at one-sixth before end of the cell; middle median from close to end and lower at nearly one-half before end of the cell. Body long, slender; palpi lax, terminal joint short, pointed; legs comparatively naked; antennæ with slender pointed club.

*Type*, A. Jama.

#### ASTICTOPTERUS STELLIFER.

*Astictopterus stellifer*, Butler, Trans. Linn. Soc. Lond. Zool. 2nd ser. i. p. 555 (1876-9).

Upperside glossy olivaceous ferruginous-brown. Male: forewing with a very indistinct oblique discal series of small olive-yellow spots. Female: forewing with two minute upper discal semi-transparent white spots and two above them before the apex. Underside darker ferruginous-red. Male: forewing pale brown along posterior border; with a very minute indistinct white spot at end of the cell and two before the apex: hindwing with a white spot at end of the cell, one above it near the costa, and another below it towards anal angle, all with blackish borders. Female brighter coloured, the spots more prominent, and the forewing with two additional spots on the disc. Palpi and legs beneath olive-yellow.

Expanse, ♂ 1, ♀  $1\frac{2}{5}$  inch.

"Colombo" (*Hutchison*).

"Galle and Kandy" (*Wade*).

"Low country principally. Numerous in Guinea-grass fields" (*Mackwood*).

#### Genus MATAPA.

Forewing elongated, triangular; cell extending two-thirds the wing, broadest across the middle, very narrow at each end; subcostals at equal distances apart; first branch emitted at one-third before end of the cell; discocellulars extremely oblique, upper bent inward to subcostal, lower very slender, straight; upper radial from the angle, lower from their middle; upper median emitted from end of cell opposite third subcostal, middle median at one-fifth and lower at nearly three-fifths before end of the cell; submedian curved in the middle. Male with an oblique discal slender linear glandular streak of raised scales: hindwing short, rather broad; exterior margin convex in middle; costal vein slightly arched in middle, extending to apex; second subcostal emitted at one-third before end of the cell; the cell long, broad across the middle; discocellulars long and very oblique; no radial perceptible; middle median close to end of the cell, lower at nearly one-fifth before the end;

submedian and internal straight. Body moderately stout; palpi thick, flat in front, terminal joint very short, thick, conical, and imbedded among the scales; antennæ rather long, slender, club thickish, abruptly bent near end and pointed at tip.

*Type*, M. Aria.

**MATAPA ARIA** (PLATE 66, FIG. 1, 1a).

*Hesperia Aria*, Moore, Catal. Lep. Mus. E. I. C. i. p. 254 (1857).

*Ismene Aria*, Moore, Proc. Zool. Soc. 1865, p. 784.

Male and female. Upperside chocolate-brown, base of costa ochreous: forewing with a lower discal oblique impressed comma-like grey glandular streak. Cilia ochreous-white on forewing, ochreous on hindwing. Underside dark ferruginous-brown. Palpi ferruginous-brown. Female. Upperside slightly paler. Cilia of hindwing brighter ochreous. Underside bright ferruginous-brown.

Expanse ♂ ♀ 1 $\frac{5}{8}$  to 2 $\frac{1}{4}$  inches.

“Colombo. Plains and forest. During S.W. monsoon. Settles on leaves” (*Hutchison*).

“Kandy. Uncommon. Found in Guinea-grass” (*Wade*).

“Appears twice a year generally—in January and July; at other times very scarce” (*Mackwood*).

**MATAPA SUBFASCIATA** (PLATE 64, FIG. 3, a, b).

*Ismene subfasciata*, Moore, Proc. Zool. Soc. 1878, p. 686.

Male. Upperside dark velvety umber-brown; costal edge of forewing slightly ochreous. Cilia of both wings ochreous. Underside paler: forewing with a pale pink triangular costal patch before the apex; posterior border ochreous, adorned with a large hairy tuft: hindwing with a transverse pink fascia across middle of the wing. Eyes red. Legs beneath and anal tuft ochreous.

Expanse 2 inches.

Larva pale purplish-grey, with indistinct darker transverse dorsal lines; head black spotted. Feeds on Palmaceæ. Pupa pale olivaceous-yellow.

**Genus GANGARA.**

Wings large: forewing elongated, triangular; costa arched at the base, apex bluntly pointed; exterior margin short, oblique; cell broad, clavate, extending two-thirds the wing; subcostal much arched along the cell, its branches at equal distances apart, first branch at two-fifths before end of the cell; discocellulars inwardly oblique, upper bent near subcostal, upper radial from its angle, lower from their middle; the middle median at one-sixth and lower at four-sixths before end of the cell; submedian curved in the middle: hindwing short, broad, somewhat



quadrate; apex convex, exterior margin somewhat produced and convexly angular in the middle; abdominal margin short; cell short, extending one-third the wing and of equal width throughout; costal vein very slightly arched, second subcostal at one-third before end of the cell; discocellulars obliquely concave, slender; no radial visible; middle median from near end and lower at one-half before end of the cell; both the middle and lower medians and the submedian vein in the male swollen towards the base, and clothed on the upperside of the wing with long hair; submedian and internal straight. Body large, robust; palpi thick, compactly flattened outwardly in front, terminal joint very short, broad, conical; antennæ slender, tip finely pointed.

*Type*, G. Thyrsis.

**GANGARA THYRSIS** (PLATE 66, FIG. 3, 3a).

*Papilio Thyrsis*, Fabricius, Syst. Ent. p. 532 (1775).

*Telegonus Thyrsis*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 262.

*Hesperia Pandia*, Moore, Catal. Lep. Mus. E. I. C. i. p. 254, pl. 7, fig. 10, 10a (1857); Proc. Zool. Soc. Lond. 1865, p. 790.

Male and female dark chocolate-brown: forewing with ochreous-yellow semi-transparent quadrate spots, disposed triangularly, the first and second large and quadrate, the first occupying half the cell, the second obliquely beneath end of the cell, the third small and obliquely above the second; above the third are three smaller spots obliquely before the apex, the two upper being conjugated. In some specimens there is a small dot beneath the subapical spots, and on the posterior margin another, both similar to the rest. Cilia at posterior angle brownish-white: hindwing with the cilia at the anterior angle brownish-white. Underside: forewing irrorated with grey scales near the apex; posterior margin pale ochreous-white; spots yellow as above: hindwing irrorated with grey scales, forming a series of bands across the wing. Palpi and body beneath, and legs blackish-brown.

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

Larva greyish-white, with a few ochreous dorsal spots and marks. From the body, according to Dr. Thwaites, a loose shaggy filamentous clothing consisting of pure wax is excreted, but which is easily rubbed off when handled, leaving the larva quite naked. Feeds on Palmaceæ. Pupa pale olivaceous-yellow; the tongue spirally protruded.

“Kandy. Common” (*Wade*).

“Low country up to 2000 feet” (*Mackwood*).

**Genus BAORIS.**

Forewing triangular, apex acute; exterior margin very oblique: hindwing broad, very convex exteriorly, the male possessing a more or less prominent tuft of long

hair covering a patch of raised scales at end of the cell. Body robust, thorax very broad; club of antennæ somewhat lengthened.

*Type*, B. Occia (*Hesperia Occia*, Hewits.).

#### BAORIS PENICILLATA.

Allied to *B. scopulifera*. Upperside dark olive-brown. Male: forewing with four semi-diaphanous yellow spots, two being apical and two discal, which are also smaller: hindwing with a black tuft. Underside of forewing marked as on upperside, and with a glossy purple space on hind margin enclosing a small brown patch of raised scales.

Expanse  $1\frac{1}{2}$  inch.

“Low country. Larva feeds on the Sugar-cane leaf” (*Mackwood*).

#### BAORIS KUMARA (PLATE 69, FIG. 2, 2a).

*Hesperia Kumara*, Moore, Catal. Lep. E. I. C. i. p. 255 (1857); Proc. Zool. Soc. Lond. 1878, p. 687, ♀.

Upperside dark olive-brown. Male: forewing with a transverse discal series of five semi-diaphanous yellow spots from costa before the apex. Cilia pale brownish-yellow. Female: forewing with seven discal spots. Underside deep ochreous-brown: forewing marked as above: hindwing with an indistinct yellow discal spot between the two lower median veins. Palpi and body brown; tarsi ochreous.

Expanse  $1\frac{5}{8}$  to  $1\frac{6}{8}$  inch.

“Kandy” (*Wade*).

#### BAORIS SERIATA (PLATE 69, FIG. 4, 4a).

*Hesperia seriata*, Moore, Proc. Zool. Soc. Lond. 1878, p. 688.

Allied to but smaller than *B. Kumara*. Male differs from the same sex of that species in the discal row of spots being slightly smaller and less angular in shape, and in having an additional lower small spot. Female also with smaller and less angular spots. Underside greenish-brown: forewing marked as above, the lowest spot being suffused.

Expanse, ♂  $1\frac{1}{3}$ , ♀  $1\frac{1}{3}$  inch.

#### Genus PARNARA.

This genus comprises a group of species which have been variously referred to *Hesperia*, *Pamphila*, and *Gegenes*. They are similar in form of wings, venation, and antennæ, to *Chapra*, but the males have no oblique glandular streak on the forewing.

*Type*, *P. guttata*.\*

\* *Endamus guttatus*, Bremer (*Ménetrics*, Catal. Mus. Petrop. i. pl. 5, f. 4).

**PARNARA NAROOA** (PLATE 69, FIG. 3 a, b).*Hesperia Narooa*, Moore, Proc. Zool. Soc. Lond. 1878, p. 687, pl. 45, f. 4.

Male and female. Upperside dark olive-brown: forewing with two prominent semi-diaphanous yellowish well-separated spots within end of cell, a subapical series of three smaller spots, and an oblique discal series of five spots: hindwing with two very small discal spots in male, three in female. Underside dark olive-brown: forewing marked as above: hindwing with a prominent white spot at upper end of the cell, and a curved discal series of four spots. Body olive-green.

Expanse, ♂  $1\frac{8}{12}$ , ♀  $1\frac{1}{2}$  inch.

Allied to *P. contigua*, Mabille; markings similar, but both sexes one-third less in size.

Larva pale olive-green, delicately speckled with darker green and black dots; a pale unspotted upper lateral line; head black marked. Pupa pale olivaceous-yellow, darker shaded on thorax.

**PARNARA BADA** (PLATE 70, FIG. 2, 2a).*Hesperia Bada*, Moore, Proc. Zool. Soc. Lond. 1878, p. 688.

Male and female. Upperside olive-brown, base of wings paler; cilia pale cinereous-brown: forewing with two (in some specimens three) contiguous subapical small white semi-diaphanous spots, and three spots below obliquely on the disc, the upper one smallest and the lowest quadrate: hindwing with a discal irregular linear series of three, or four, white semi-diaphanous spots, more or less indistinct. Underside greyish-brown; both wings marked as above, the spots on the hindwing being more prominent.

Expanse, ♂  $1\frac{2}{10}$ , ♀  $1\frac{3}{10}$  inch.

“Colombo. Common at all times, about low shrubs in gardens and waste ground. Short flight; easily caught” (*Hutchison*).

**PARNARA CINGALA** (PLATE 70, FIG. 3, a, b).

Allied to *P. Bada*. Male and female: forewing with two small semi-diaphanous white spots within end of the cell, three subapical and four discal: hindwing with two very indistinct discal spots. Underside paler: forewing marked as above, the lowest discal spot prominent and yellow: hindwing with three prominent spots, the upper one being between subcostals.

Expanse  $1\frac{3}{10}$  inch.

Larva very pale olivaceous-blue, with a darker dorsal and a paler lateral longitudinal line; head yellowish. Feeds on Graminacæ. Pupa pale olive-green.

## Genus SUASTUS.

Wings small: forewing elongated, triangular; costa very slightly arched at the base; apex pointed; exterior margin short, oblique, and slightly convex; cell two-thirds the wing, clavate; first, second, and third subcostals at equal distances apart, fourth halfway between third and fifth; discocellulars inwardly oblique, upper bent inward near the subcostal, upper radial from its angle, lower from their middle; the middle median at one-fifth, lower at three-fifths before end of the cell; submedian straight: hindwing short, broadly oval; apex and exterior margin very convex; cell broad; second subcostal at one-third before end of the cell; discocellulars slightly oblique, radial very indistinct; middle median close to end of the cell, lower at one-third before the end; submedian and internal straight. Body moderate; palpi thick, bristly at the sides, terminal joint long, slender, pointed; antennal club thickish, slender at tip; legs long, slender, almost naked.

*Type*, *S. Gremius*.

## SUASTUS GREMIUS.

*Hesperia Gremius*, Fabricius, Ent. Syst. Suppl. p. 433 (1798); Butler, Catal. Fabrician Lep. Brit. Mus. p. 271, pl. 3, fig. 7, ♀.

*Hesperia Divodasa*, Moore, Catal. Lep. Mus. E. I. C. i. p. 255 (1855); Proc. Zool. Soc. Lond. 1865, p. 791, ♀.

Upperside dark olive-brown, base of forewing and anal area of hindwing greenish-olive: forewing with three small semi-transparent yellow spots before the apex, two large somewhat quadrate spots and a broken or lunate spot within end of the cell, beneath these are also two lower discal yellow spots—but which are not transparent, the penultimate spot being very small. Underside grey: forewing with the discal area brownish; spots as above: hindwing with a black spot within the cell, and a curved discal series of black spots.

Expanse  $1\frac{1}{2}$  inch.

“Colombo. Common” (*Hutchison*).

“Galle and Kandy” (*Wade*).

“Low country. At all times of the year” (*Mackwood*).

## SUASTUS SUBGRISEA.

*Hesperia subgrisea*, Moore, Proc. Zool. Soc. Lond. 1878, p. 689, pl. 45, f. 5.

Allied to *S. Gremius*. Male. Upperside differs in having the three oblique discal spots smaller, the lowest appearing only as a few greenish-grey scales, the upper subapical series of two and a single spot at upper end of the cell very minute. Underside less grey in colour, the forewing marked as above: hindwing with an indistinct black cell spot and a discal series of spots.

Expanse  $1\frac{1}{2}$  inch.

“Galle. Rare” (*Wade*).

Genus CHAPRA.

From typical *Gegenes* (*G. nostradamus*) this genus differs in its somewhat lengthened form of forewing, more lobular anal angle of hindwing, longer antennæ—which has a whip-like point, and the male insect in possessing an oblique glandular streak below the cell, somewhat as in *Pamphila comma*.

*Type*, *C. Mathias*.

CHAPRA MATHIAS (PLATE 70, FIG. 1, 1a).

*Hesperia Mathias*, Fabricius, Ent. Syst. Suppl. p. 433 (1798).

*Epargyreus Mathias*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 275, pl. 3, f. 8, ♂.

*Hesperia Julianus*, Latreille, Enc. Meth. ix. p. 763 (1823), ♂.

*Gegenes Thraz*, Hübner, Samml. Exot. Schmett. ii. pl. 150, fig. 1—4 (1820—26), ♂ ♀.

Male. Upperside olive-brown: forewing with two small yellowish semi-transparent spots within end of the cell, three before the apex, and in the male three oblique discal spots followed by a dark-bordered slender straight impressed glandular streak: hindwing with one or two very indistinct pale discal spots. Female with five discal spots in the forewing, and four or five in the hindwing. Underside paler; markings more distinct: hindwing also with a spot at upper end of the cell.

Expanse  $1\frac{2}{8}$  to  $1\frac{4}{8}$  inch.

“Kandy” (*Wade*).

“Widely distributed. Low country up to 4000 feet. Found in thousands on swampy patena scrub at certain times; generally January and February” (*Mackwood*).

CHAPRA AGNA.

*Hesperia Agna*, Moore, Proc. Zool. Soc. 1865, p. 791, ♂.

*Hesperia Chaya*, Moore, id. p. 791, ♀.

*Pamphila similis*, Mabille, MS.

Similar to *C. Mathias*; differs in being somewhat larger, much darker and more uniformly coloured; the spots on the forewing of the male much smaller, those on the disc being slender (not quadrate as in *C. Mathias*), and the oblique glandular streak not so prominent. Female also similar.

Expanse  $1\frac{3}{8}$  to  $1\frac{5}{8}$  inch.

“Colombo. Common at all times, about low shrubs in gardens and waste ground. Short flight; easily captured” (*Hutchison*).

Genus TELICOTA.

Allied to typical *Pamphila* (*P. comma*): forewing more acutely triangular; cell somewhat broader; fourth and fifth subcostal branches and upper radial closer together at their base; discocellulars more oblique, upper much longer; middle

median at one-fourth and lower at two-fourths before end of the cell (instead of about one-sixth and four-sixths respectively, as in *P. comma*); glandular streak in male more erect, its surface smooth, and extending from submedian to upper median veins: hindwing more produced and lobular at anal angle; second subcostal at one-third before end of the cell, bent downward from its base and in a line with discocellulars, which are slightly recurved; radial invisible. Body stout; palpi very compactly clothed; legs more slender, femora and tibiæ much less hairy, hind tibiæ shorter, and tarsi longer; antennal club longer, not so thick, and with a lengthened tip.

*Type*, *T. Augias*, Linn. (Donov. I. Ind. pl. 48, f. 1).

**TELICOTA BAMBUSÆ** (PLATE 71, FIG. 4).

*Pamphila Bambusæ*, Moore, Proc. Zool. Soc. Lond. 1878, p. 691, pl. 45, f. 11, 12, ♂ ♀.

Allied to *T. Augias*, Linn., from typical Java specimens of which it differs in its somewhat broader and less pointed wings. Markings above similar, but more defined, the border of the wings blacker, the basal yellow streak on hindwing confined to a terminal spot at the end of the cell, and the abdominal border black. On the underside the markings are also more clearly defined and the interspaces blacker.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{1}{8}$  inch.

“Kandy” (*Wade*).

“Colombo, up to 3000 feet. Probably higher” (*Mackwood*).

**Genus PADRAONA.**

Allied to *Pamphila*. Wings shorter, less triangular; no glandular streak on forewing of male. Body smaller, thorax less robust, terminal joint of palpus slender and cylindrical. Antennal club slightly longer.

*Type*, *P. mæsa*.

**PADRAONA PSEUDOMÆSA.**

Allied to *P. mæsoides*. Comparatively larger. Male with paler yellow markings, which are somewhat broader and more disconnected. Female with comparatively narrower and more disconnected markings. Cilia of a paler tint. Underside also paler yellow.

Expanse, ♂ ♀  $1\frac{1}{8}$  inch.

“Colombo. Plains; in open and cultivated places and weedy ground, at all times. Settles on weeds and shrubs. Has a short jerky flight; easily caught” (*Hutchison*).

**PADRAONA GOLOIDES** (PLATE 71, FIG. 3, 3a).

Upperside dark purple-brown. Male: forewing with a golden-yellow oblique discal sinuous band followed by small costal spots before the apex; base of the costa and cell, and two spots at its end also of the same colour: hindwing with a medial discal sinuous golden-yellow band, the hairy scales extending to the base also yellow. Cilia golden-yellow. Underside with less distinct markings as above: costa and apex of forewing and the hindwing suffused with yellow. Body and legs golden-yellow; palpi and front of thorax beneath saffron-yellow. Female: differs only in the discal band being narrow; and not having the yellow costal streak.

Expanse  $1\frac{1}{16}$  inch.

Nearest allied to *P. Gola*. Differs from it on both sides in the narrower discal band of the forewing, the band being also disconnected from the costal spots; the band of the hindwing is also narrower.

“Occurs in same places as preceding” (*Hutchison*).

“Kandy” (*Wade*).

“Widely distributed. Sea coast up to 5000 feet. Generally January to March” (*Mackwood*).

**PADRAONA MÆSOIDES** (PLATE 71, FIG. 5, 5a).

*Pamphila Mæsoides*, Butler, Trans. Linn. Soc. Lond. 2nd ser. i. p. 554 (1879).

Upperside vinous olive-brown. Male: forewing with a golden-yellow band along base of costa and within the cell, three small connected subapical spots, a narrow sinuous discal band, and a streak along posterior margin: hindwing with a golden-yellow medial discal sinuous band, a less distinct spot within the cell, and a spot on the costa. Cilia yellow. Underside paler; marked as above. Female: differs only in having narrower markings and less prominent costal band on the forewing.

Expanse, ♂  $\frac{9}{16}$ , ♀ 1 inch.

“Low country” (*Mackwood*).

## Genus AMPITTIA.

Wings shorter, broader, and less triangular than in *Pamphila*. Male with a very short glandular streak below the cell. Body narrower; terminal joint of palpi shorter, cylindrical and less pointed. Antennæ with a much slenderer and more pointed club.

Type, A. Maro.

**AMPITTIA MARO** (PLATE 71, FIG. 1, 1a).*Hesperia Maro*, Fabricius, Ent. Syst. Suppl. p. 432 (1798), ♂.*Cyclopidia Maro*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 279, pl. 2, fig. 12, ♂.*Cyclopidia Camertes*, Hewitson, Desc. Hesp. p. 43 (1868), ♂.

Upperside purplish olive-brown. Male: forewing with a broad golden-yellow basal band which also crosses the cell, a broad subapical spot, a similar discal spot, and a lower very small spot; a pale band also along posterior margin: hindwing with a broad medial golden-yellow band. Underside: forewing marked as above, and with a marginal row of yellow-bordered blackish dots: hindwing with a subbasal and two discal series of yellow spots. Body, palpi, legs, and antennæ beneath yellow. Cilia alternately brown and yellow. Female with paler similarly disposed but much smaller markings, the basal band on forewing represented only by the terminal portion at and above the cell, and the band on hindwing by well separated spots.

Expanse 1 inch.

"Kandy. In waste ground near forests; 2000 feet. End of S.W. monsoon" (*Hutchison*).

"Kandy" (*Wade and Mackwood*).

**Genus TARACTOCERA.***Taractocera*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 279 (1869); Ent. M. Mag. 1870, p. 97.

Wings small: forewing triangular; fourth and fifth subcostals, and upper radial from end of the cell; discocellulars very oblique, slender, upper longest, lower radial from their middle; the middle median at one-fifth and lower at one-half before end of the cell; submedian recurved: hindwing short, exterior margin very convex; second subcostal at one-fifth before end of the cell; discocellulars outwardly oblique, radial from the middle; the middle median near to end and lower at one-third before end of the cell; submedian straight, internal recurved. Body rather stout; palpi erect, terminal joint long and slender; legs naked; antennæ with a short broad spatular club.

*Type*, T. Mævius.

**TARACTOCERA MÆVIUS** (PLATE 70, FIG. 5).*Hesperia Mævius*, Fabricius, Ent. Syst. iii. p. 352 (1793).*Taractocera Mævius*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 279, pl. 3, fig. 13.*Hesperia Flaccus*, Fabricius, Ent. Syst. Suppl. p. 434 (1793).

Male and female. Upperside pale olive-brown: forewing with a yellowish-white slender streak at lower end of the cell and joined above at the end by a smaller streak reaching to the costa; three minute spots obliquely before the apex, two below them nearer the outer margin, and a discal sinuous series of small spots: hindwing with a slender medial discal series of very small spots. Cilia yellowish-white. Underside paler; brighter tinted in female; markings more distinct, the



end of the discal series of spots on the hindwing extending upward towards the costa, and also having a small spot at end of the cell.

Expanse  $\frac{1}{3}$  inch.

"Colombo. In open and cultivated places and weedy ground. At all times. Settles on weeds and shrubs; flight short and jerky; easily caught" (*Hutchison*).

"Kandy" (*Wade*).

"Colombo, up to 4000 feet" (*Mackwood*).

#### Genus HALPE.

*Halpe*, Moore, Proc. Zool. Soc. Lond. 1878, p. 689.

Allied to *Pamphila* (*P. sylvanus*). Forewing shorter, exterior margin more convex; the discal oblique glandular streak in male shorter and broader. Veins similar, the lower median branch being nearer end of the cell. Head and thorax smaller, abdomen slender. Antennæ with a more slender club and longer hook at the tip.

#### HALPE CEYLONICA.

*Halpe Ceylonica*, Moore, Proc. Zool. Soc. Lond. 1878, p. 690, pl. 45, fig. 9.

Upperside dark brown: base of wings and body olive-brown: forewing with two contiguous subapical small white spots, two oblique discal small conical spots with deeply excavated outer border, and a smaller spot at upper end of the cell; the male with an oblique discal glandular streak composed of broad darker brown raised scales. Cilia brownish-cinereous, alternated with dark brown. Underside dark brown, speckled with ochreous scales: forewing with white spots as above, and a small spot also below the discal series; an upper submarginal row of indistinct pale ochreous spots; hindwing with a broad transverse medial and a maculated discal greyish-ochreous band. Palpi, body beneath, and legs greyish-ochreous.

Expanse, ♂  $1\frac{2}{3}$ , ♀  $1\frac{1}{2}$  inch.

#### HALPE DECORATA (PLATE 71, FIG. 2).

Upperside olive-brown: forewing with a bright yellow streak at end of the cell, the upper part being circular and nearly divided from the elongated lower portion; two smaller spots before the apex, and two slightly larger obliquely-quadrate spots on the disc; base of wing also speckled with olive-yellow scales: hindwing with a medial discal triangular-shaped patch of olive-yellow scales. Underside olive-yellow: forewing with broad brown posterior margin and macular streak bordering the discal spots: hindwing with slender brown-speckled indistinct subbasal spots and curved discal macular line. Body, palpi, and legs beneath yellow; antennæ ochreous-red.

Expanse  $1\frac{1}{2}$  inch.

