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the abdominal margin at its middle and runs up it to the base in a series of indistinct spots, all edged with ochreous; a sub-terminal series of lunules enclosing two blackish spots with scattered metallic greenish scales and a prominent black spot on the anal lobe, all of which vary much in different examples, and are sometimes obscure. Antennæ black, paler on the underside, with white dots; head and body above and below concolorous with the wings.

Female. Upperside brown, with a bronzy gloss in certain lights, a pure white patch divided by the brown veins, on the lower end of the hindwing, margined outwardly with a blackish anteciliary line, containing a large black round spot at the base of the tail on the outer side and another smaller and less distinct spot on the inner side, a black spot on the anal lobe. Underside white, bands and spots paler than in the male, but similarly disposed.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{7}{10}$ inches.

HABITAT.—Sikkim, Assam, Bhutan, Sylhet, Burma, Andamans, Malay Peninsula, Nias.

DISTRIBUTION.—The type, a female, is in the Banksian Cabinet in the B. M., labelled Africa, evidently in error; Butler suggests Maulmein, Burma, which is probably correct; we have received both sexes from the Khasia Hills; Wood-Mason and de Nicéville record it from the South Andaman Islands, where it is said to be common; de Nicéville records it from Sikkim, Sylhet, Buxar, Perak and Rangoon; Elwes from Eastern Pegu and the Naga Hills.

BINDAHARA MOOREI.

Plate 710, figs. 1, ♂, 1a, ♀, 1b, ♂.

Bindahara phocides moorei, Frühstorfer, Iris, 1904, p. 151.

Bindahara phocides, Moore (nec Fabricius), Lep. Ceylon, i. p. 112, pl. 42, figs. 3, ♂, 3a, ♀ (1881).

Bindahara sugriva, Hampson (nec Horsfield), Journ. As. Soc. Bengal, 1888, p. 360. de Nicéville, Butt. of India, iii. p. 475 (1890). Watson, Journ. Bo. Nat. Hist. Soc. 1890, p. 35. Davidson, Bell and Aitken, id. 1896, p. 392.

IMAGO.—Male and female, similar to *B. phocides* above and below in both sexes, except that on the upperside of the hindwing there is a narrow, terminal blue-green band from near the apex to vein 2.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{7}{10}$ inches.

LARVA, much resembles that of *Virachola isocrates*, Fabricius, blackish-brown, the constrictions between the segments well marked, the head comparatively large, fuscous, covered with rugosities or short semicircular tubercles, the segments rapidly increasing in size to the fourth, then gradually tapering to the thirteenth, which latter is about as wide as the second segment; second segment anteriorly flesh-coloured, the third

segment entirely flesh-coloured, the seventh and eighth creamy-white, with a small dorsal and lateral patch of dark purplish-brown, the three anal segments scutate, all the segments widely pitted and covered with short but coarse black bristles, which are more numerous at the sides and whitish.

PUPA, of the usual lycænid shape, brown, marked with a dorsal and lateral black line, the whole surface rough, covered with tiny pits, furnished with a few short coarse bristles, which are most numerous round the sharp anterior ridge which encloses the head; wing cases pale ochreous; head rounded, anal segment blunt.

HABITAT.—Ceylon, South India.

DISTRIBUTION.—Watson records it from Mysore, Hampson from the Nilgiris, 2,000 to 4,000 feet elevation; it is in the B. M. from Trincomali and Karwar; we have received a fair number of both sexes from Ceylon, a pair of which we figure, and except for the narrow blue-green marginal band on the hindwing in the male, they are identical with *B. phocides*, and as some Indian examples of *phocides* show signs of this green band, having a few blue-green scales where the band should be, we cannot but come to the conclusion that it is at best but a local form of that species, differing constantly but very slightly, and certainly nearer to *phocides* than it is to *sugriva*, the Javan form, with its broad green border and dark and well-pronounced underside markings.

BINDAHARA ARECA.

Plate 710, figs. 2, ♂, 2a, ♂.

Myrina areca, Felder, Verh. Zool-bot. Ges. Wien, xii. p. 481, ♂ (1862).

Bindahara areca, de Niceville (part), Butt. of India, iii. p. 474, pl. 29, fig. 242, ♂ (1890).

IMAGO.—Male. Upperside, both wings purpurascence-blackish. *Forewing* with the outermost part paler. *Hindwing* with the anal region, an annexed litura, marked with a blue dot near the sub-anal tooth, and the tail pale ochreous. Underside, both wings fulvous-ochreous, each with a broad discal fascia, palely obsolete, with fuscous catenular strigæ, outwardly circled with white; forewing with the external margin, hindwing with the margin of the apex concolorous, but shining, the latter with more obsolete spots on the disc, an anteciliary line and a posterior undulate streak blackish, beyond this four black spots, the first two obsolete, the remainder much larger, each one inwardly circled with a metallic greenish ring, and a black spot in the anal lobe.

Only one fine male was collected of this species, so distinct owing to the dark colour on its upper side. It is most nearly related to *M. isabella*, Felder, from Amboina, and without doubt it is a representative form, but it has the size of the Javan species, *M. sugriva*, Horsfield. The want of the cyaneous-blue spots on the

outer margin of the hindwing, apart from the totally different underside, allows one easily to distinguish it.

Female. Upperside, both wings brownish-fuscous. *Hindwing* with the anal border and tail whitish, a large spot at the base of which and the anal lobe blackish. Underside, both wings whitish. *Forewing* with a single ochreous-fulvous fascia beyond the disc catenulately sinuous. *Hindwing* with a slender interrupted flexuous striga beyond the disc, with two spots at the base of the tail powdered with blue, and the anal appendage deepest black. This stands very close to *M. jolcus*, Felder, from Amboina, but a careful comparison sufficiently establishes the difference of the two forms. The fact that the only known specimens of *M. isabella* and *areca* are all males, while those of *M. jolcus* and *kamorta* are females, confirms me in the supposition that here merely the sexes of two species may lie before us. The construction of the palpi in *M. sugriva*, *isabella* and *areca* on the one hand, and in *jolcus* and *kamorta* on the other hand, differs much, such as we see also in both sexes of other allied species. The last joint of the palpi of the female is more than twice as long as in the male. That *M. areca* and *kamorta*, both of them, differ from *M. isabella* and *jolcus* in the want of the first fascia on the underside of the forewing, and the spots on the basal half of the same side of the hindwing, may speak in favour of the foregoing supposition. (Felder.)

Expanse of wings, ♂ $1\frac{7}{10}$ inches.

HABITAT.—Nikobar Islands.

DISTRIBUTION.—A common species in the Nikobars, occurring