"Galle, Morowaka. Rare" (*Wade*).

**HALPE BRUNNEA** (PLATE 70, FIG. 4, 4a).(?) *Hesperia Egena*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 284.

Female. Upperside dark vinous-brown: forewing with a very small semi-diaphanous white spot at upper end of the cell, two spots before the apex, and two larger discal spots, the latter deeply concave on their outer border. Cilia pale vinous-brown, alternated with dark brown. Underside as above. Body and palpi beneath pale olive-brown; antennæ black tipped with red.

Expanse  $1\frac{4}{10}$  inch.

A single specimen in the collection of Captain Wade.

Genus **HYAROTIS**.

Forewing triangular; costa long, apex pointed, exterior margin very oblique, posterior margin short in male; subcostals at equal distances apart, first branch at one-third before end of the cell; the cell two-thirds the length of wing; discocellulars inwardly oblique; upper radial from angle near subcostal, lower from their middle; the middle median at one-seventh, lower at four-sevenths before end of the cell; submedian slightly arched in the middle: hindwing oval; exterior margin convex; cell extending half the wing, broad; discocellulars very slender; radial very indistinct; middle median from close to end, and lower at one-third before end of the cell; submedian straight; internal slightly curved. Body moderate; palpi flattened laterally in front, terminal joint short, conical, pointed; antennæ slender, with a stoutish club and slender tip.

Type, *H. Adrastus*.

**HYAROTIS ADRASTUS** (PLATE 67, FIG. 5, 5a).

*Hesperia Adrastus*, Cramer, Pap. Exot. iv. pl. 319, fig. F, G (1780).

*Plesioneura Praba*, Moore, Proc. Zool. Soc. Lond. 1865, p. 790.

*Hesperia Phœnicis*, Hewitson, Exot. Butt. 1869, *Hesp.* pl. 4, fig. 36, 37 (1869).

Male and female dark olivaceous chocolate-brown. Upperside: forewing with three small connected subapical semi-transparent white spots; three similar discal spots, the central largest and quadrate, and a fourth large quadrate spot above them within the cell. Underside darker brown basally, paler exteriorly, and crossed by a darker submarginal macular fascia: forewing with spots as above, bordered externally by a suffused dark brown streak: hindwing with a double series of white, dark brown outer-bordered lunules crossing middle of the wing, beyond which is the submarginal dark brown macular fascia. Palpi, thorax, and abdomen beneath pale greyish-brown; legs brown. Cilia yellowish-white, spotted with pale brown.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{6}{8}$  inch.

"Western Province. Plains. Forest. April and July. Rare. Habits like *H. infernus*" (*Hutchison*).

"Kandy" (*Wade*).

"Kandy and its neighbourhood" (*Mackwood*).

## Genus TAGIADES.

*Tagiades*, Hübner, Verz. bek. Schmett. p. 108 (1816).

*Pterygospidea*, Wallengren, Rhop. Caffr. p. 53 (1857).

Forewing triangular; apex pointed; exterior margin oblique, very slightly convex, even; first, second, and third subcostals at equal distances, first at one-third before end of the cell; discocellulars recurved inwardly, upper radial from angle near subcostal, lower from their middle; cell narrow, extending two-thirds the wing; middle median at one-sixth, lower at four-sixths before end of the cell, lower much curved at base within the cell; submedian slightly recurved: hindwing short, broadly produced hindward, exterior margin slightly scalloped towards anal angle; second subcostal at nearly one-third before end of the cell; discocellulars of equal length, nearly erect, radial from their middle; cell broad; middle median close to end and lower beyond one-third before end of the cell; submedian straight, internal recurved. Body short, thorax stout; palpi very compactly flattened laterally, terminal joint short, pointed; legs almost naked; antennæ slender, the club and lengthened tip very slender.

*Type*, T. Japetus.

## TAGIADES ATTICUS (PLATE 68, FIG. 2).

*Hesperia Atticus*, Fabricius, Ent. Syst. iii. i. p. 339 (1793).

*Tagiades Atticus*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 283.

Upperside dark vinous-brown: forewing with seven minute semi-transparent white spots recurving before the apex, two within end of the cell and one above its end: hindwing with a large pure white quadrate anal patch bordered before the apex by two rather large black spots, and along exterior margin by four smaller spots; cilia bordering the patch also white. Underside paler, the white patch extending to base of hindwing. Palpi, legs, and body beneath greyish-white.

Expanse, ♂  $1\frac{1}{2}$ , ♀  $1\frac{3}{4}$  inch.

“Central Province. Hills, 3000 to 6000 feet; in open places, roadsides, &c. Not very common. Flight slow” (*Hutchison*).

“Kandy” (*Wade*).

“Rather scarce. From 3000 feet upward” (*Mackwood*).

## TAGIADES DISTANS (PLATE 68, FIG. 1, 1a).

Male and female. Upperside vinous-brown, discal areas suffused with greyish-brown: forewing with three minute semi-transparent white spots before the apex, two nearly obsolete below them, and two slightly larger spots on the disc, each bordered with black; a slight black spot below the cell near the base: hindwing with a greyish-white border extending from above anal angle to two-thirds the

exterior margin; a blackish spot at end of the cell, and a curved series across the disc; cilia bordering the band also white.

Expanse, ♂  $1\frac{7}{16}$ , ♀  $1\frac{9}{16}$  inch.

Allied to *T. Ravi*, from which it may be distinguished by having the white band on the hindwing. The Javan *T. obscurus*, Mabille, is also nearly allied, but differs in the absence of the discal semi-transparent spots on the forewing.

“Colombo. Plains. In cultivated ground. At all times. A common insect. Like *B. exclamationis* in habits” (*Hutchison*).

“Kandy” (*Wade*).

**TAGIADES MINUTA** (PLATE 68, FIG. 4, 4a).

*Tagiades minuta*, Moore, Annals of Natural History, 1877, p. 343.

Male and female. Upperside dark olive-brown. Cilia of hindwing white, of forewing slightly whitish at posterior angle. Underside: forewing greyish-white on middle of hind margin: hindwing greyish-white, except along anterior border; a small blackish spot at end of the cell, and a medial discal series of spots; outer margin brown-speckled. Palpi, body, and legs beneath grey-white. Legs above brown.

Expanse, ♂  $1\frac{1}{8}$ , ♀  $1\frac{3}{8}$  inch.

“Kandy. Common. Flight rapid, and difficult to catch” (*Wade*).

**Genus SARANGESA.**

Wings small: forewing elongated, triangular; exterior margin short, obliquely convex; first subcostal at one-third before end of the cell; discocellulars recurved, upper bent inward at some distance from subcostal, upper radial from its angle, lower from their middle; cell extending nearly two-thirds the wing; middle median at one-sixth and lower at four-sixths before end of the cell; submedian straight: hindwing broadly conical, exterior margin waved; second subcostal at one-fourth before end of the cell; discocellulars recurved, radial from their middle; cell extending more than half the wing, broad; middle median near the end and lower at nearly one-half before end of the cell. Body moderate; palpi compact, finely bristled in front, terminal joint thick, conical, pointed; antennal club lengthened, tip finely pointed.

*Type*, S. Purendra.

**SARANGESA ALBICILIA** (PLATE 68, FIG. 5, 5a).

Upperside dark vinous olive-brown, with three very indistinct transverse macular fasciæ: forewing with two very minute semi-transparent white spots at end of the cell, another above it, three before the apex, and two less distinct on middle

of the disc, all bordered by the macular fascia. Cilia of forewing edged with white, cilia of hindwing entirely white. Underside: forewing as above and sparsely grey-speckled: hindwing thickly covered with greyish-white, leaving only the costal border and discal macular fascia brown.

Expanse, ♂  $1\frac{2}{10}$ , ♀  $1\frac{3}{10}$  inch.

Differs from *S. Dasahara* in the hindwing being more prominently white and the cilia also being entirely white.

“Kandy” (*Wale*).

“Scarce and rather local. Found rarely by me except in Lagalla. Generally May or June” (*Mackwood*).

Genus UDASPES.

Allied to *Plesioneura*: forewing less triangular, exterior margin more convex, posterior margin longer; cell narrow at end; discocellulars extending very obliquely inward; lower median branch at less than two-thirds before end of the cell: hindwing very broadly oval, extremely convex externally; abdominal margin short; cell much shorter, second subcostal nearer end of the cell; upper and middle medians both emitted from extreme end of the cell, lower median at less than one-third before the end. Body short; antennal club shorter, and thicker at tip.

*Type*, U. Folus.

UDASPES FOLUS (PLATE 68, FIG. 3, 3a).

*Papilio Folus*, Cramer, Pap. Exot. i. pl. 74, f. 7 (1779).

*Tagiades Folus*, Butler, Catal. Fabr. Lep. B. M. p. 283.

*Hesperia Folus*, Moore, Catal. Lep. Mus. E. I. C. i. p. 252, pl. 7, fig. 7, 7a.

*Hesperia Cicero*, Fabricius, Ent. Syst. iii. p. 338 (1793).

Upperside dark sepia-brown: forewing with three connected semi-transparent yellowish-white spots before the apex, two below them nearer the outer margin, a smaller spot between the upper and middle median veins, two larger connected spots on the disc, and a large spot within end of the cell: hindwing with a large medial discal semi-transparent yellowish-white sinuous-bordered patch. Cilia alternated with white. Underside: forewing as above: hindwing with the white patch extending medially to base of the wing, and traversed by a dark brown sinuous streak below end of the cell; outer margin of the wing suffused with greyish-white. Body, palpi, and legs beneath greyish-white.

Expanse  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inch.

Genus PLESIONEURA.

*Plesioneura*, Felder, Wien. Ent. Monat. vi. p. 29 (1862).

Forewing triangular, apex pointed; exterior margin short, slightly oblique and convex, posterior margin long; cell extending two-thirds the wing; first, second,

and third subcostals at equal distances, fourth half-way between third and fifth; discocellulars oblique, upper longest, bent inward to subcostal, upper radial from its angle, lower from their middle; the middle median emitted close to end of the cell, lower at two-thirds before the end; submedian nearly straight: hindwing broad, short, very convex externally; cell extending half the wing; second subcostal at one-fourth before end of the cell; discocellulars bent slightly inward at their middle, radial from their angle; middle median from close to end of the cell, lower at one-third before the end; submedian straight, internal recurved. Body stout; palpi compactly flattened laterally, terminal joint very short, broad, conical; legs naked; antennæ long, slender.

*Type*, *P. curvifascia*.

**PLESIONEURA ALYSOS** (PLATE 67, FIG. 3, *a*, *b*).

*Plesioneura Alysos*, Moore, Proc. Zool. Soc. Lond. 1865, p. 789.

Upperside dark vinous-brown. Male: forewing with a semi-transparent oblique transverse irregular-shaped medial band, with either one or two very small oblique subapical spots, and a lower spot between the upper median and radial. Female: forewing with broader medial band, three subapical spots, the spot between upper median and radial, and sometimes another between the upper and middle medians. Palpi and thorax beneath olive-brown. Antennæ with a white streak near apex. Underside paler: forewing with medial band and subapical spots as above, and with a white costal streak above the band: hindwing fasciated transversely with grey scales.

Expanse, ♂  $1\frac{5}{8}$ , ♀  $1\frac{7}{8}$  inch.

Larva pale green, white speckled; head black bordered. Feeds on *Zinziberaceæ*. Pupa pale green.

“Central Province. Hills, 2000 to 6000 feet. Forests. A very quick flier and hard to follow on the wing. Alights on the ground and under leaves of bushes” (*Hutchison*).

“Galle and Kandy” (*Wade*).

“Jungle borders. 2000 feet upwards” (*Mackwood*).

**PLESIONEURA RESTRICTA.**

Allied to *P. Alysos*: forewing with similar semi-transparent medial band, subapical spots, and also with a small linear spot between upper and middle median veins. Underside as above, with the band stopping at the subcostal vein in both sexes—not being continued in a white streak to the costal margin, as in *Alysos*.

Expanse  $1\frac{3}{8}$  to  $1\frac{6}{8}$  inch.

**PLESIONEURA SPILOTHYRUS** (PLATE 67, FIG. 4, 4a).*Eudamus spilothyrus*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 283, ♂.

Male and female. Upperside dark olive-brown: forewing with a few olive-yellow scales scattered on the basal area; a small spot on middle of the costa, white in male, ochreous in female; a semi-diaphanous white quadrate spot with incised outer border at end of the cell; a similar-sized spot beneath it between the middle and lower median veins; a smaller spot above it at base of upper and middle medians, and one spot (in some specimens two) between the lower median and submedian near the posterior angle; a conjugated series of three small spots before the apex and two below them near the outer margin: hindwing with a very indistinct small spot at end of the cell, and a curved discal series formed of clustered olive-yellow scales, these scales also extending over base of the wing. Cilia cinereous-brown, in hindwing slightly alternated with olive-yellow. Underside paler; marked as above; the lower spots on forewing being olive-yellow. Body olive-brown; palpi with olive-yellow lateral streak. Antennæ with olive-white subapical streak.

Expanse  $1\frac{7}{16}$  to  $1\frac{9}{16}$  inch.

“Ambogamua” (*Wade*).

“Plentiful about May; 2000 to 4000 feet, near jungle borders” (*Mackwood*).

Genus **HANTANA**.

Differs from typical *Plesioneura* in the forewing being more regularly triangular, apex acute, exterior margin more oblique, and posterior margin shorter; cell much longer, extending to nearly three-fourths the wing, the discocellulars being very oblique; middle median at one-fifth and lower at four-fifths before end of the cell: hindwing regularly oval; cell longer; discocellulars more erect; medians nearer end of the cell. Palpi more laxly clothed; fore tibiæ tufted; middle and hind tibiæ hairy above, femora hairy beneath; antennal club shorter.

*Type*, *H. infernus*.

**HANTANA INFERNUS** (PLATE 68, FIG. 6).*Eudamus infernus*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 283.

Male and female. Upperside dark purplish-brown: forewing with two, sometimes three, very small golden-yellow semi-diaphanous costal spots before the apex, a single but less distinct spot near upper end of the cell, and in female a similar costal spot above it. Underside slightly paler: golden-yellow spots on forewing brighter: hindwing with a very indistinct golden-yellow spot within the cell, one also at its end, and a series across the disc, all formed by golden-yellow scales. Head and palpi with lateral golden-yellow streak; front of head and palpi speckled with golden-yellow.

Expanse, ♂  $1\frac{5}{8}$ , ♀  $1\frac{7}{8}$  inch.

“Central Province. Hills, 3000 to 6000 feet. Forests. Common on banks by roadsides in the hills. Settles on leaves; easily caught” (*Hutchison*).

“Ootavelle; Dickoya” (*Wade*).

“Plentiful in forest paths where bordered by undergrowth, 2000 feet up to 4000” (*Mackwood*).

#### Genus COLADENIA.

Wings short; forewing triangular, apex pointed, exterior margin short, slightly oblique and waved; cell two-thirds the length; first subcostal at less than one-third before end of the cell, first, second, and third at equal distances, fourth and fifth from end of the cell; discocellulars slightly inwardly oblique, upper radial from angle near subcostal, lower from their middle; the middle median at one-sixth, lower at four-sixths before end of the cell; submedian recurved: hindwing broad, somewhat quadrate; exterior margin slightly waved and angular in the middle; cell broad, extending more than half the wing; second subcostal at one-fourth before end of the cell; discocellulars nearly straight, upper shortest, radial from their middle; the middle median from immediately before end of the cell, lower at nearly one-half before the end. Body rather stout; palpi of lax hairy scales; terminal joint short, thick, cylindro-conical; antennæ long, with gradually thickened club and slender tip; fore tibiæ tufted beneath; femora pilose beneath, hind tibiæ with a long tuft of hair above.

*Type*, *C. Indrani*.

#### COLADENIA TISSA (PLATE 67, FIG. 6).

Male. Upperside brownish-ferruginous, with indistinctly paler marginal lunules: forewing with three or four very small semi-transparent yellowish-white subapical spots, a transverse medial series of larger spots composed of a large irregular-shaped spot at end of the cell, a smaller spot on the costa above it, a large spot beneath it below end of the cell, and a very small spot between them at the junction of upper and middle median veins; between these is an irregular triangularly-lobed black-bordered ferruginous spot; a small black spot below the cell near the base: hindwing with an indistinct blackish discal spot and a discal series of spots curving from base of costa to above anal angle. Cilia brownish-ferruginous, with a slight paler streak above posterior angle of forewing. Underside dusky ferruginous-brown; markings more prominent. Palpi and legs pale ferruginous. Female paler, with marginal lunules more diffused; markings as in male.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{1}{8}$  inch.

Allied to *C. Indrani*. Of a darker colour; has deeper yellow and differently shaped semi-transparent spots on forewing, and the cilia is not alternated with white.

“Kandy” (*Wade*).

“Taken in Badulla and Kaduganawa. Scarce” (*Mackwood*).



Genus **TAPENA**.

Wings small; forewing short, apex acute; exterior margin slightly oblique, convexly angular in the middle; first subcostal emitted at nearly one-half before end of the cell; cell extending two-thirds the wing; discocellulars obliquely convex, upper bent close to subcostal, upper radial from its angle, lower from their middle; the middle median branch at one-fifth, lower at four-fifths before end of the cell; submedian slightly curved in the middle: hindwing quadrate, short, broad; apex slightly and middle of exterior margin acutely angular; abdominal margin somewhat long; cell broad, extending nearly two-thirds the wing; second subcostal at one-third before end of the cell; discocellulars slender, outwardly oblique, radial very slender; middle median from close to end of the cell, lower at one-fourth before the end; submedian straight, internal curved. Body robust; palpi laxly compressed, terminal joint rather long, thick, cylindrical; antennæ slender, somewhat short, hooked tip slender.

*Type*, T. Thwaitesi.

**TAPENA THWAITESI** (PLATE 67, FIG. 2, 2a).

Male. Upperside dark purple-brown, with blackish outer margins and indistinct discal transverse macular fascia: forewing with two small semi-diaphanous white spots on the costa near the apex. Underside dark purple-brown. Female. Upper and underside greyish purple-brown, transverse macular fascia and outer borders dark purple-brown: forewing with three small semi-diaphanous white subapical spots, the lowest transversely narrow, two spots also at end of the cell, the upper one very slender, and two spots on the disc, each series being bordered by the dark fascia: hindwing with a semi-diaphanous spot at end of the cell.

Expanse  $1\frac{3}{10}$  to  $1\frac{6}{10}$  inch.

“Galle” (*Wade*).

Genus **ABARATHA**.

Forewing triangular; apex pointed; exterior margin short, oblique, slightly convex and uneven; posterior margin short; first to fourth subcostals at equal distances apart, first emitted at one-third before end of the cell; discocellulars inwardly oblique, upper radial from angle near subcostal, lower from their middle; cell two-thirds the wing; middle median at one-fourth and lower at two-thirds before end of the cell; submedian much recurved: hindwing short, apex angular, exterior margin sinuously angular below the apex and in the middle; abdominal margin rather long; second subcostal at one-fourth before end of the cell; discocellulars nearly erect, upper shortest, radial from their middle; cell broad; middle median from close to end of the cell and lower at beyond one-third before the end;

submedian straight, internal recurved. Body short, robust; palpi laterally compressed in front, terminal joint short, conical; legs naked; antennal hooked-club thick and bluntly pointed.

*Type*, A. Ransonneti.

**ABARATHA RANSONNETI** (PLATE 97, FIG. 1).

*Pterygospidea Ransonnetii*, Felder, Verh. Zool. Bot. Gesch. 1868, p. 284.

*Pterygospidea Potiphora*, Hewitson, Exot. Butt. v. *Pter.* pl. 1, fig. 7 (1873).

Upperside fuliginous ochreous-brown. Male: forewing with three small semi-transparent white spots before the apex (and sometimes one or two very minute spots obliquely below them), two spots within end of the cell, a slender spot between the upper and middle median veins, a larger spot between the latter vein and submedian, and followed below it by two small obliquely disposed spots; a marginal double row of pale indistinct small lunules: hindwing with a broad medial discal macular pale ochreous band traversed by brown veins and a spot within end of the cell, the outer discal area suffused with grey-brown. Cilia alternated with white. Female: forewing with the spots and marginal lunules, and the macular band on hindwing more prominent, the latter also more distinctly bordered with grey. Underside: forewing paler brown; the basal area greyish-white, the spots with clouded black outer borders: hindwing greyish-white, the outer margin only being brown, traversed by a curved discal series of small blackish spots.

Expanse, ♂  $1\frac{3}{8}$ , ♀  $1\frac{5}{8}$  inch.

"Colombo. In weedy places on borders of cultivation. Just before S.W. monsoon. Not common. Slow flier; settles in grass" (*Hutchison*).

"Kandy" (*Wade*).

"Low country. Not common" (*Mackwood*).

**Genus HESPERIA.**

*Hesperia*, Fabricius, Ent. Syst. iii. i. p. 258, sect. 2, p. 325 (1793).

*Pyrgus*, Hübner, Verz. bek. Schmett. p. 109 (1816).

*Scelothrix*, Ramb. Catal. Lep. Andal. i. p. 63 (1858).

*Syrictus*, Boisduval, Icones, p. 230 (1832-3).

Wings small: forewing elongated, triangular; exterior margin short; cell of nearly uniform width and convex at the end; first subcostal beyond one-third before end of the cell, second and third branches at very wide and equal distances apart from the first; discocellulars convex, upper radial from angle near subcostal, lower from their middle; the middle median at one-sixth and lower at four-sixths before end of the cell; submedian straight: hindwing broadly conical; second subcostal at one-fourth before end of the cell, and in a line with base of the first; discocellulars slightly oblique and concave, slender; radial from their middle; the middle median

from near end and lower about one-half before end of the cell. Body short; palpi lax in front, terminal joint stout, rather long and pointed; tibiæ pilose beneath, hind tibiæ with a long tuft of hair above; antennæ with a stout terminal club.

*Type*, P. Malvæ.

**HESPERIA GALBA** (PLATE 71, FIG. 6).

*Hesperia Galba*, Fabricius, Ent. Syst. iii. p. 352 (1793).

*Pyrgus Galba*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 281.

*Pyrgus Superna*, Moore, Catal. Lep. Mus. E.I.C. i. p. 249 (1857); Proc. Zool. Soc. 1865, p. 792.

Upperside olive-brown: forewing with three pale yellowish-white spots within the cell, two beneath it, a transverse discal series of four spots followed by three minute subapical spots; a submarginal row of smaller spots: hindwing with a subbasal, a large medial, and small submarginal spots. Cilia of both wings alternate brown and pale yellow. Abdomen with narrow pale segmental bands. Underside paler olive-brown: forewing with the costal margin and spots as above, pale yellow: hindwing with a transverse subbasal, medial, and a narrow submarginal pale yellow maculated band. Palpi and body beneath, and legs, pale yellow.

Expanse, ♂  $\frac{3}{4}$ , ♀ 1 inch.

"Western and Central Provinces. In forests. Rare. Slow flier, but hard to catch, as it flies low down in grass and underwood" (*Hutchison*).

"Kandy. Common" (*Wade*).

"Low country, away from sea-coast" (*Mackwood*).

**Genus GOMALIA.**

*Gomalia*, Moore, Proc. Zool. Soc. Lond. 1879, p. 144.

Wings short: forewing with the costa slightly arched at the base, apex acute, exterior margin oblique, posterior angle slightly convex; costal vein short; subcostal vein five-branched, first, second and third arising before end of the cell, fourth and fifth from its end; upper discocellular angled, lower oblique; upper radial from angle of upper discocellular, lower radial from its end; median vein three-branched, middle branch from near end of the cell; submedian vein nearly straight: hindwing lobed and angled near base of costal margin, apex and exterior margin very convex; costal vein extending to near apex; subcostal vein two-branched; one radial; median vein three-branched. Body short, thorax stout; palpi thickly pilose; antennæ short, with a thick very blunt club; legs moderately long, squamous.

**GOMALIA ALBOFASCIATA** (PLATE 71, FIG. 7).

*Gomalia albofasciata*, Moore, Proc. Zool. Soc. Lond. 1879, p. 144.

Upperside dark greyish olive-brown: forewing with a black transverse basal and a discal band; a small white erect streak at end of the cell, two small lunular spots

on the disc, and three conjugated spots obliquely before the apex: hindwing with a broad white medial transverse band, a small subbasal spot, and a very indistinct submarginal fascia. Underside paler; white markings as above. Palpi, body, legs, and antennæ beneath white.

Expanse  $\frac{7}{8}$  inch.

“ Captured in dense jungle between Kirrinde and Werewille beyond Hambantotte, on the S.E. coast ” (*Wade*).

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   *Deva*, Moore, 108.  
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   *intermedia*, Feld. 39.  
   *Iphita*, Cram. 39.  
   *Laomedia*, Linn. 40.  
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     Karsandra, *Moore*, 78.  
     pygmæa, *Snellin*, 79.



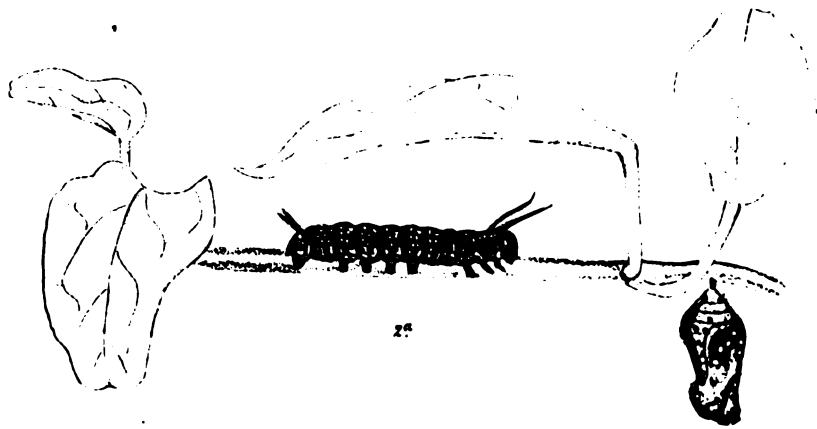
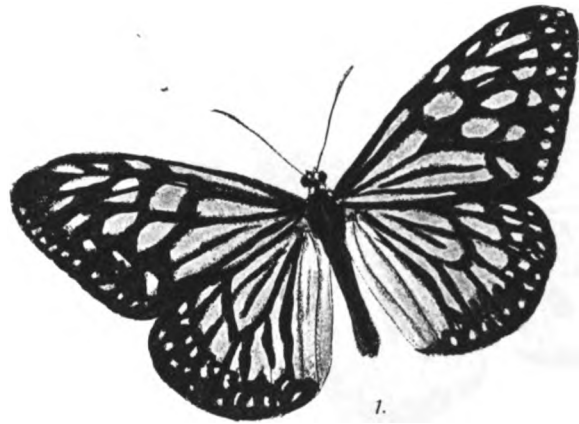
*Eu. Meon drigitata*

*Junonia hecabe*

J. Rees & C. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



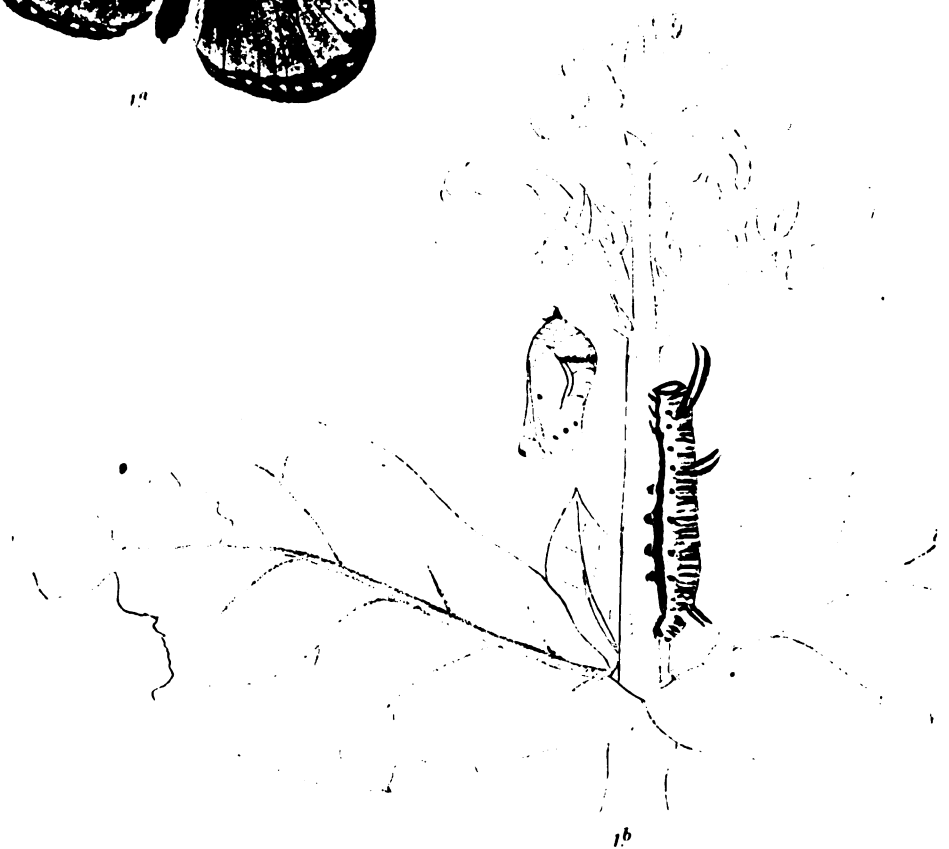
F.C. Moore del et Lith

Vincent Brooks Day & Son lith.

L. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



F. C. Moore & Co. Ltd. Edin.

Wm. & A. R. Barclay & Co. Edin.

J. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



1.



1<sup>a</sup>



2.



2<sup>a</sup>

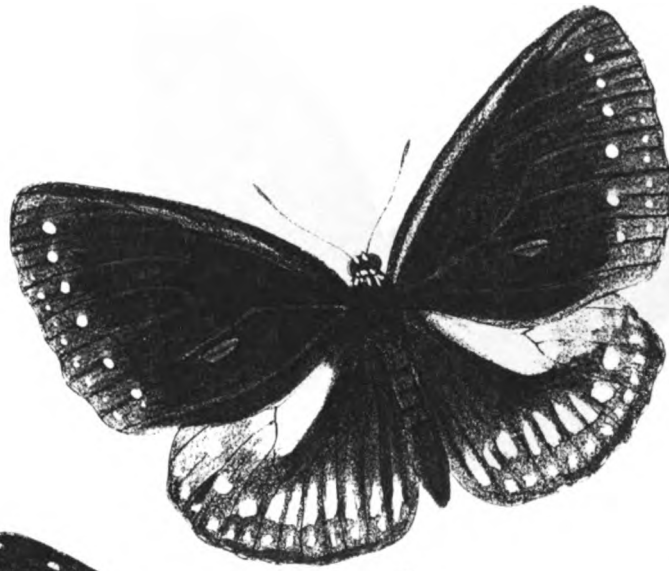
F. C. Moore del. et lith.

Wentworth Brooks, Day & Son, Imp.

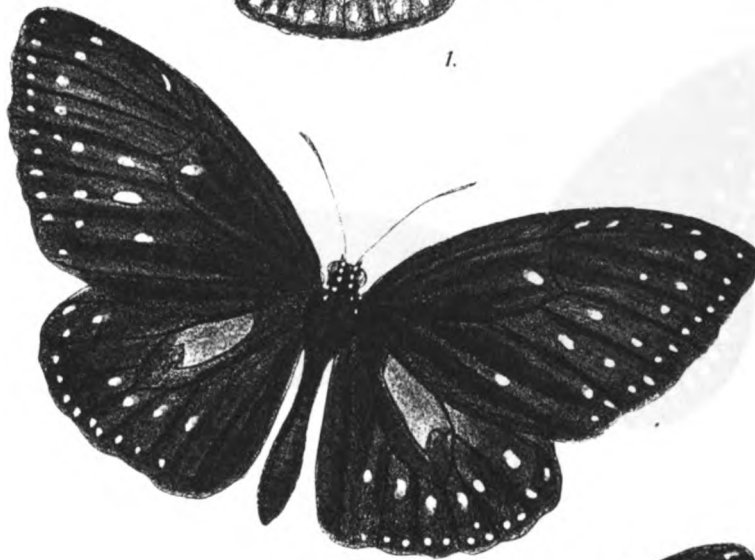
L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



1.



2.



3.

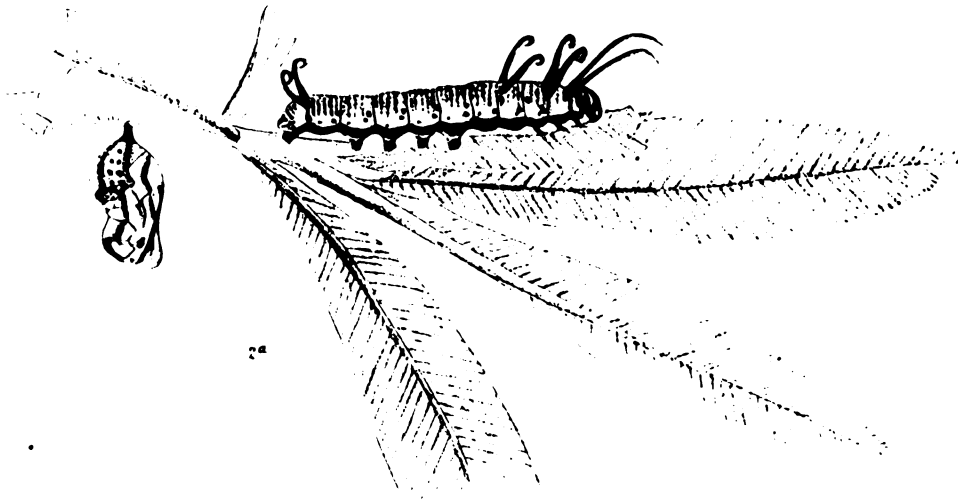
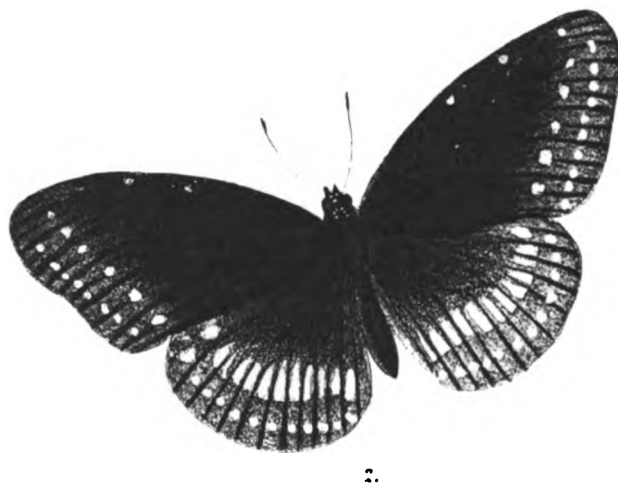
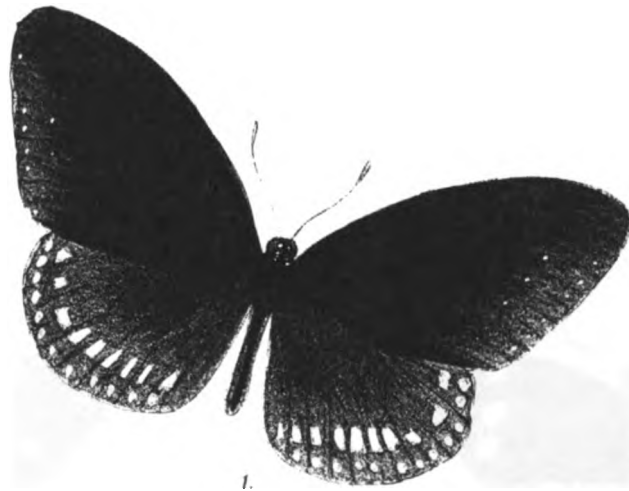
M. ...

M. ...

J. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



F. C. Moore del et lith.

L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1





F. C. Moore del. et lith.

Yves et Boudry sculp. et lith.

J. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



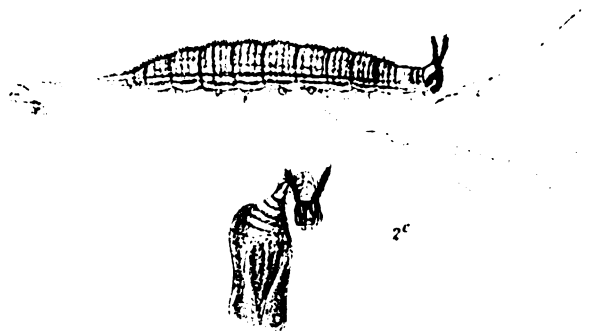
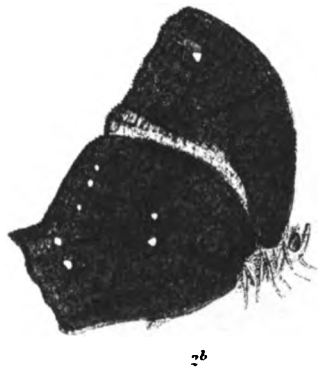
*U. Moore del et lith*

*W. Woodhouse sculp*

L. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



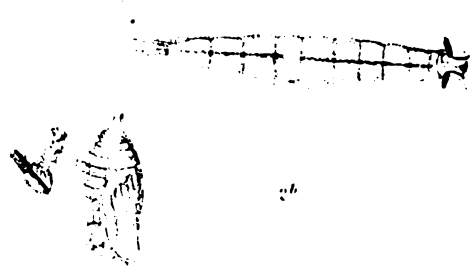
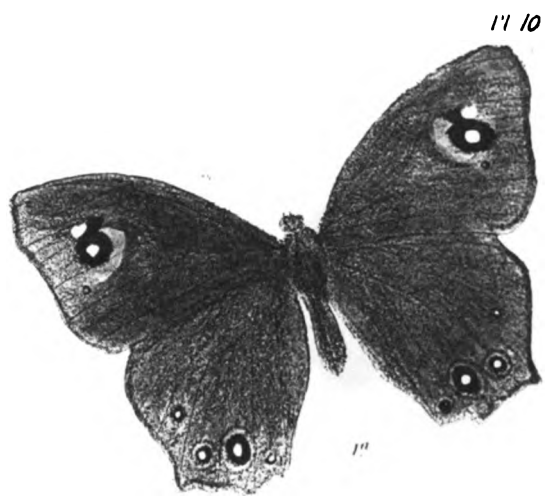
1. *Meane del C. Lath*

Vincent Brooks, engraving

J. Reuze, J. C. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1

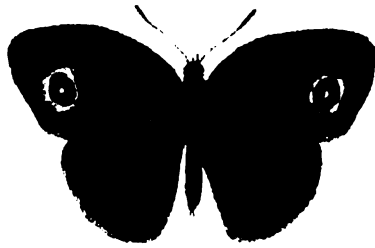


Museo del J. J. J.

J. J. J. J. J.

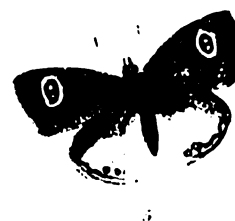
ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 1



J. Reuze & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

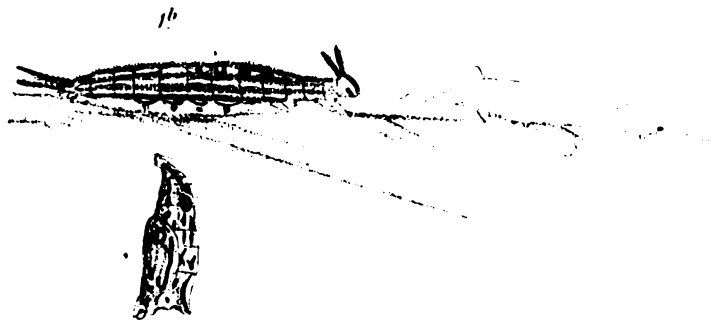
BOX 30 FOLDER 1



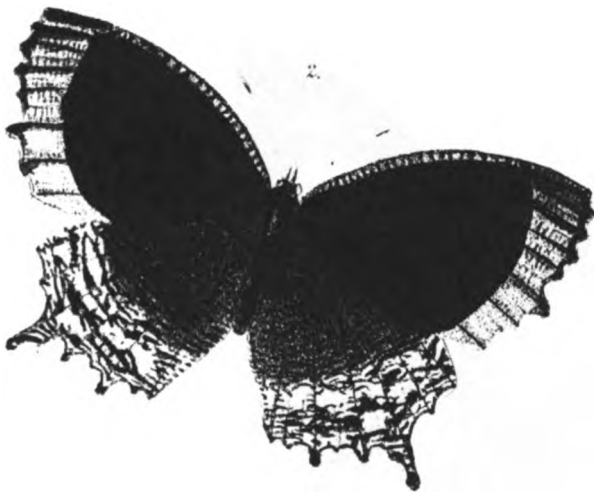
1.



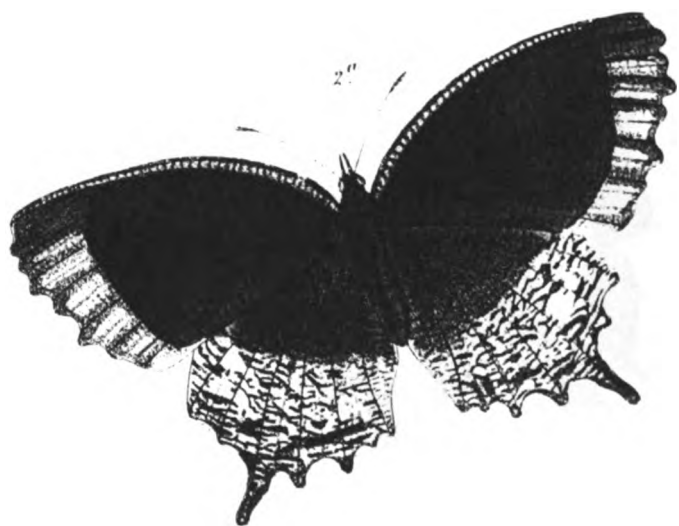
1'



1b



2.



2'

1. 11. 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.

1. 11. 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.

1. 11. 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.

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 2

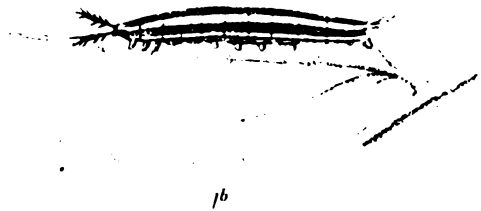
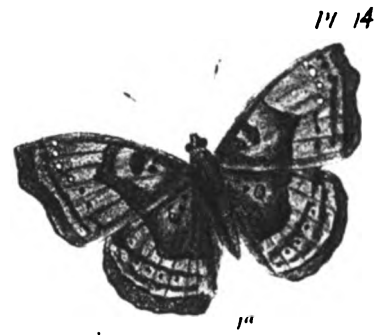


Fig. Moore's Delict. 146

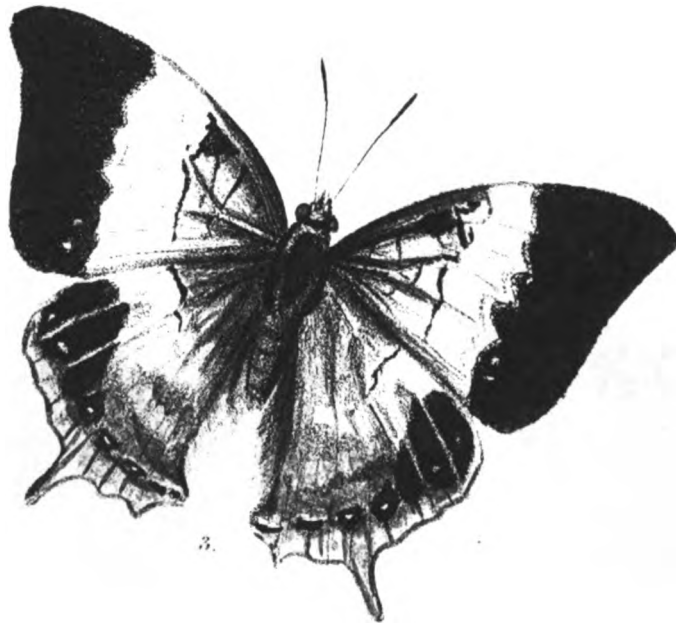
Green's Broad. 146. 147. 148.

L. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

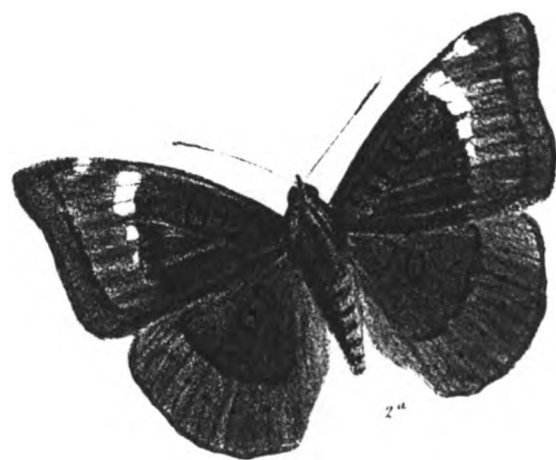
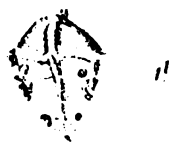
BOX 30 FOLDER 2





ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 2



ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

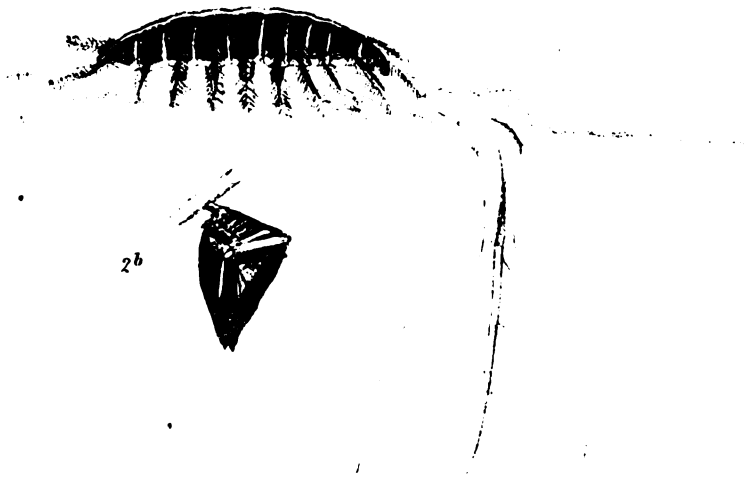
BOX 30 FOLDER 2



1.



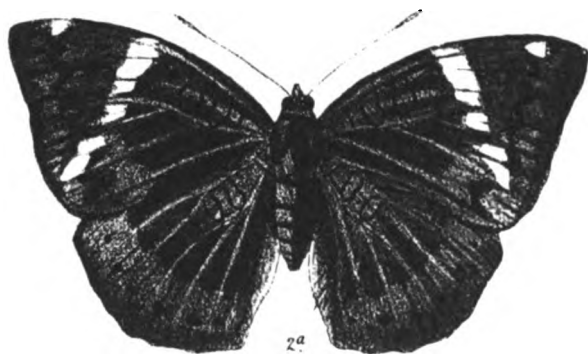
1'



2b



2.



2a

F.C. Moore del. et lith.

Vincent Brooks Day & Son Imp.

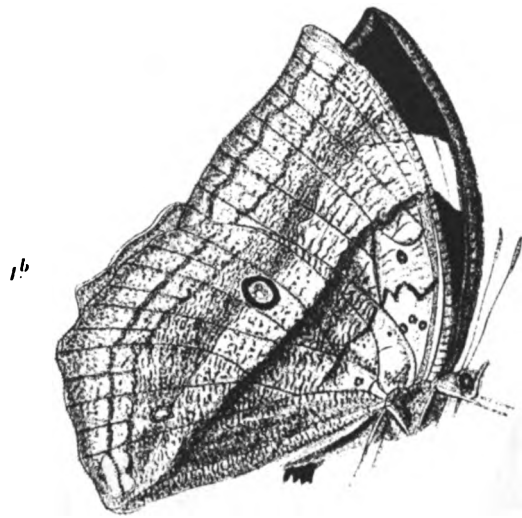
L. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

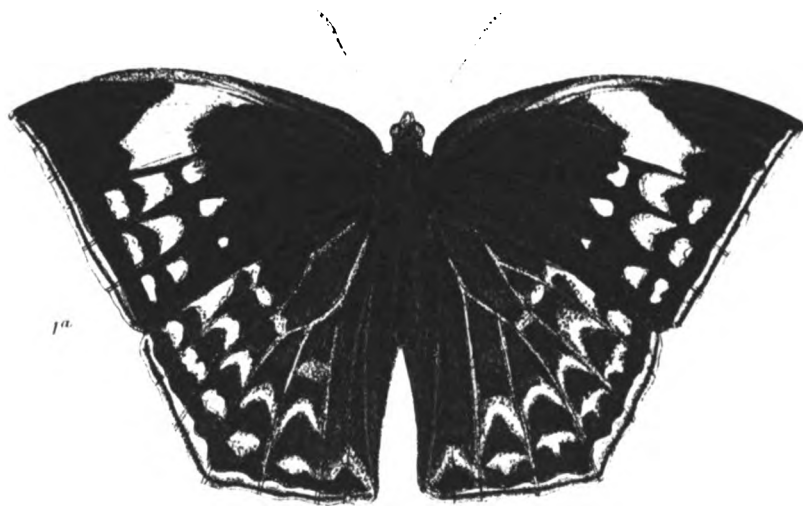
BOX 30 FOLDER 2



1.



1<sup>b</sup>



1<sup>a</sup>

F. C. Moore del. et lith.

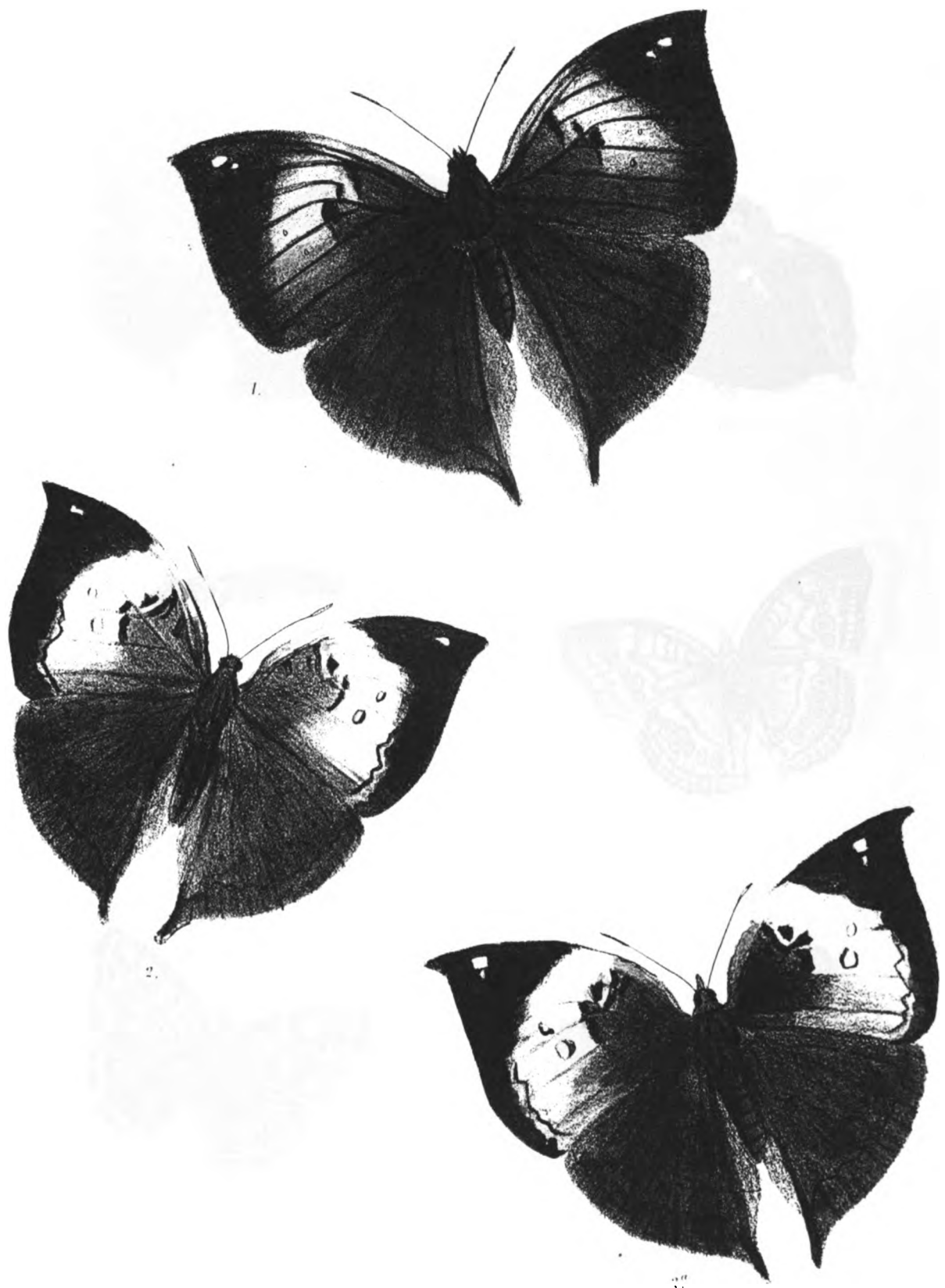
Zincken sculp. et grav. a. color. bar.

L. Reeve & Co. London.

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 2





ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 2





1.



1''



1b



2.



3''



3.

F.C. Moore de La Salle

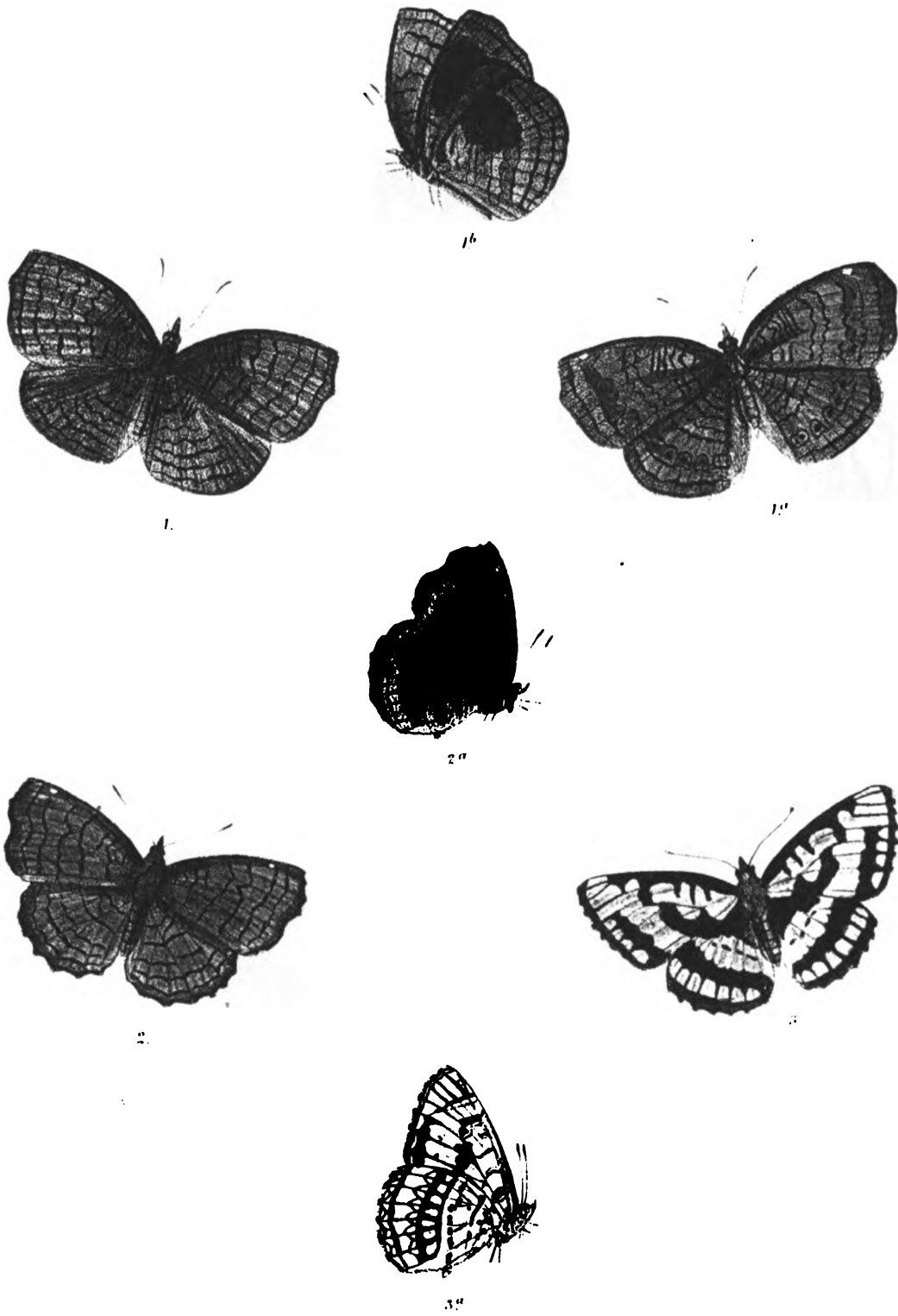
Smithsonian Institution

L. Rehn & C. Linder

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 2



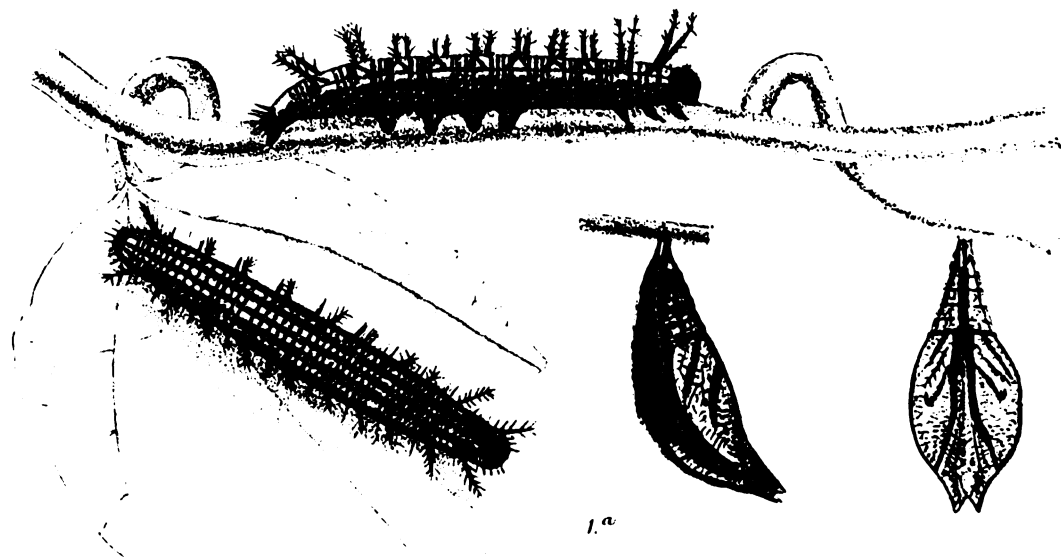


F. C. Moore del et lith.

L. Reeve & Co London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



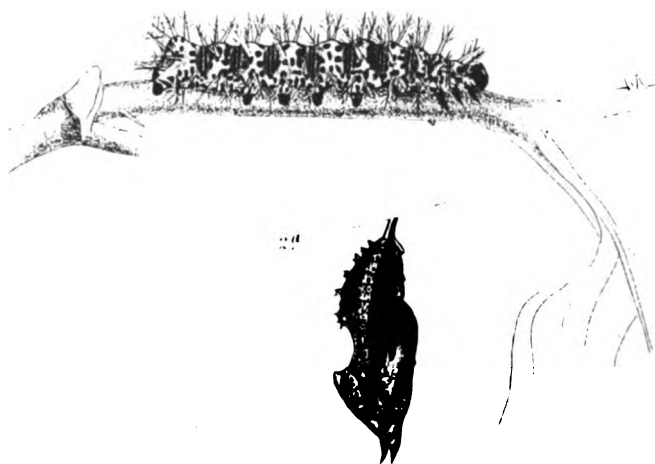
F. C. Moore del. et lith.

Zebrun Br. ink. Day. C. C. L. L.

L. Reeve & C<sup>o</sup>. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



F.C. Moore del. et lith.

J. Reeve. C<sup>o</sup>. London.

Van der Burgh. Del. & Sculp.

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



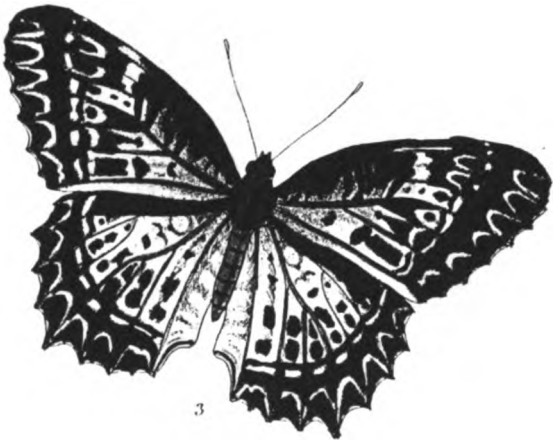
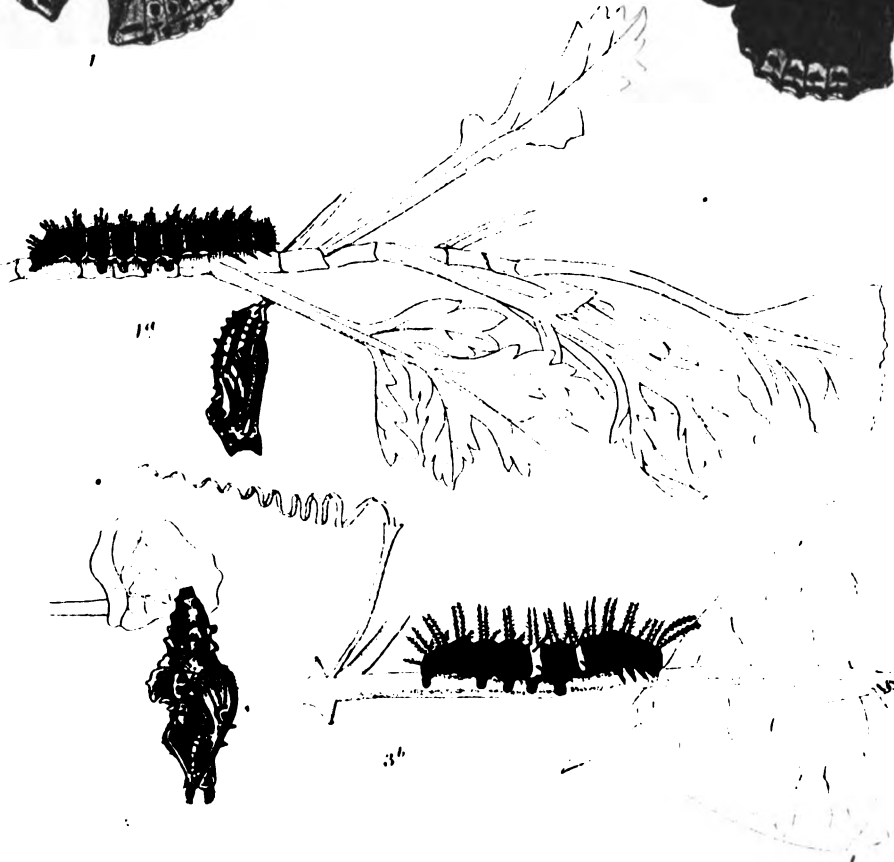
*E. M. ...*

*...*

J. Ross & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



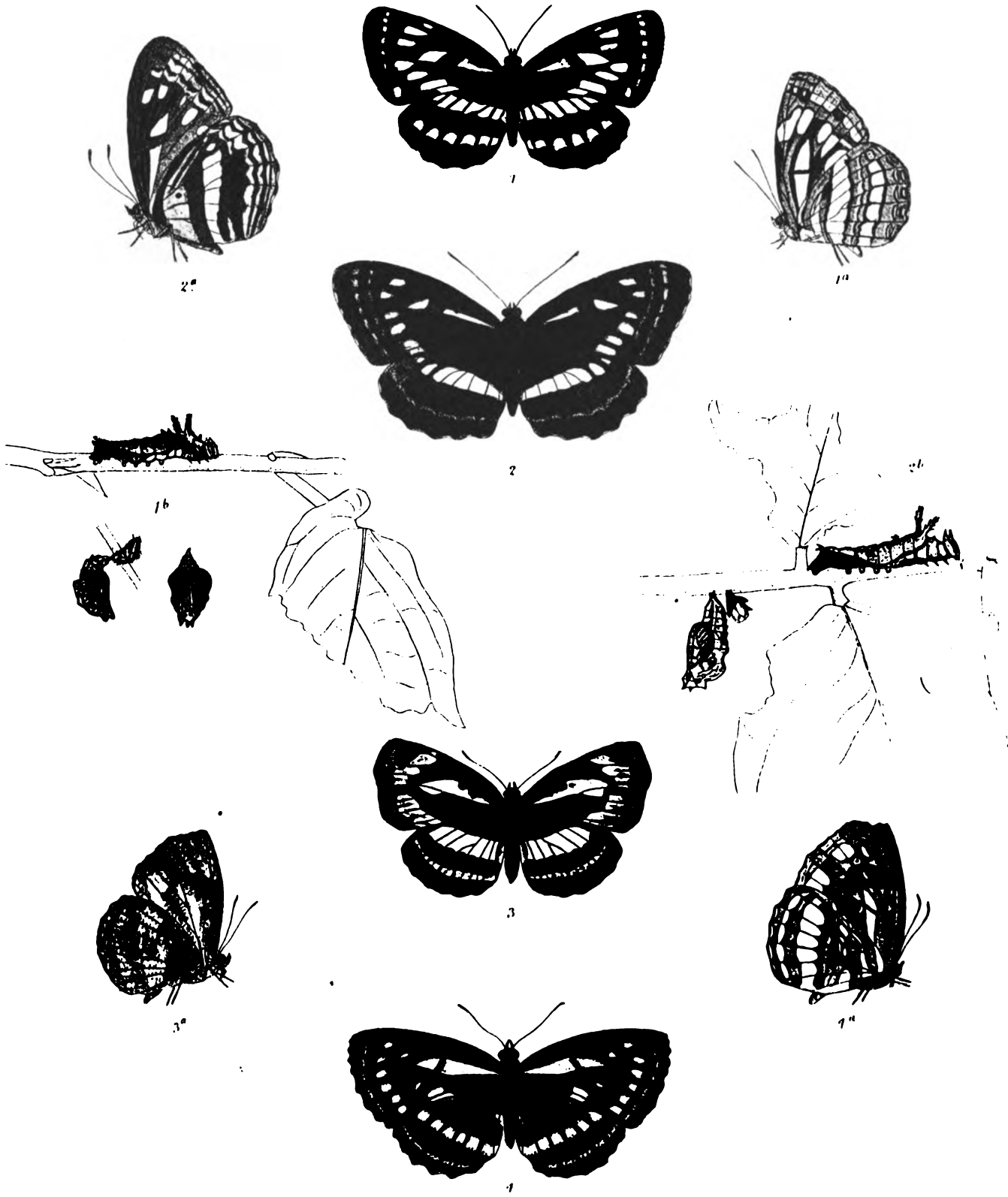
Ed. Moore & Ed. Lath

Ed. Moore & Ed. Lath

L. Reeve & Co. London.

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



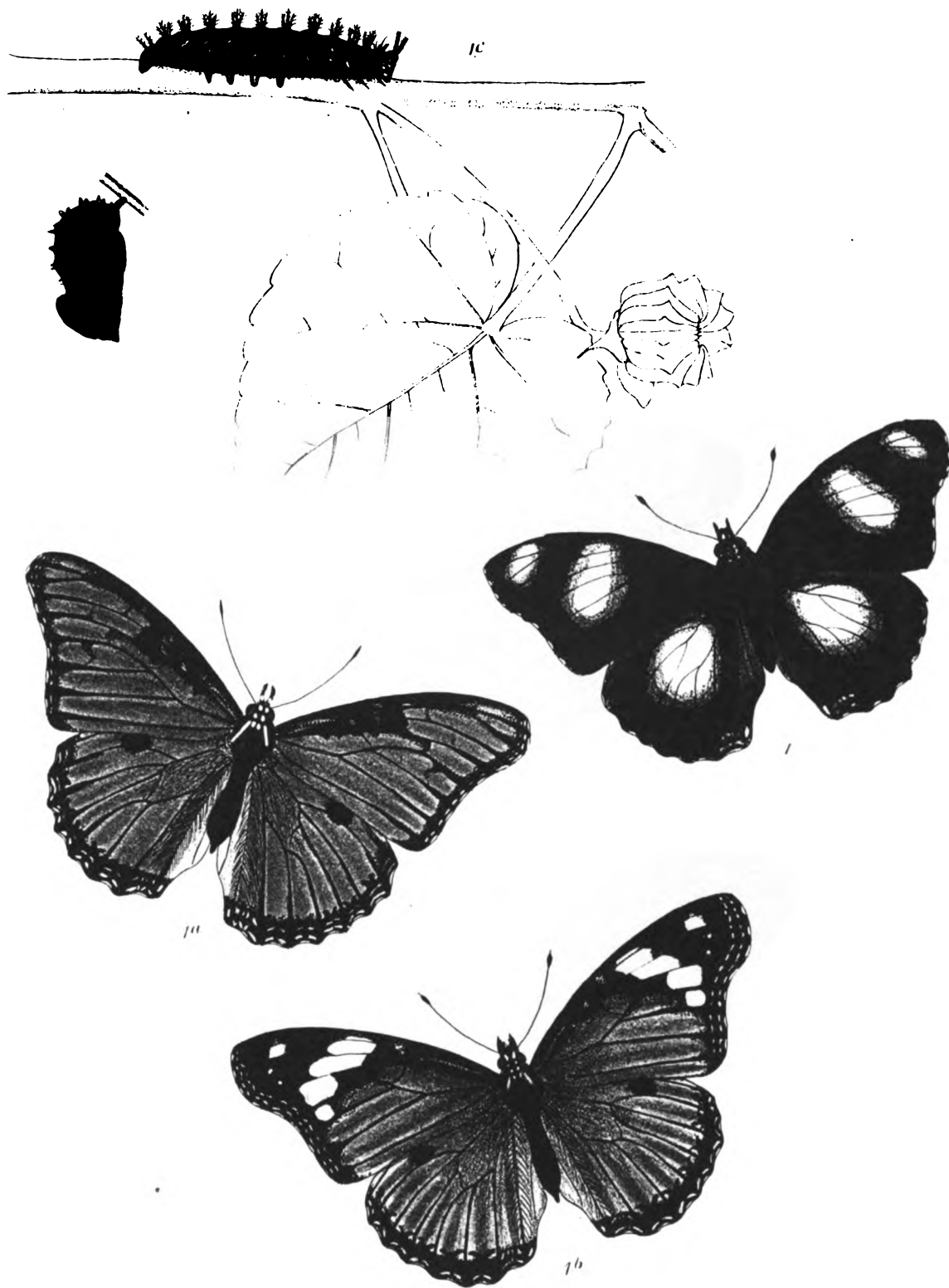
F.C. Moore del. et lith.

Thos. Brock D. & W. Colby

L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



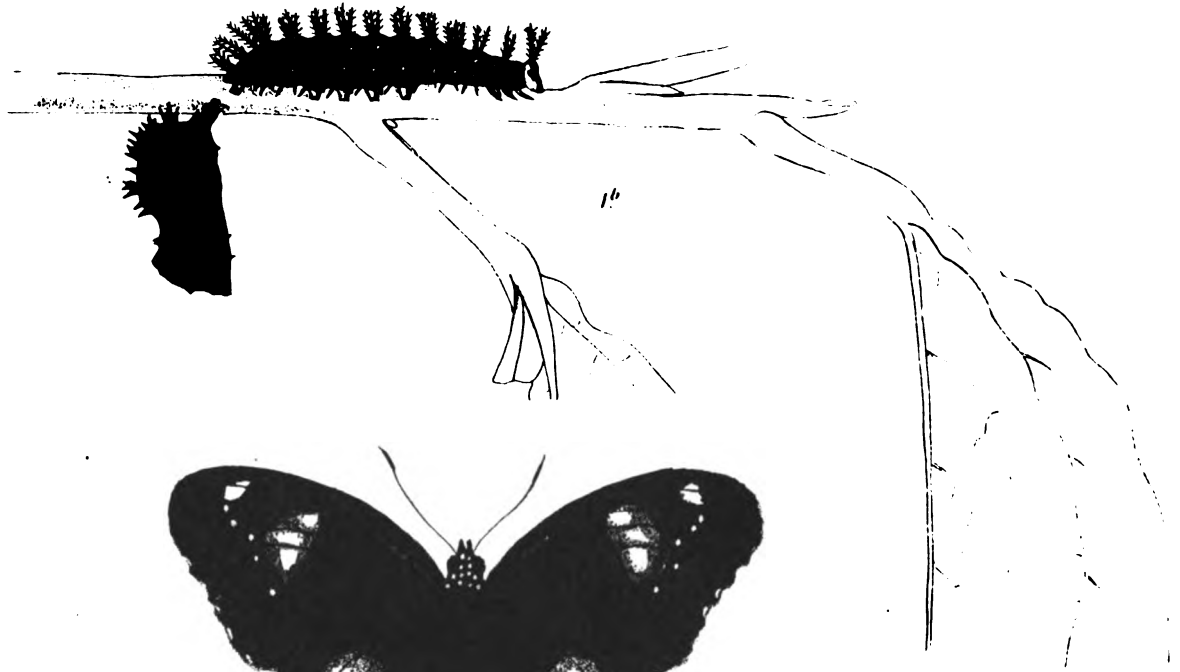
F. C. Moore del. et. lith.

Woodcut by J. D. White, lith.

L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



1



1'

F.C. Moore del et Lith

Theobald Brothers, Inc. Boston, Mass.

L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



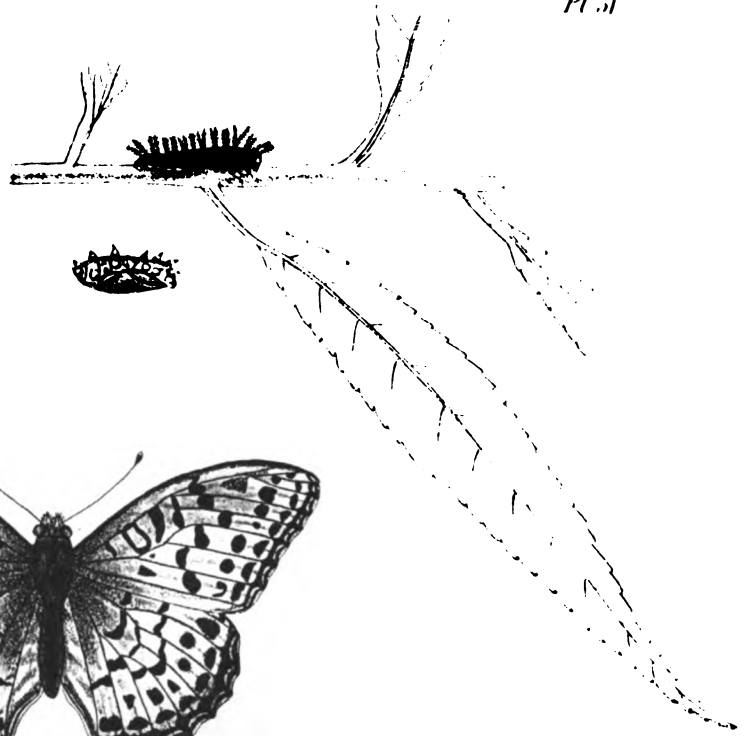


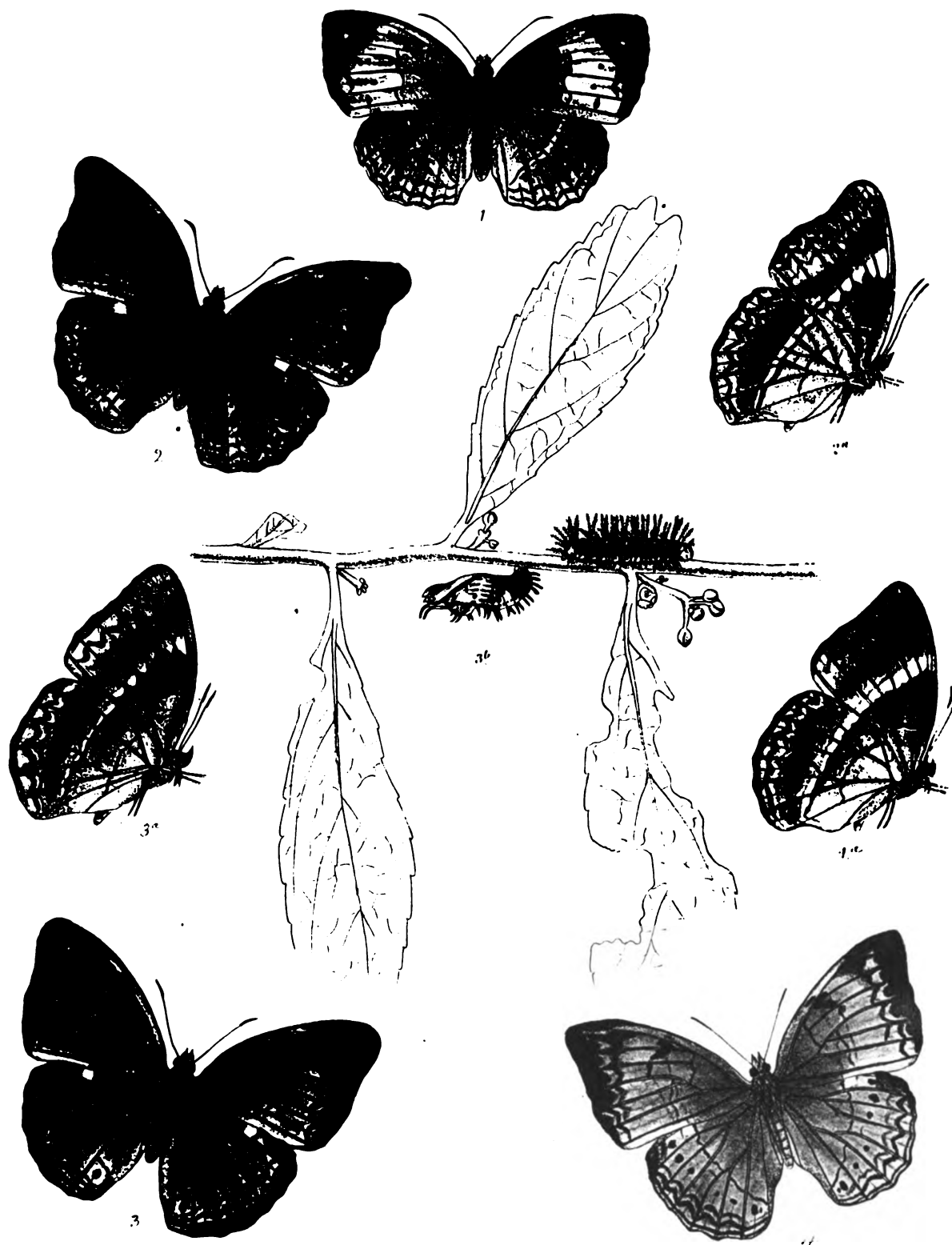
Fig. Moore del. et lith.

Moore del. et lith.

L. Reeve & C. Lenden

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



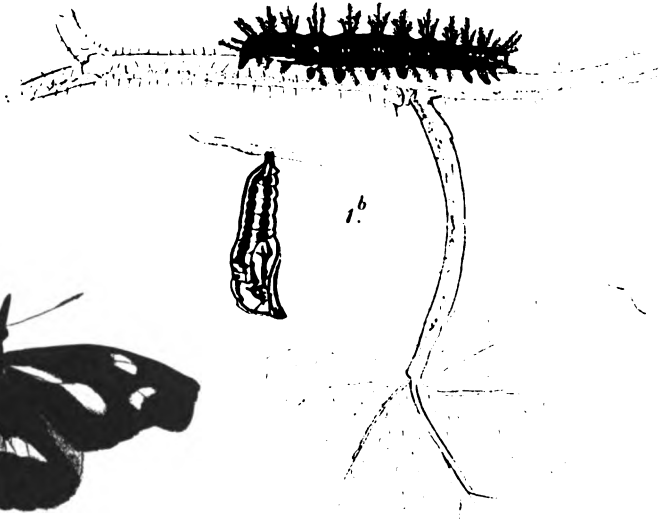
F. C. Moore del. et lith.

Vincent Brooks, Day & Son, lit.

L. Reeve & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



Ed. Moore del. et lith.

L. Reeve & Co. London.

Wm. & F. Woodbury del.

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 3



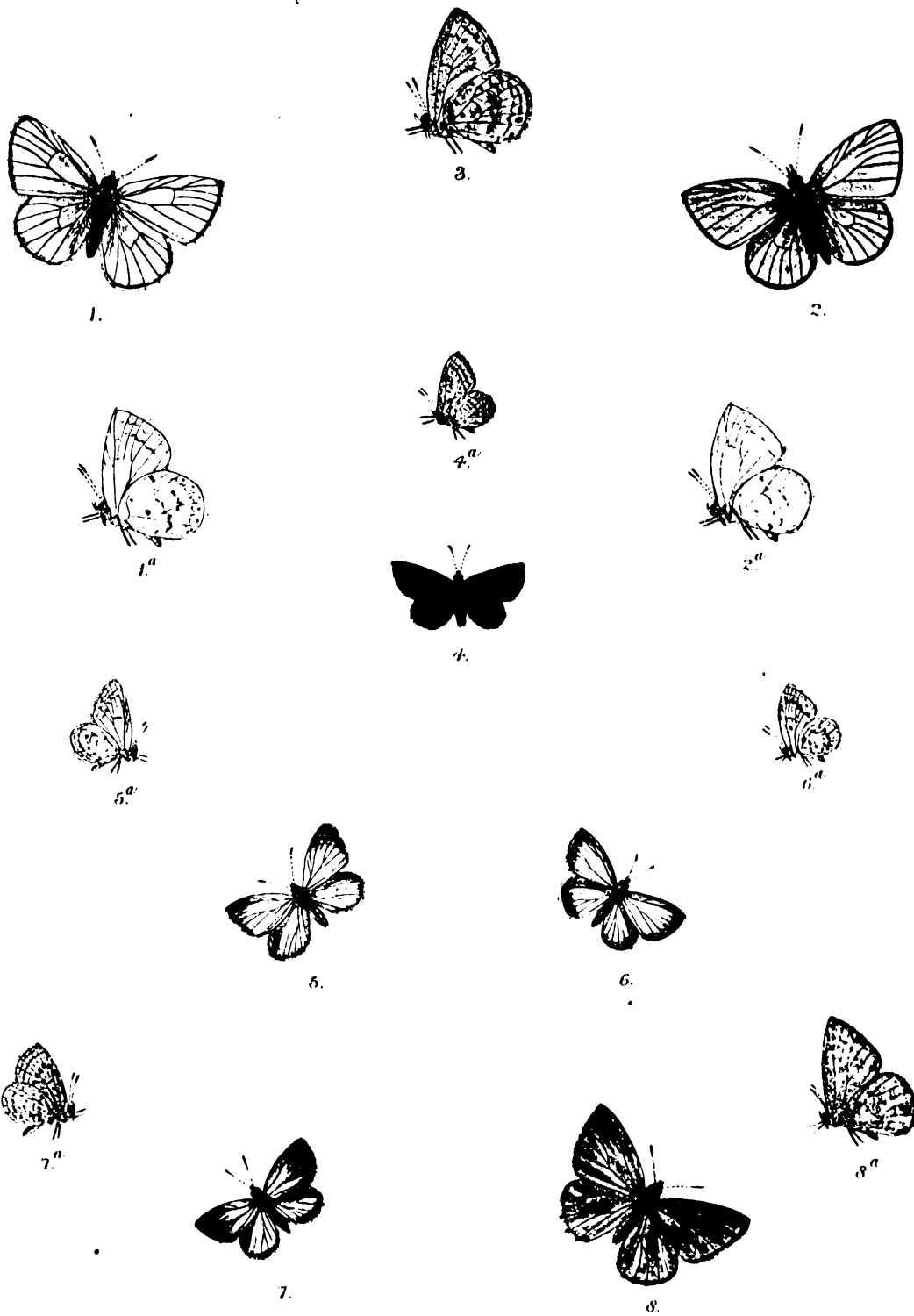
F. C. Moore del et lith.

Van der Schueren sculp.

J. Bosc & Co. London

ORIGINAL COLOR PLATE CONSERVED  
(STORED SEPARATELY)

BOX 30 FOLDER 4



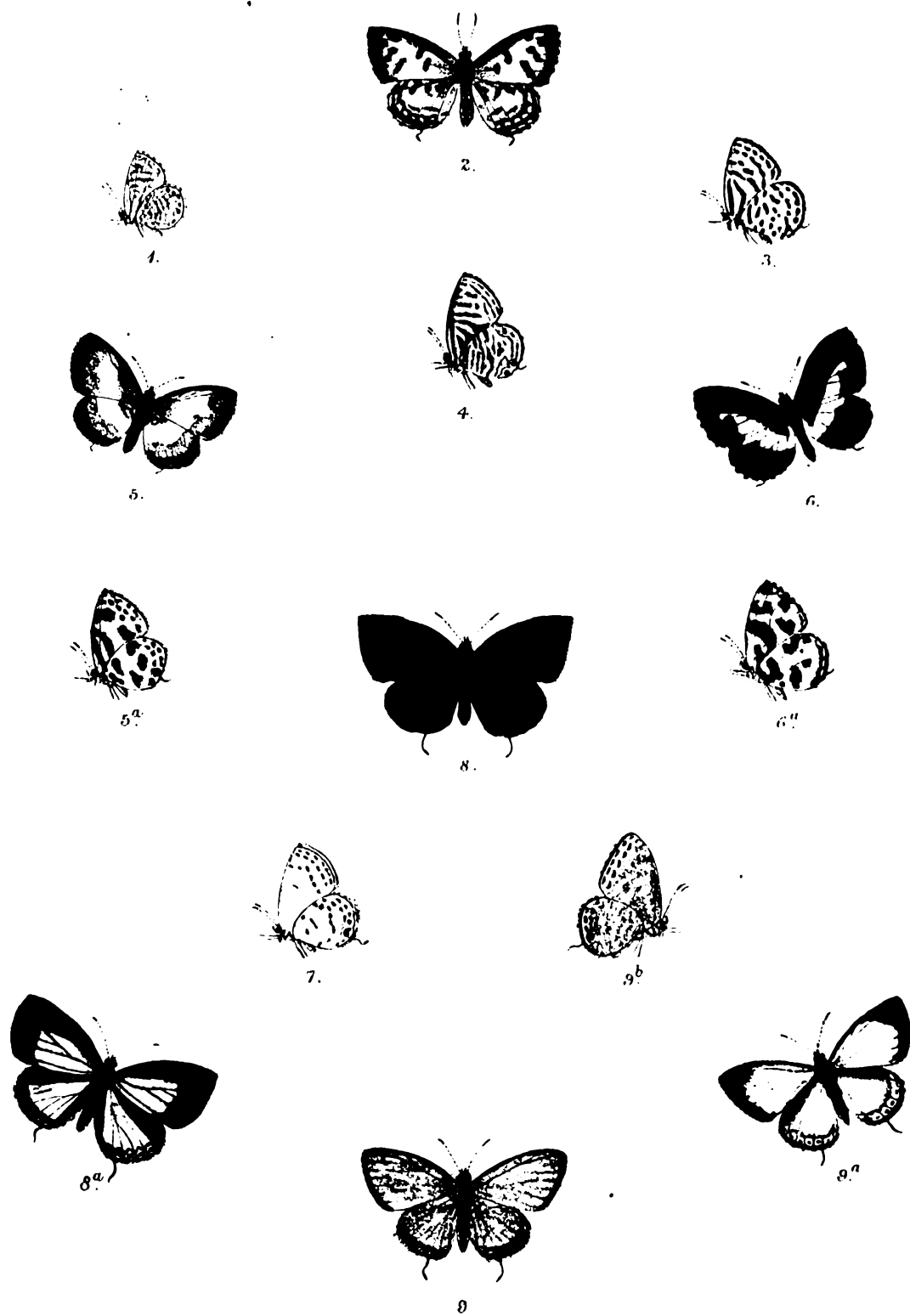
H. Moore del et lith.

L. Reeve & Co London.

Van der Hoeve Del. A. G. 1864.

ORIGINAL COLOR PLATE CONSERVED  
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BOX 30 FOLDER 4



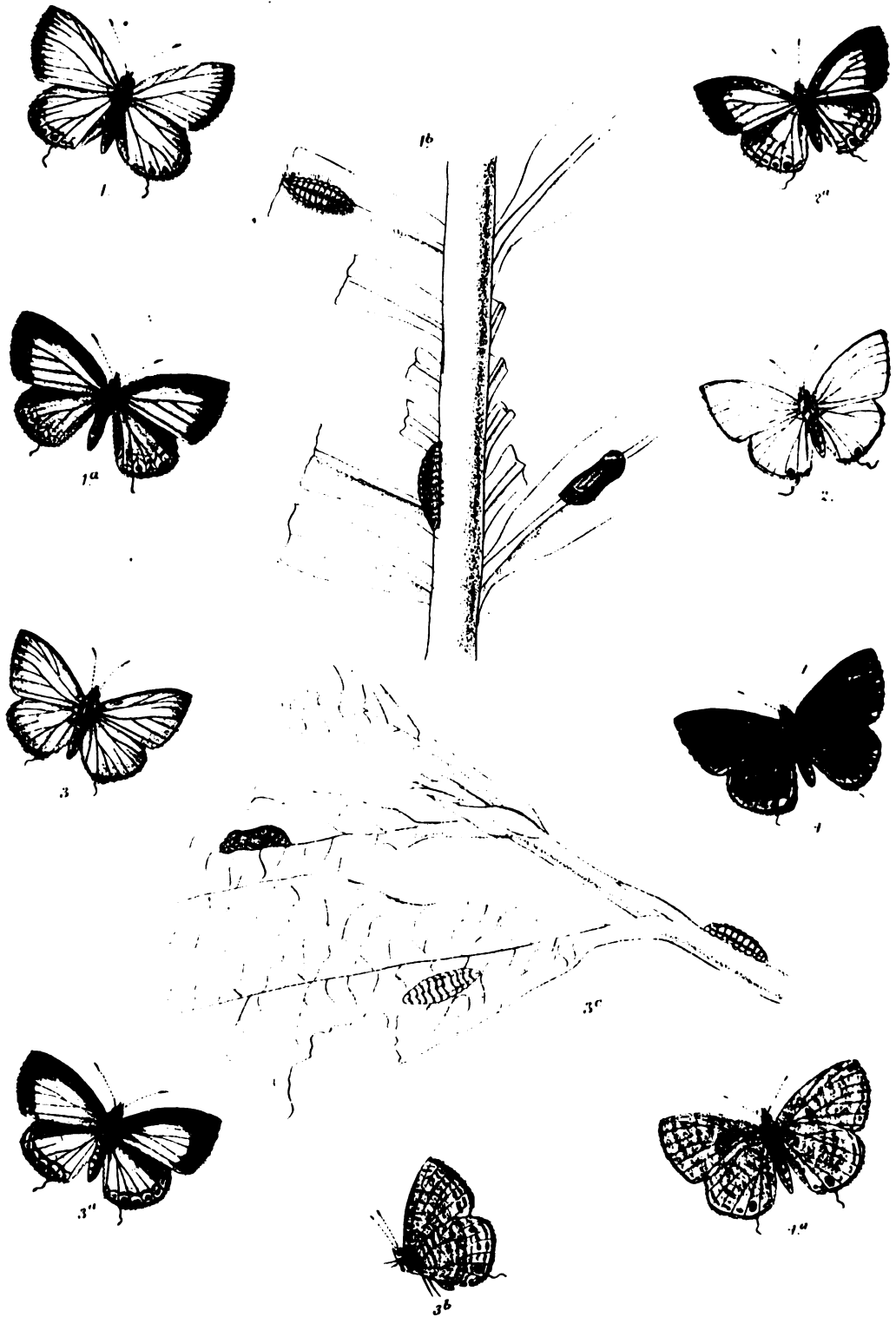
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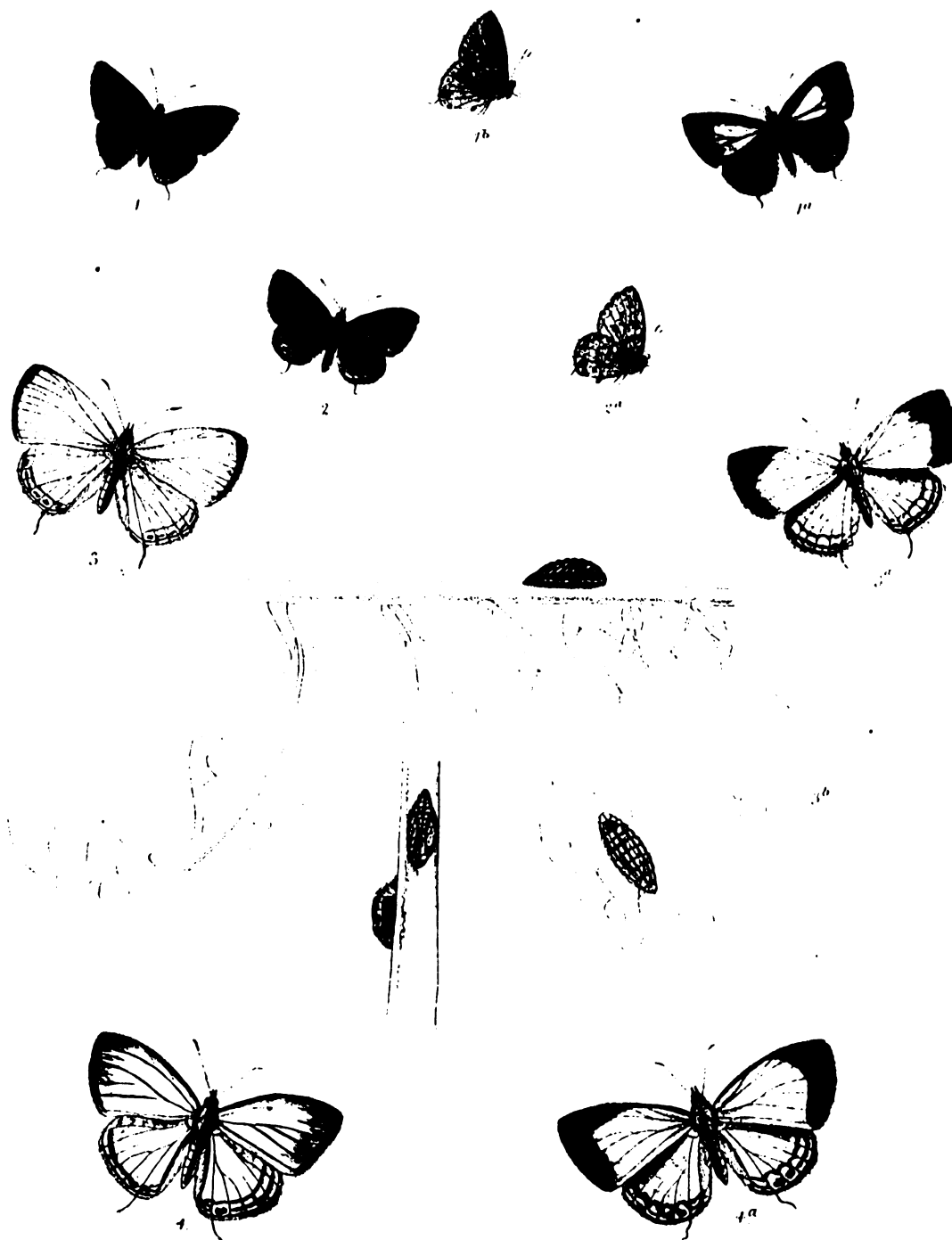
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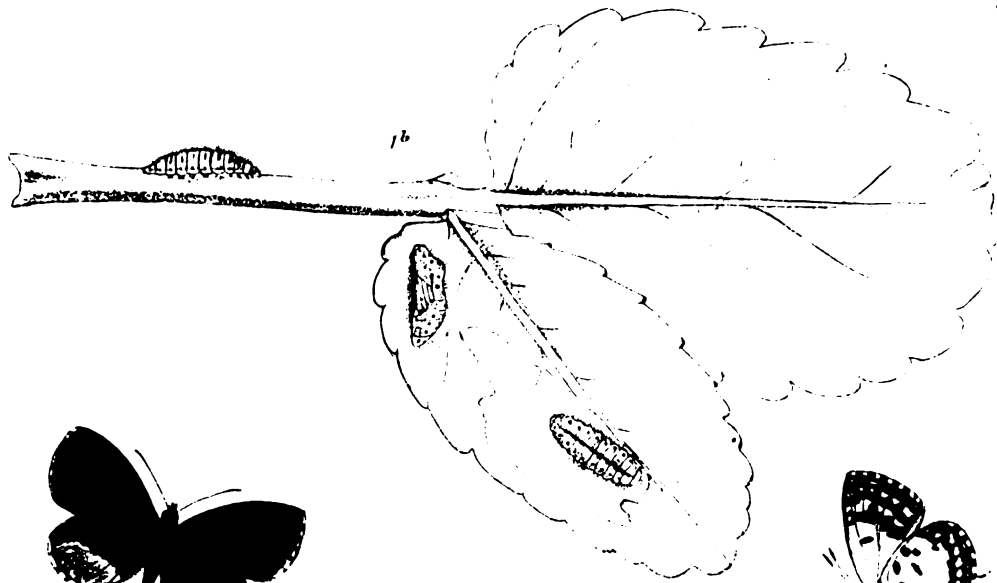
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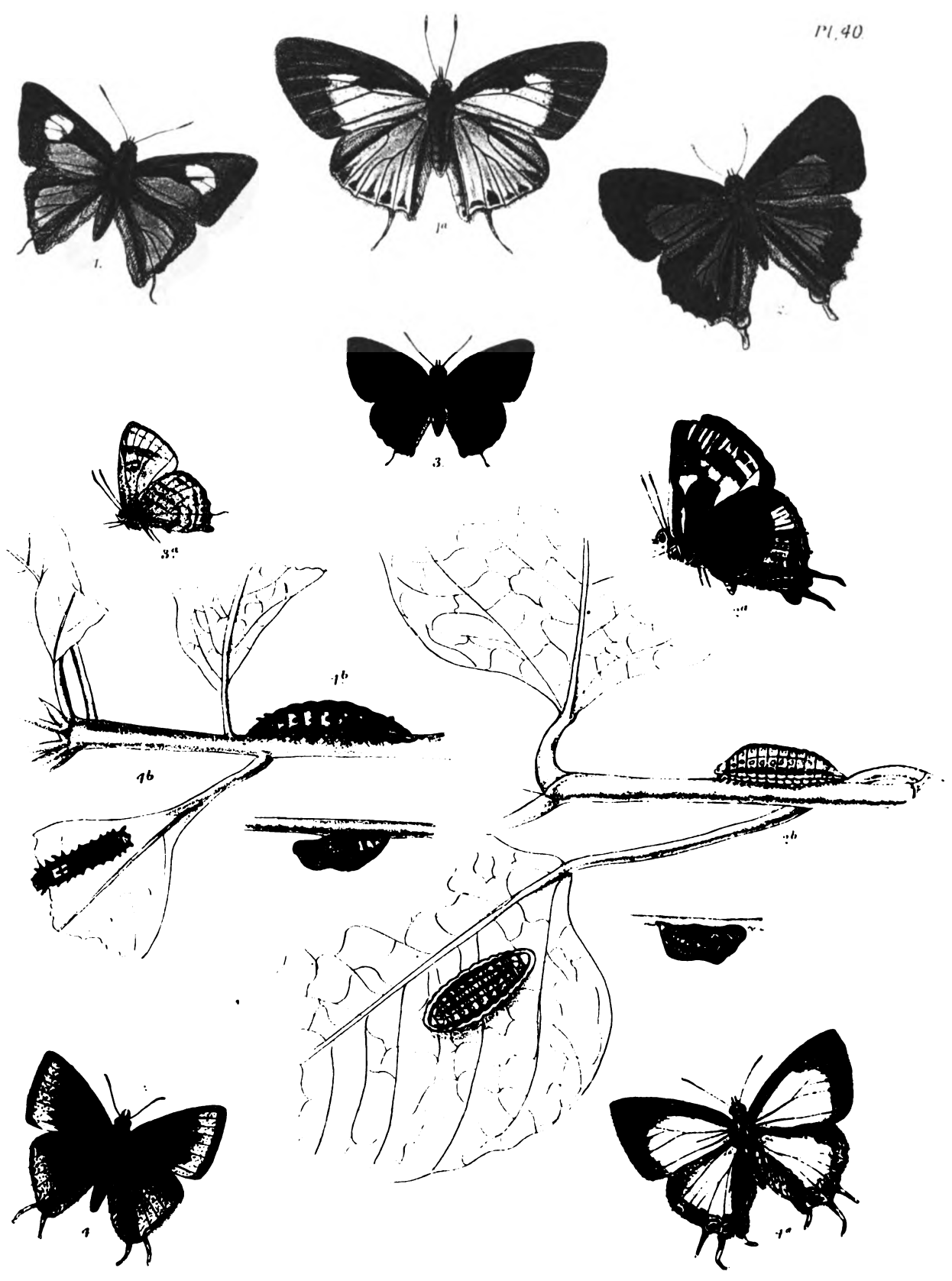
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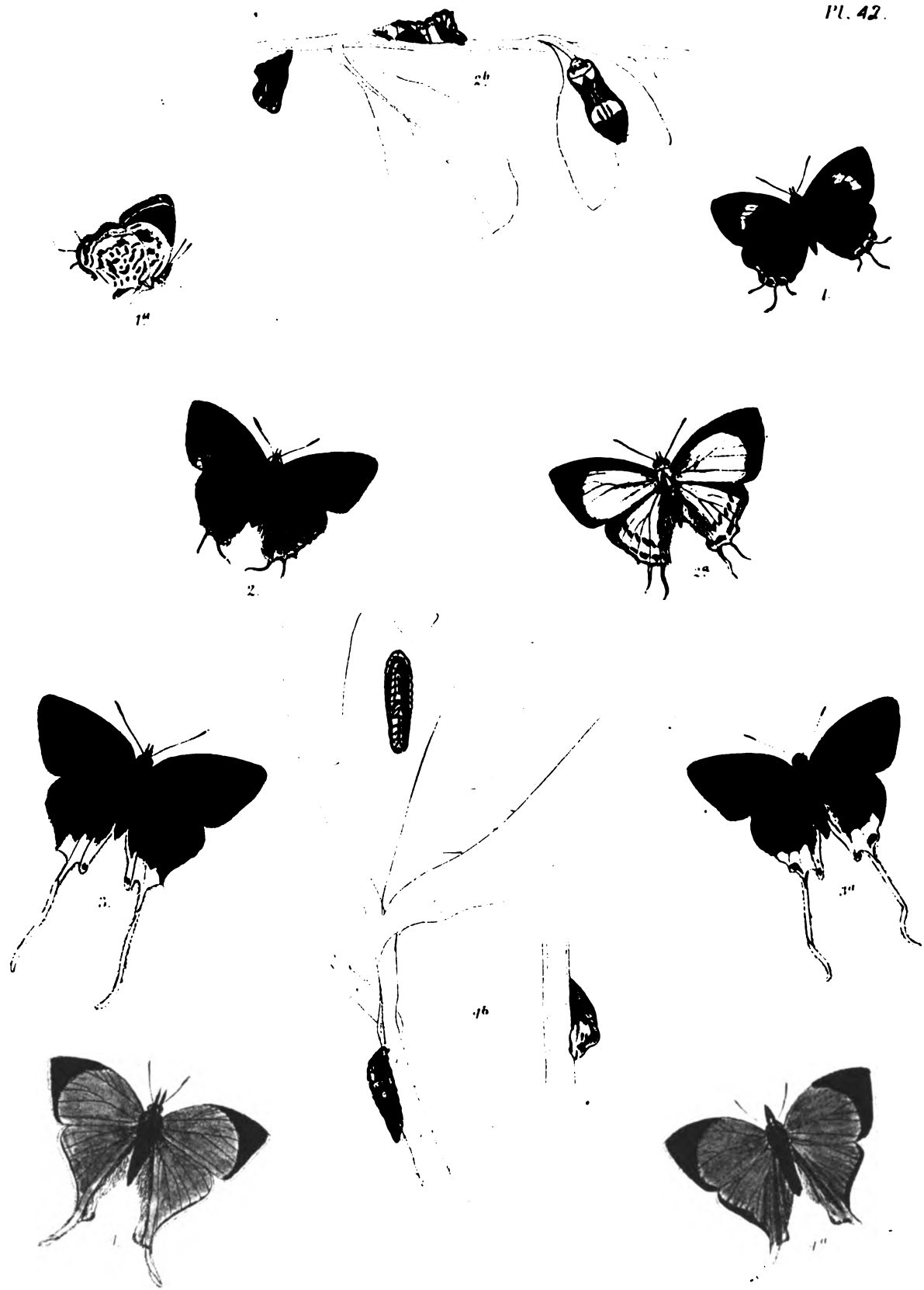
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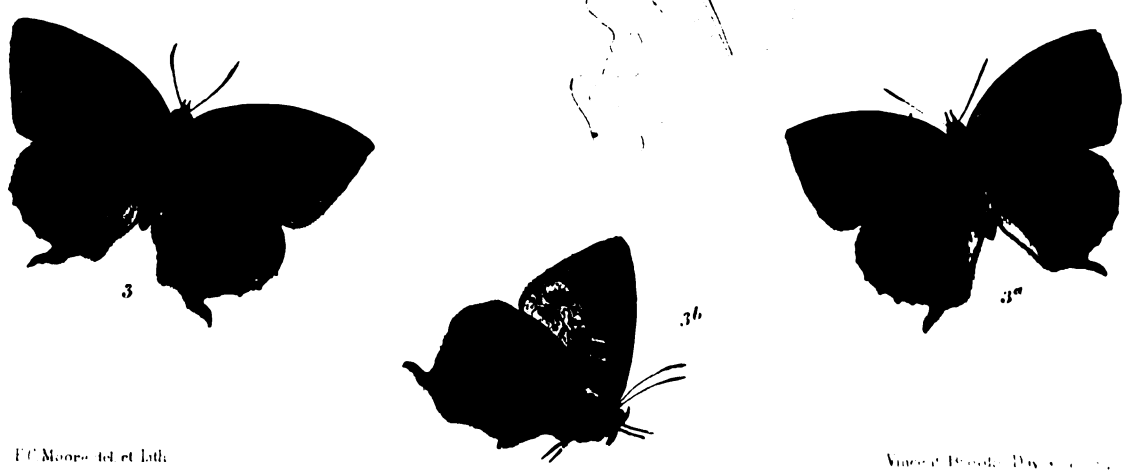
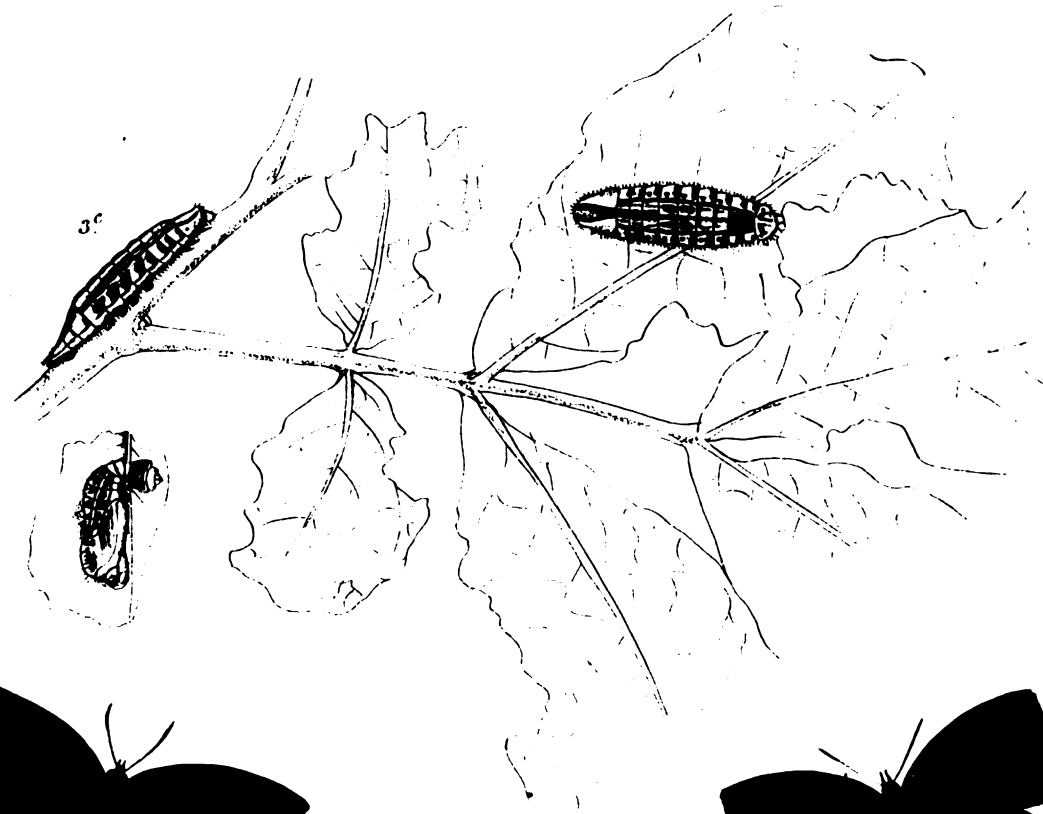
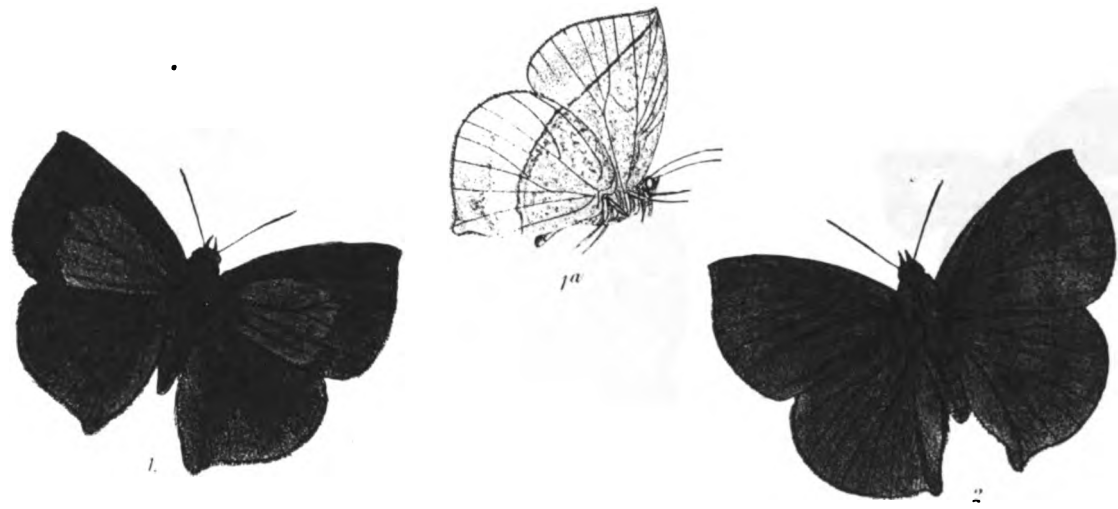
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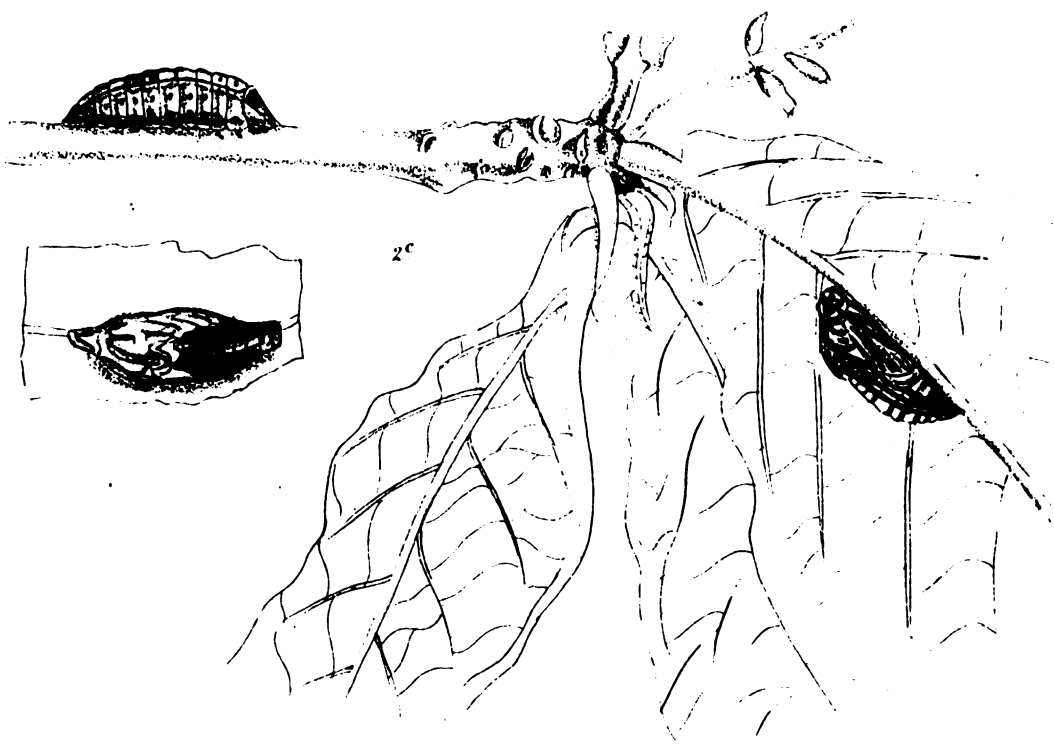
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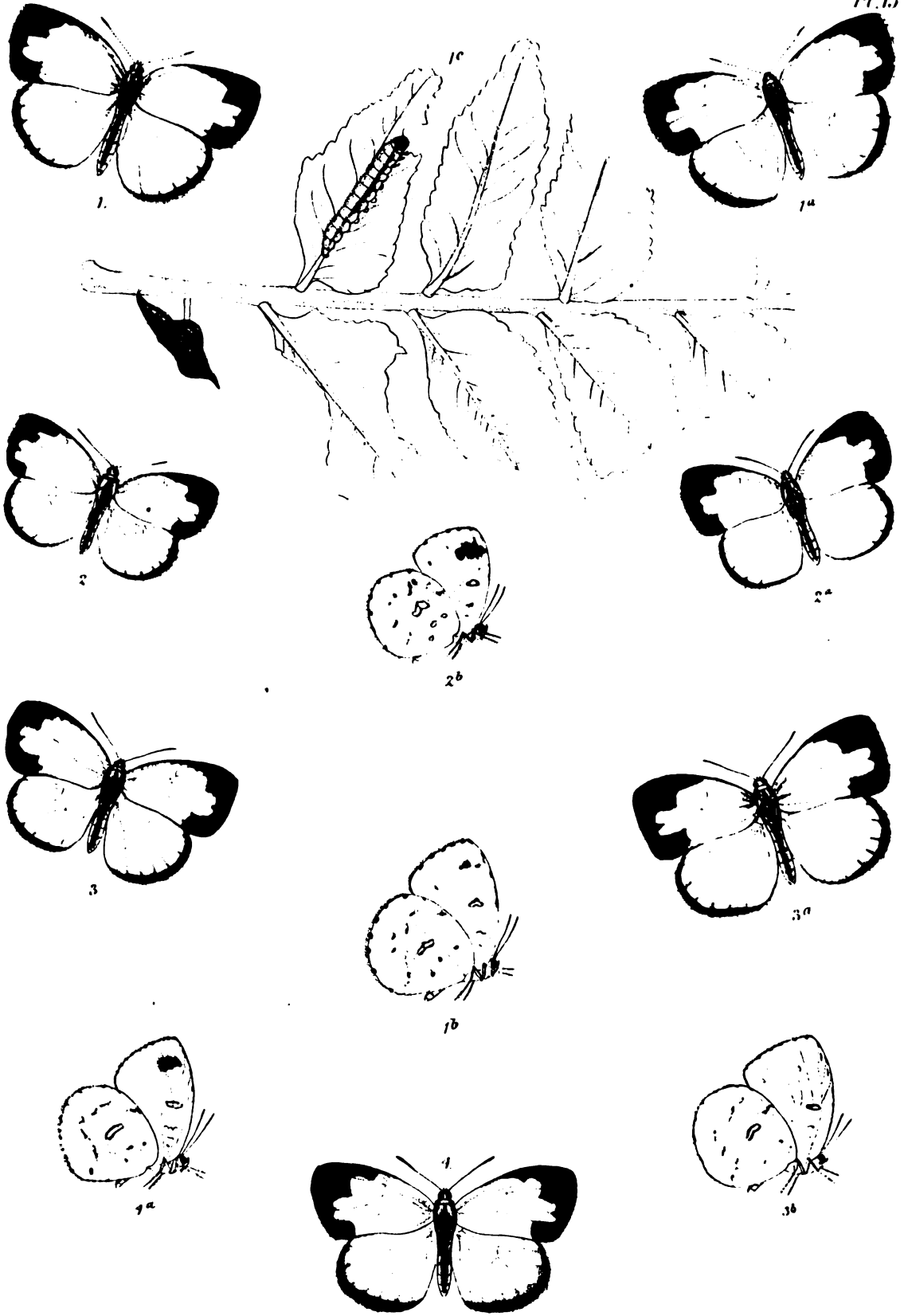
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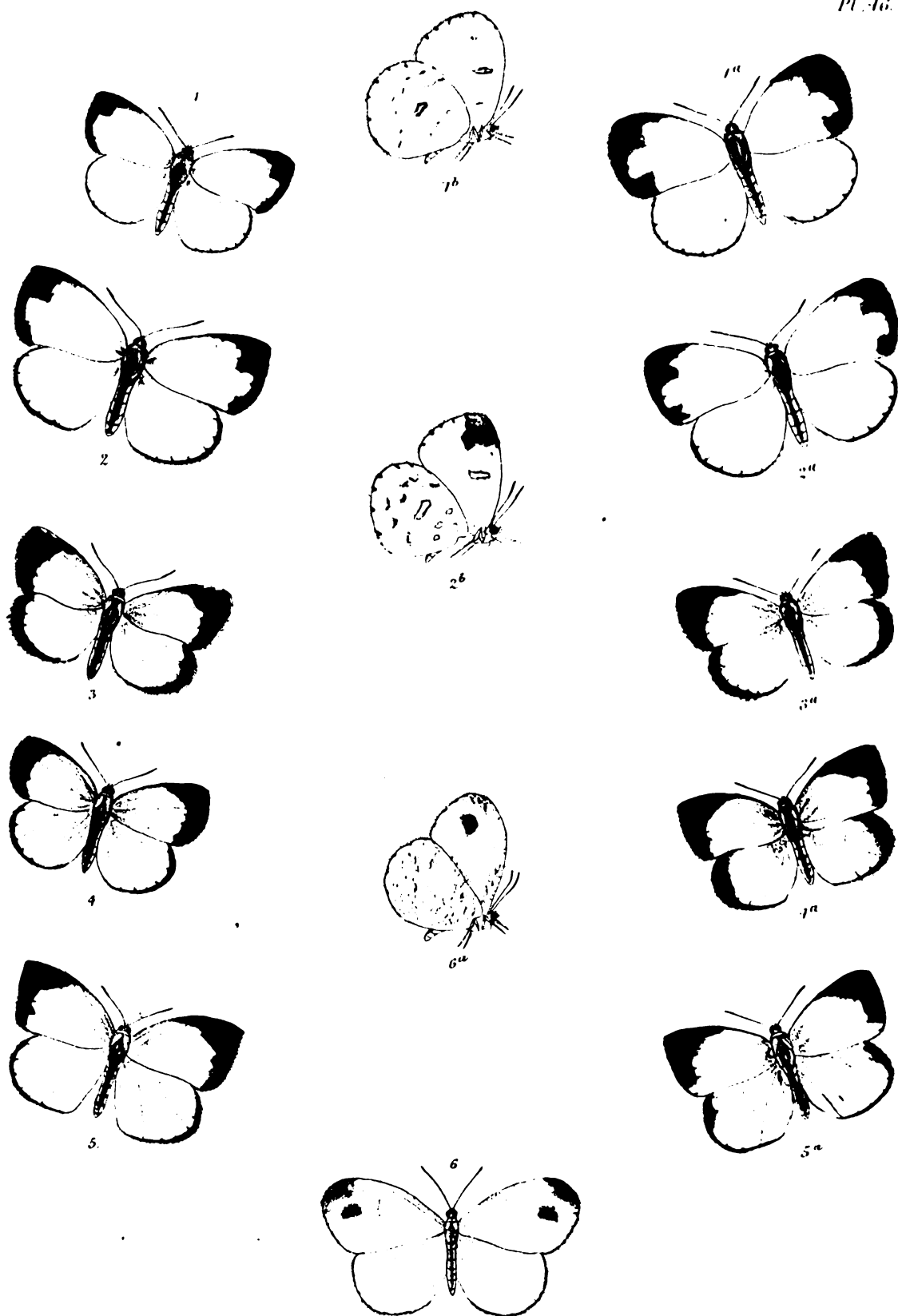
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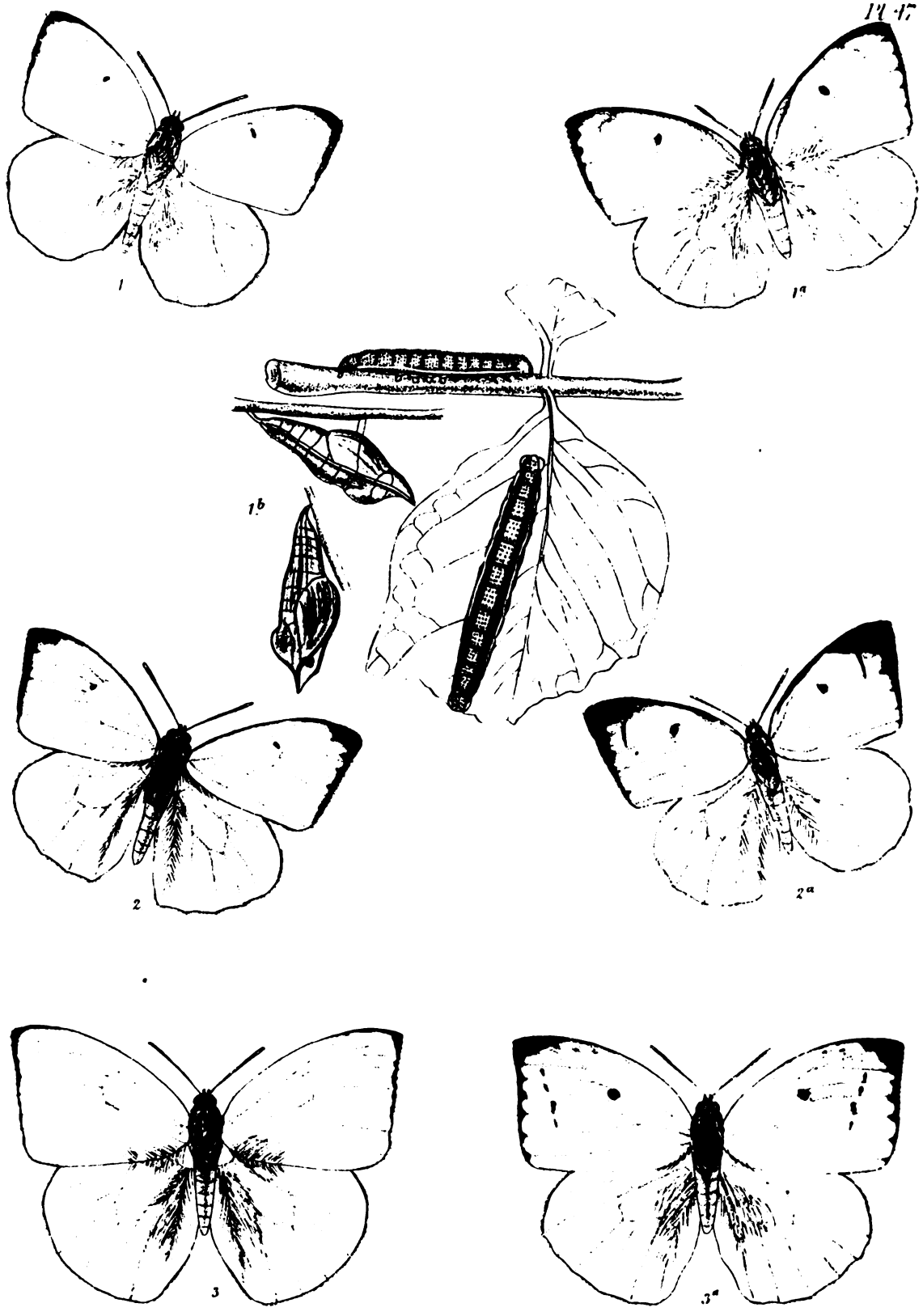
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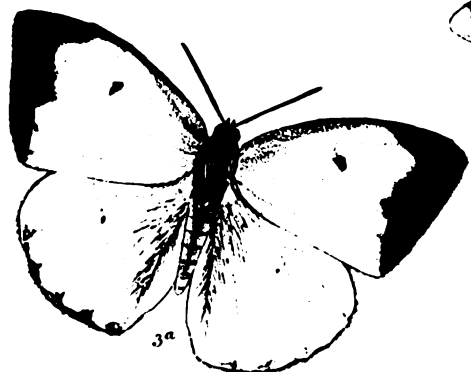
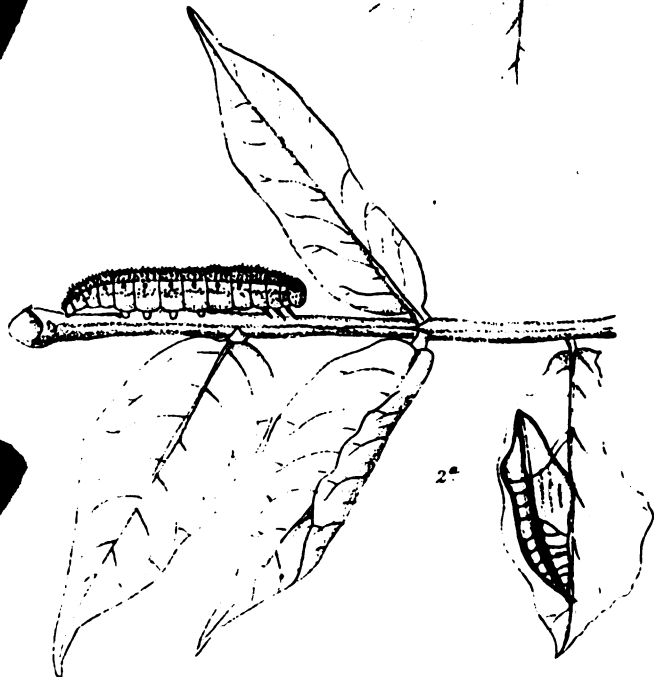
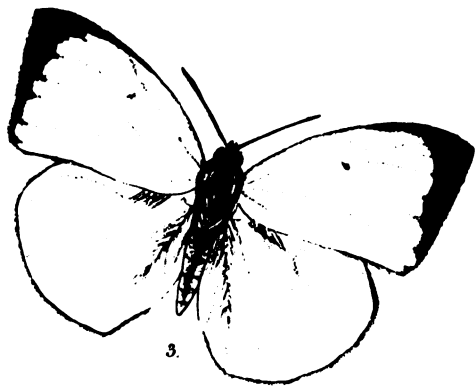
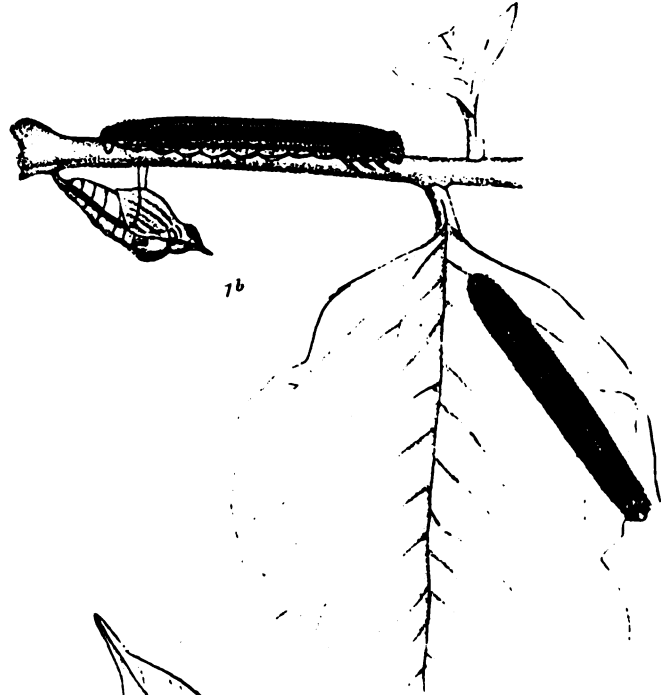
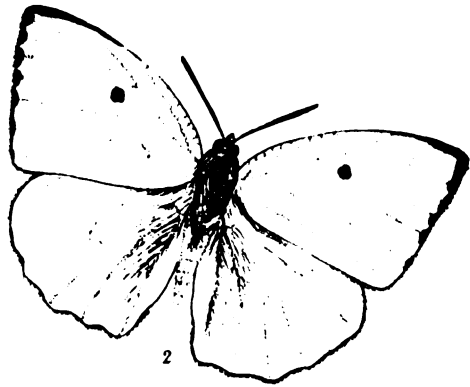
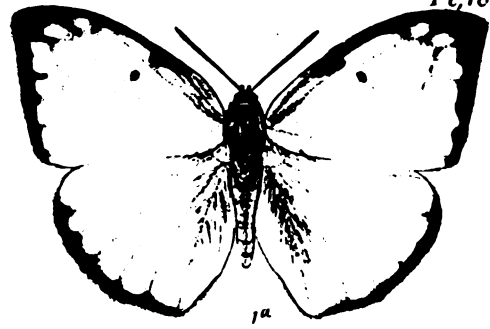
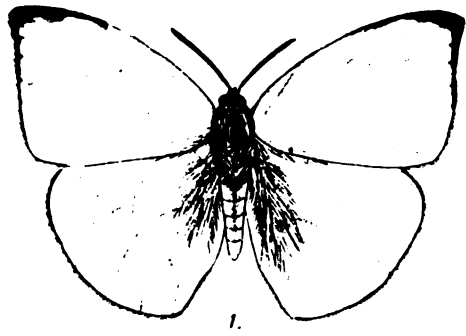
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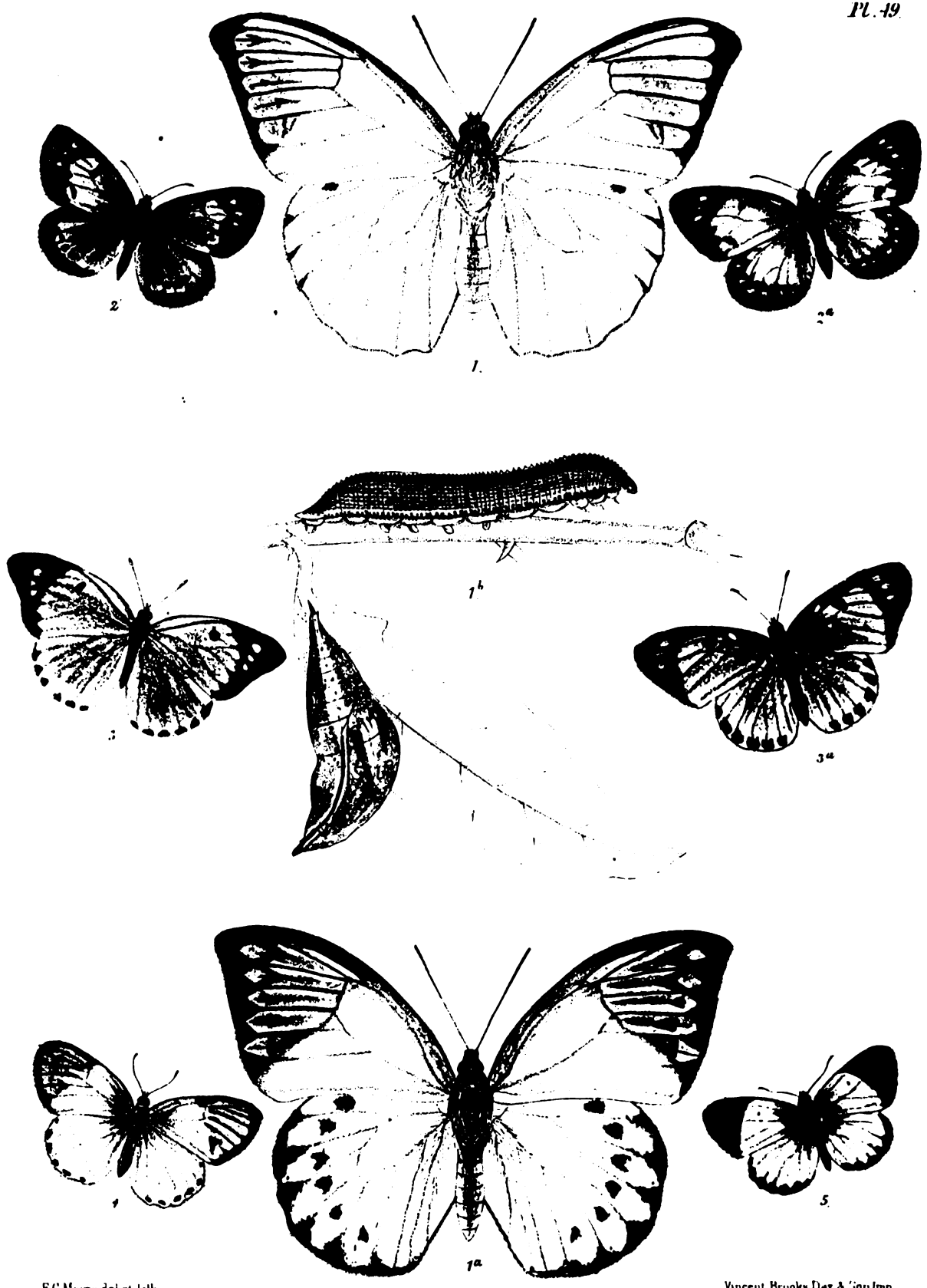
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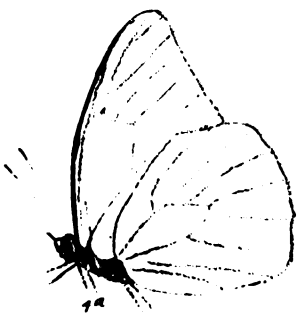
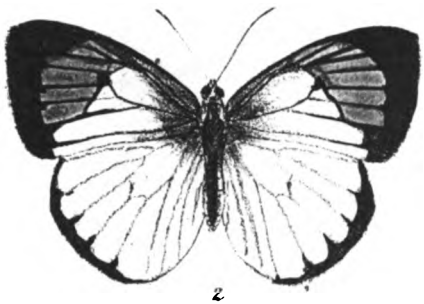
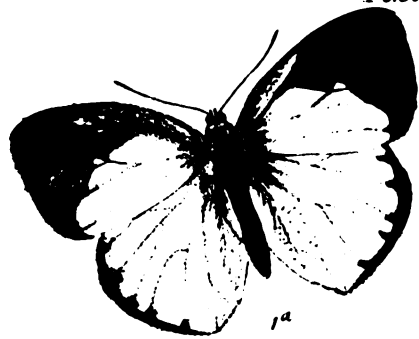
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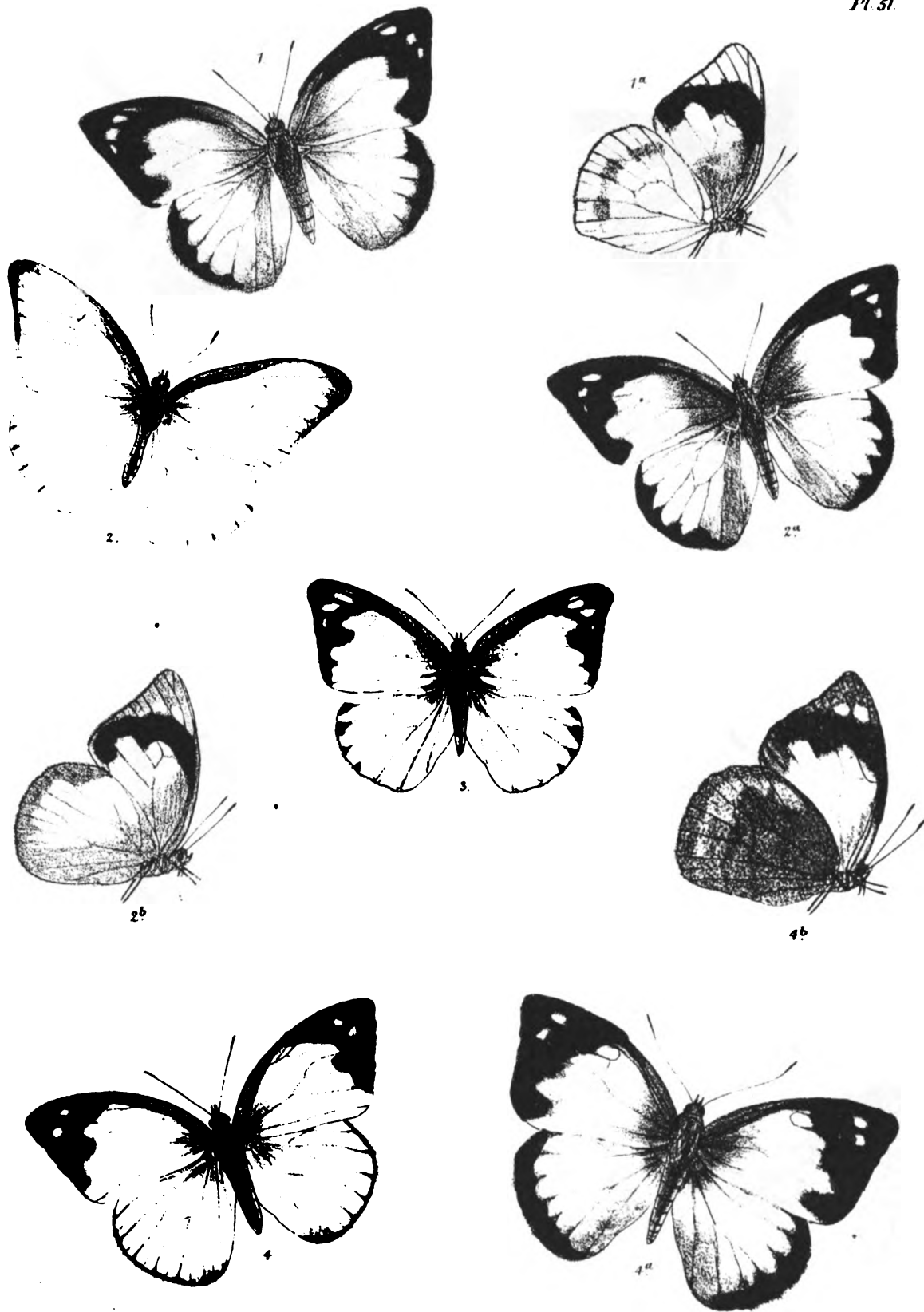
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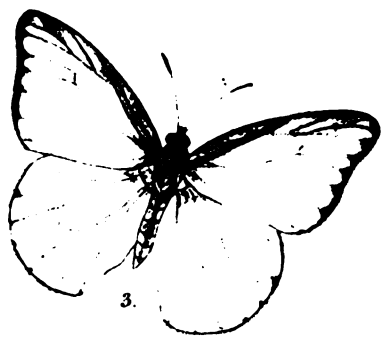
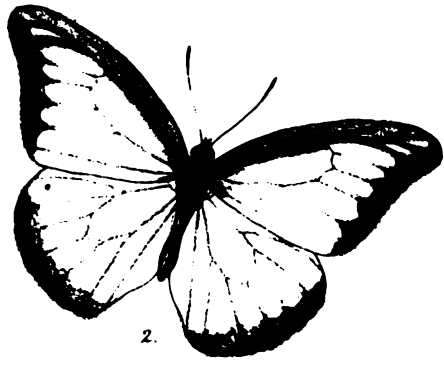
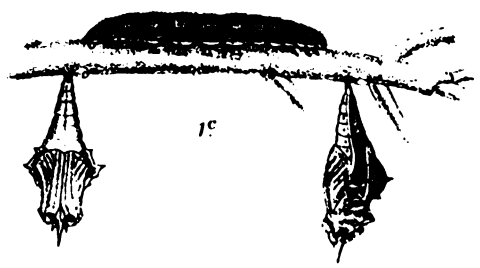
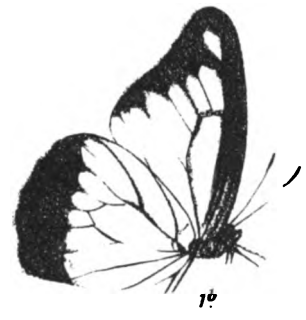
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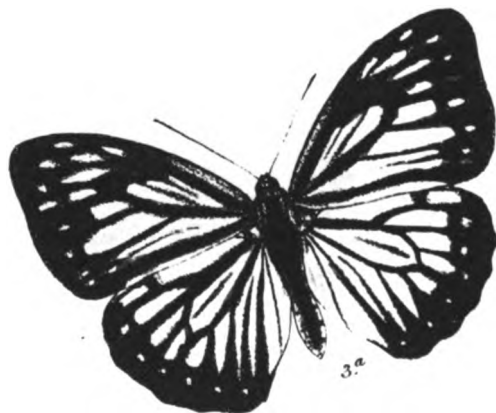
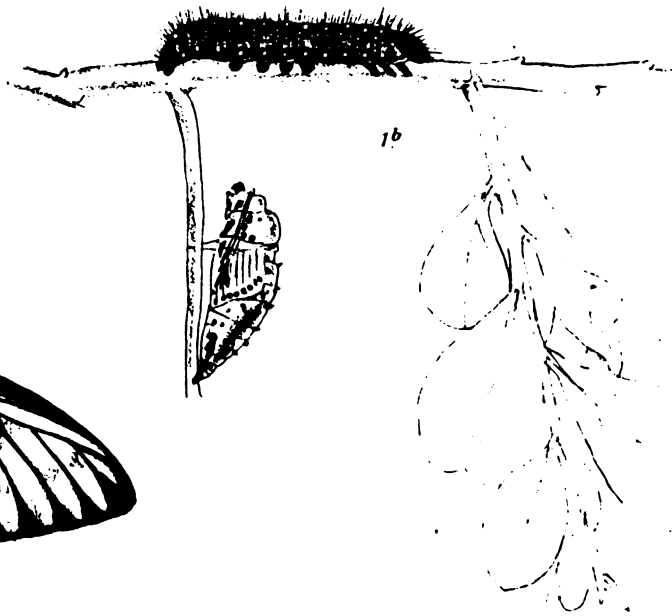
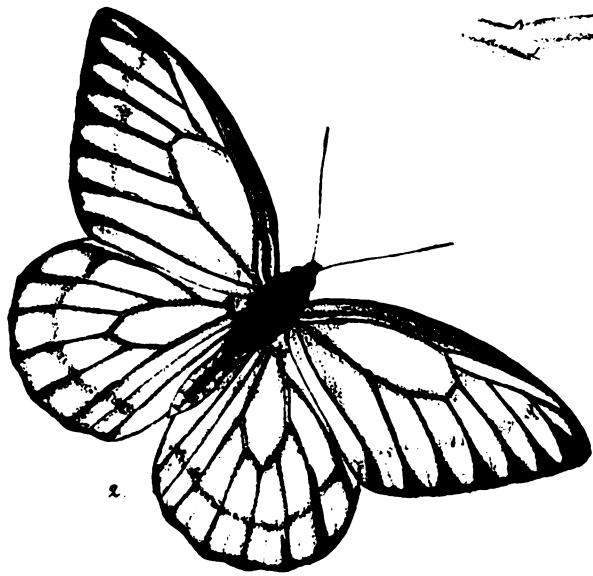
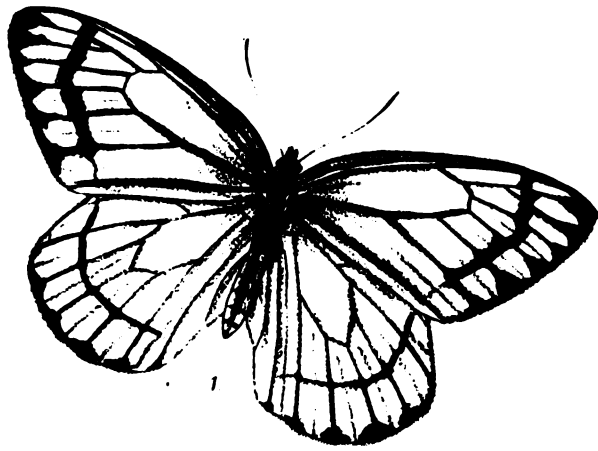
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Fig. 1. *Morpho deiphobus* (Linn.)

Fig. 2. *Morpho deiphobus* (Linn.)

Fig. 3. *Morpho deiphobus* (Linn.)

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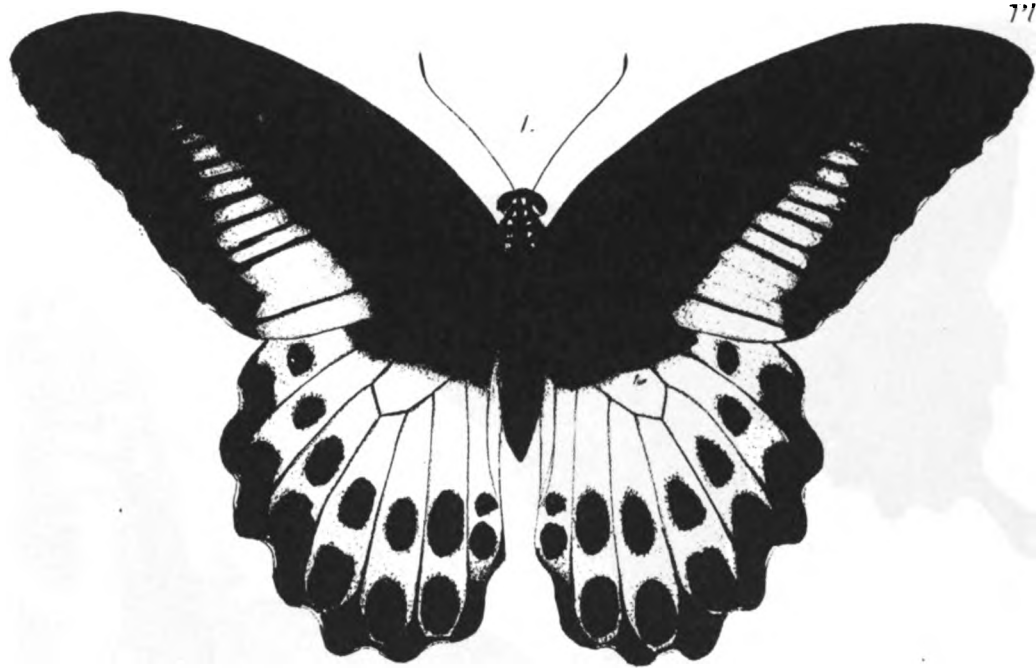


117. *Morpho didius* L.

118. *Morpho didius* L.

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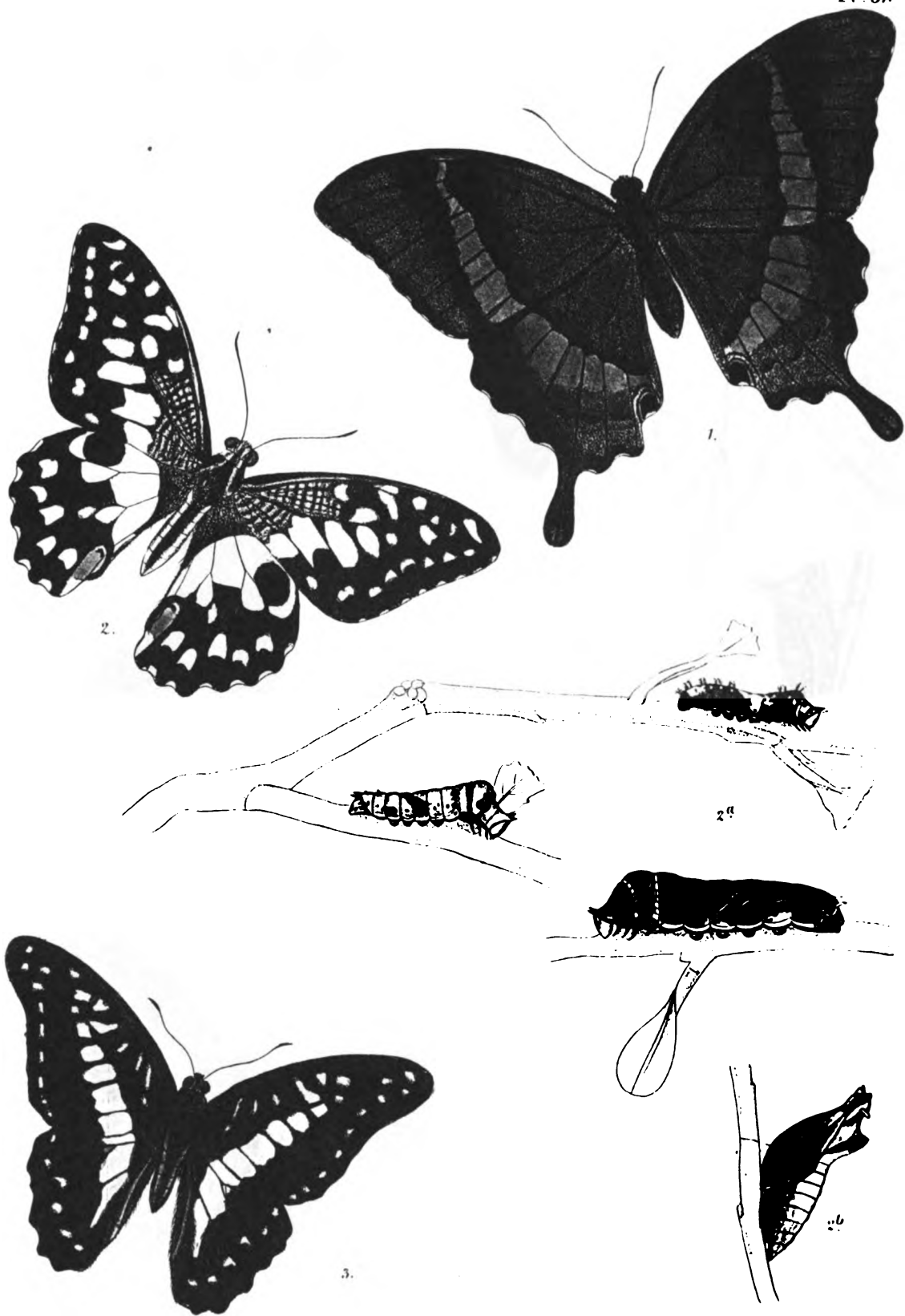
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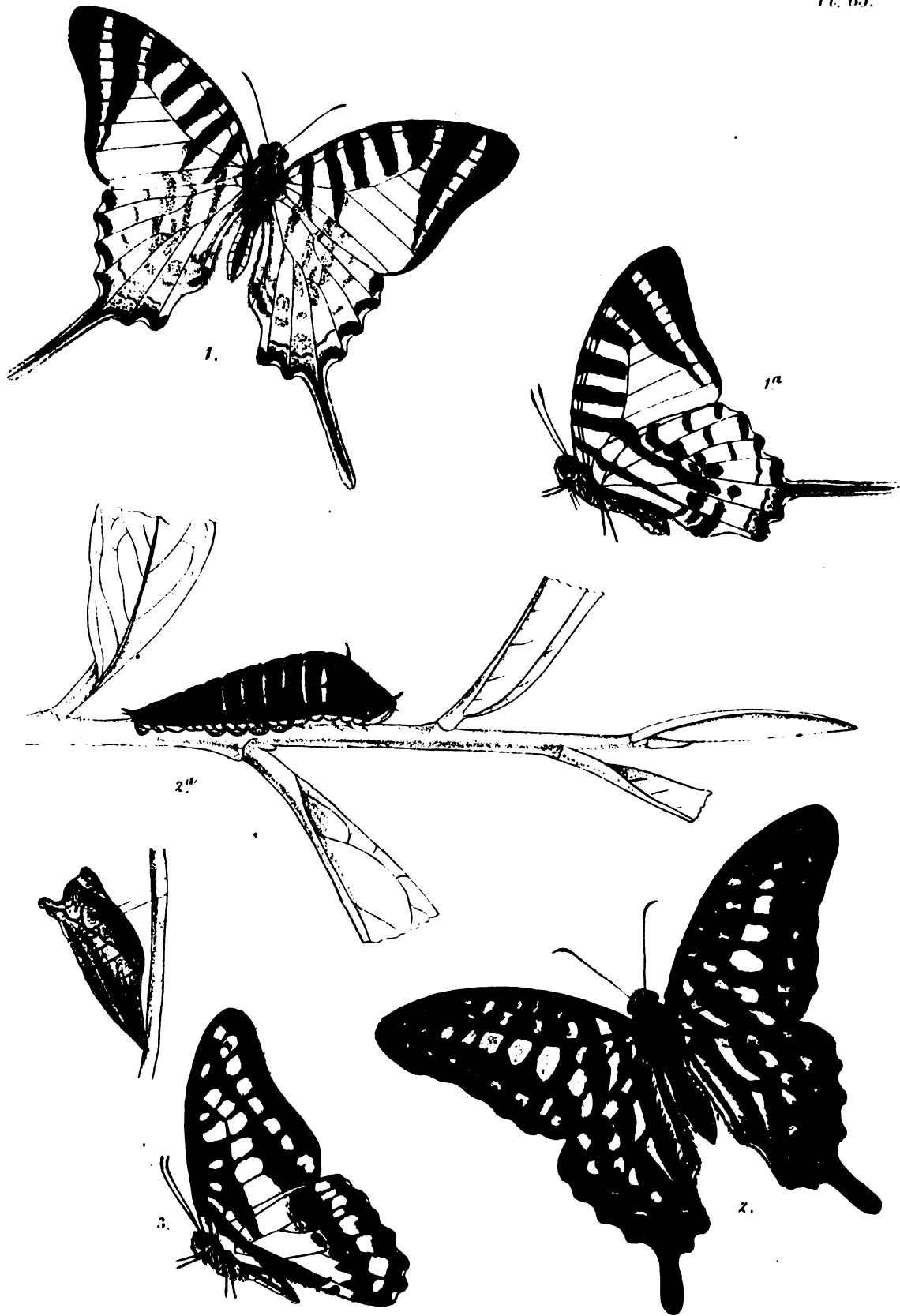
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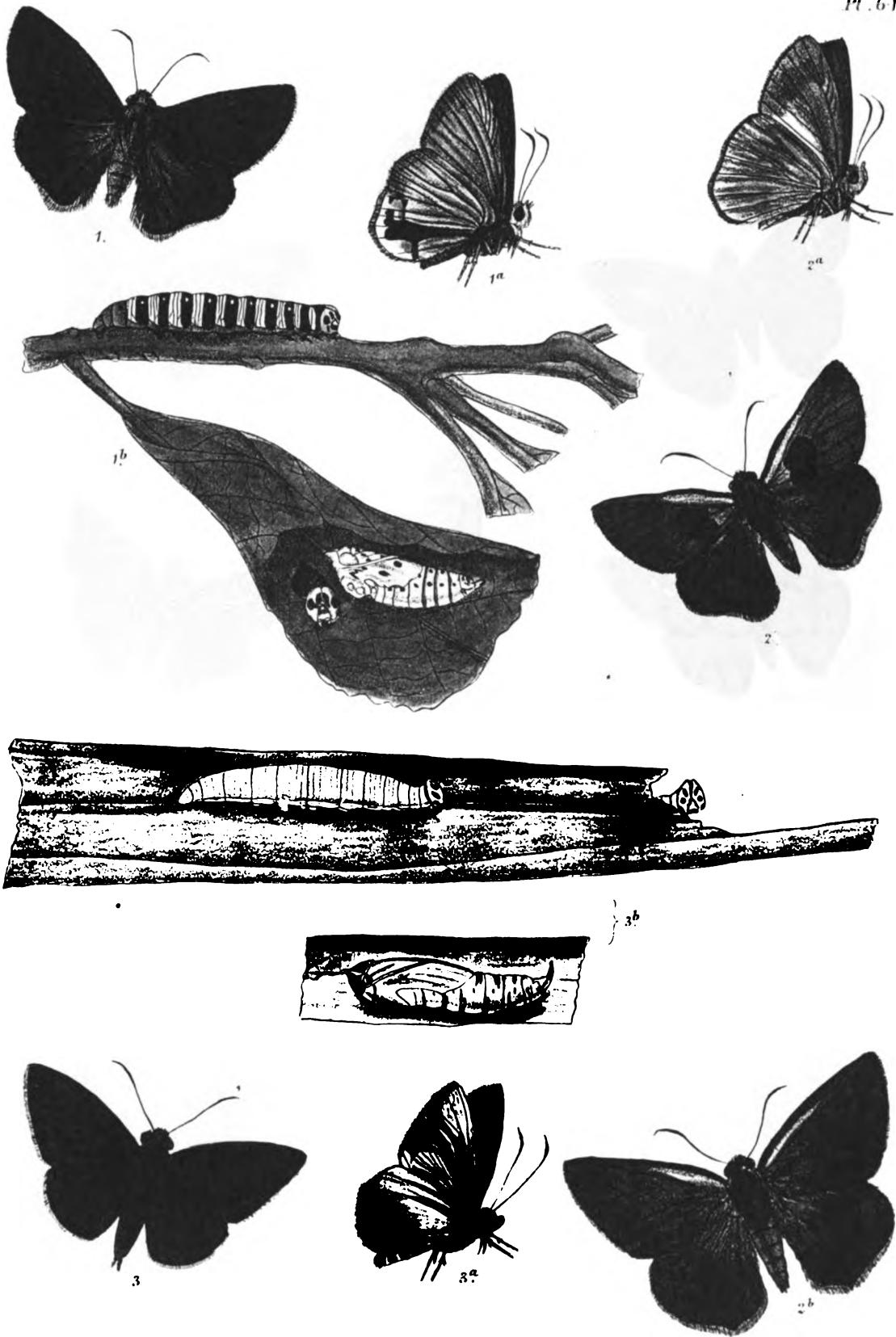
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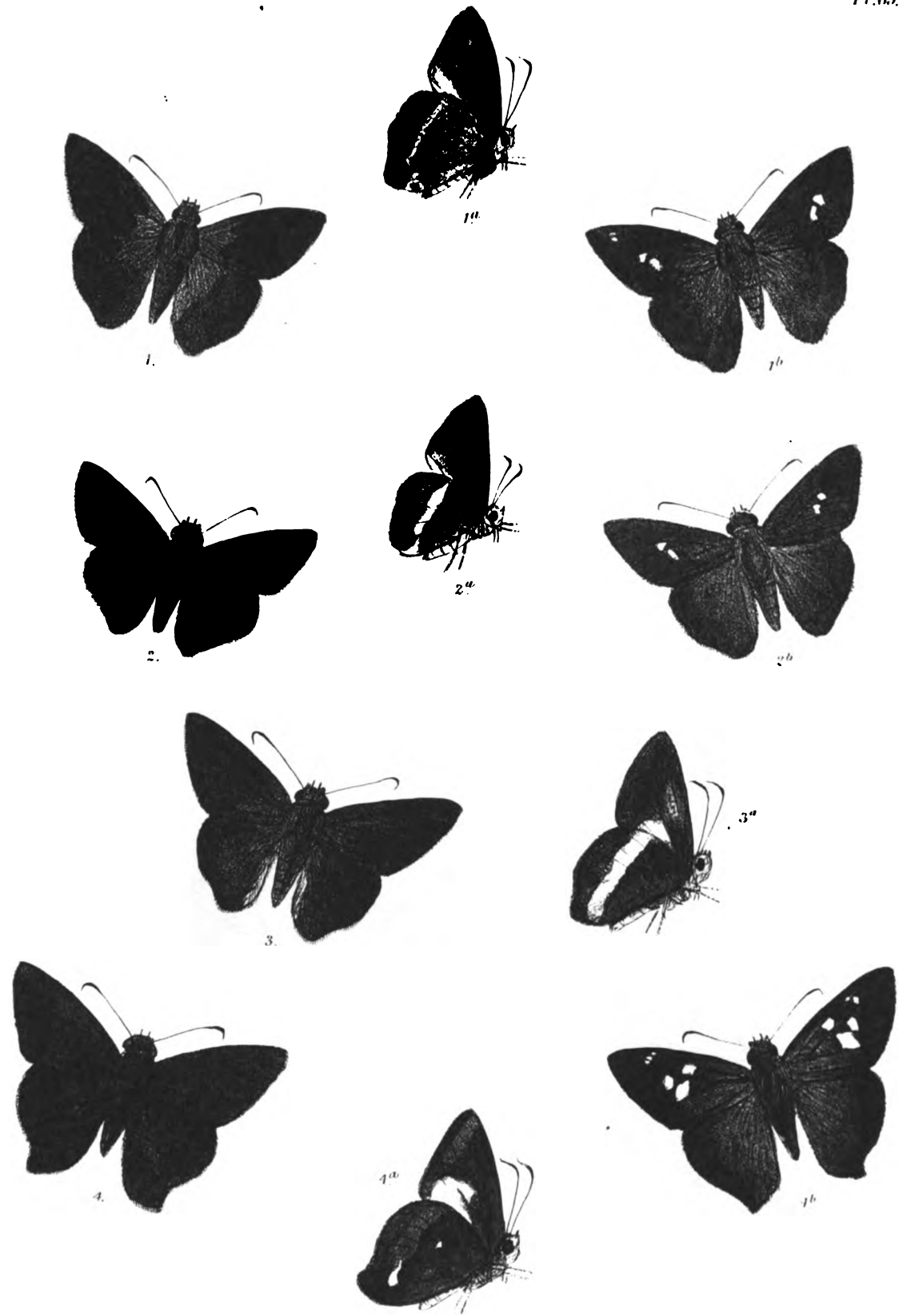
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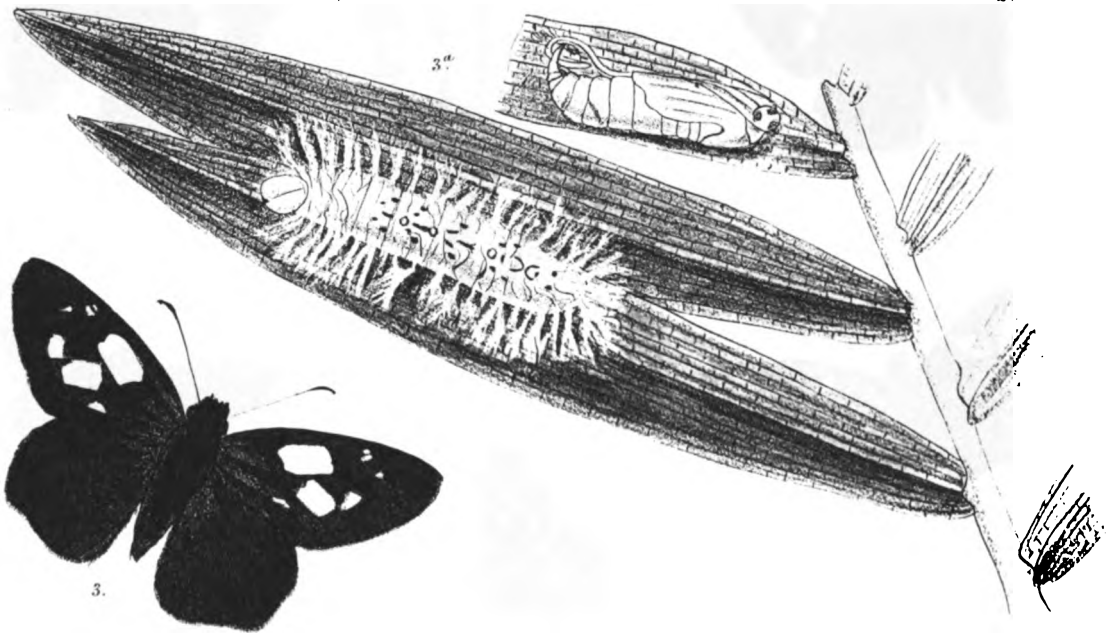
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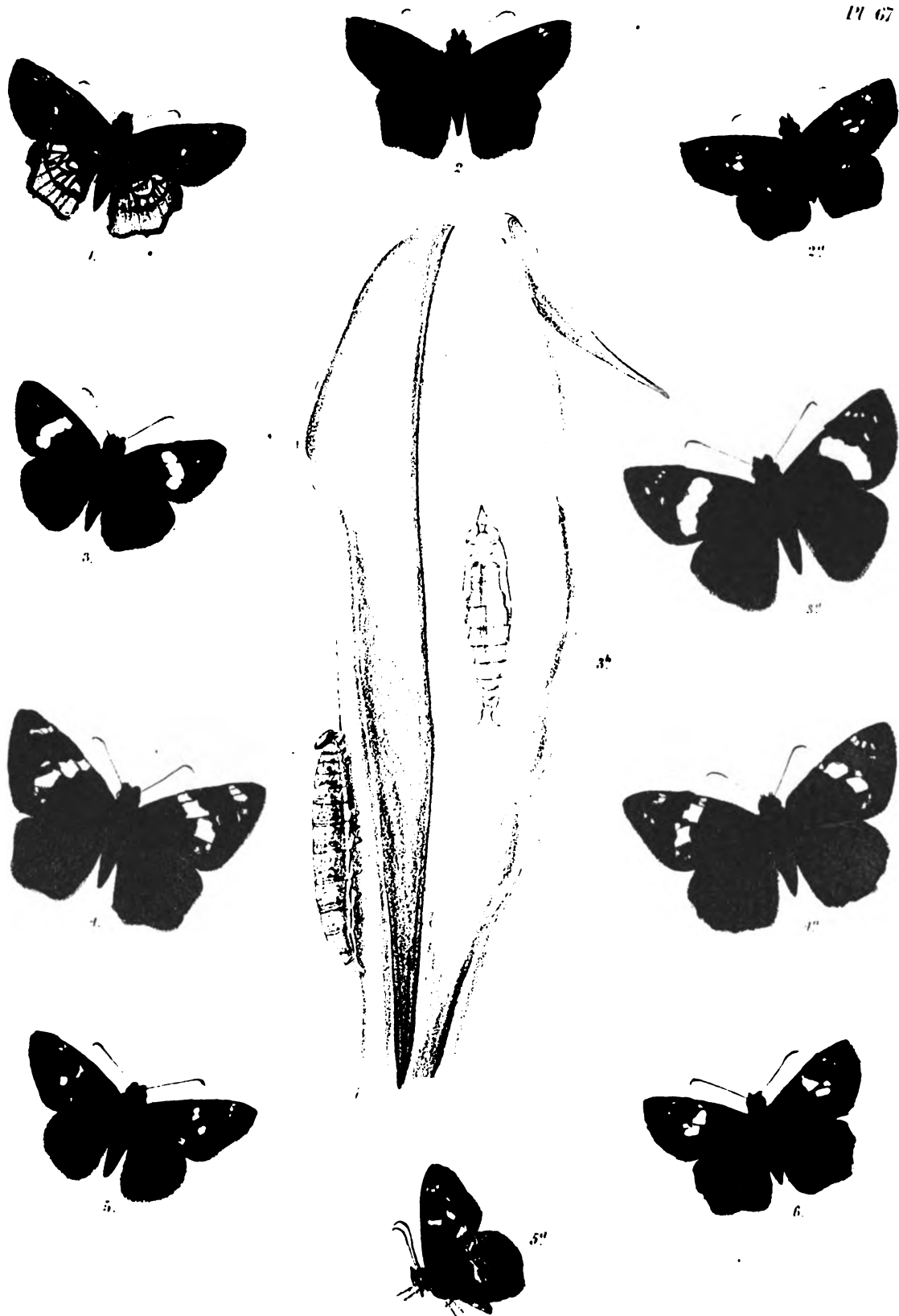


Fig. 1. Male dorsal view of pupa.

Fig. 2. Female dorsal view of pupa.

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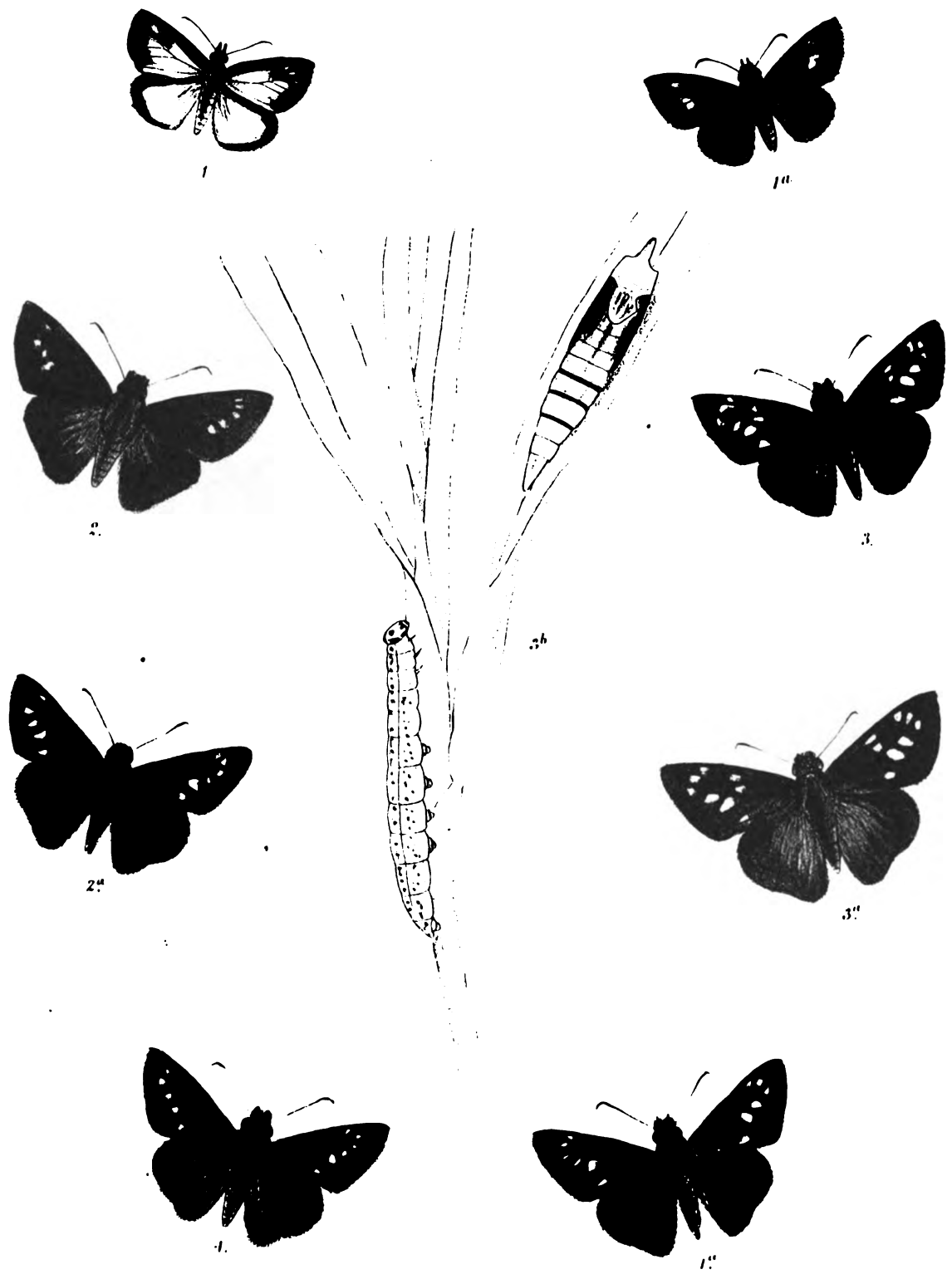
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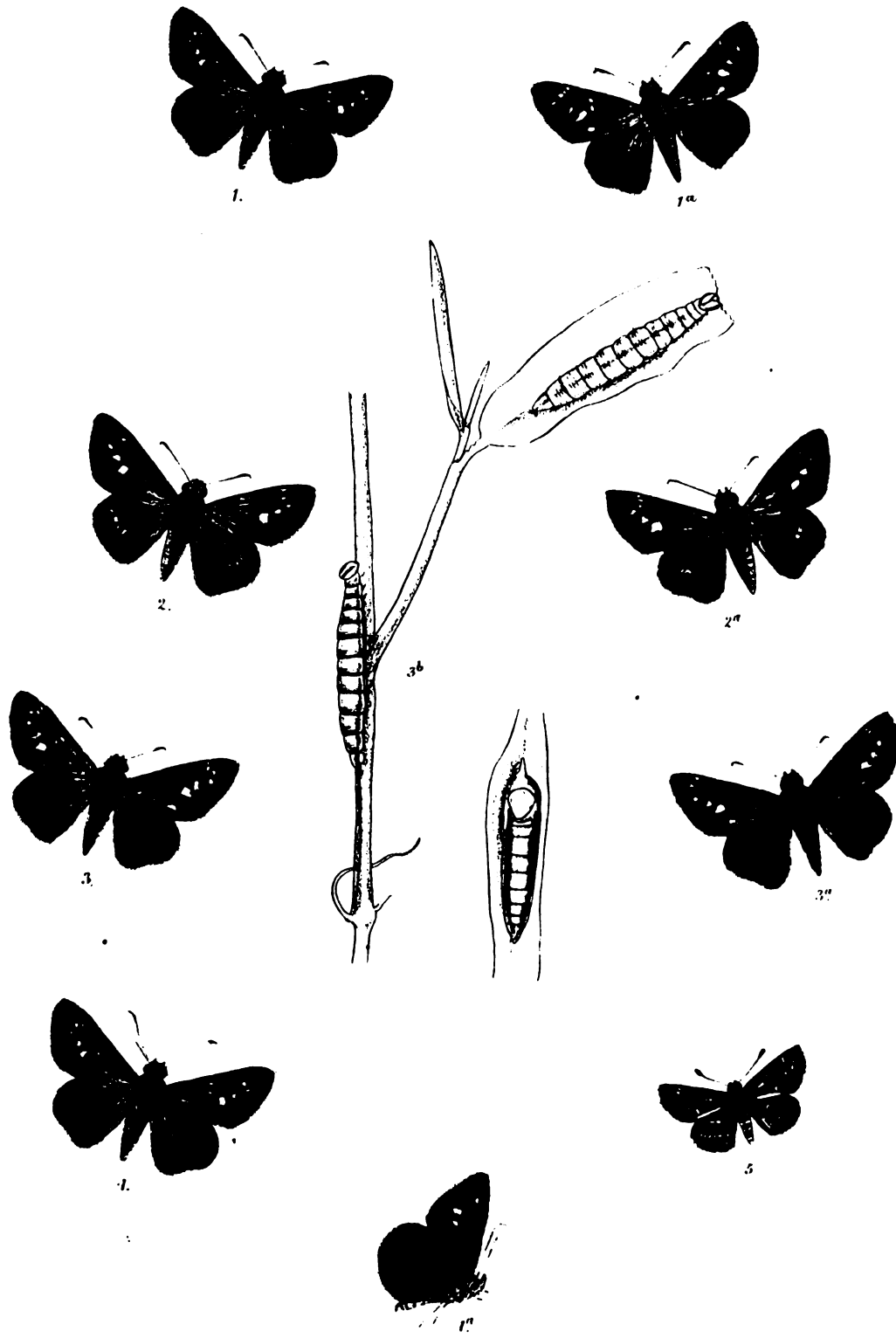
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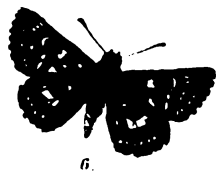
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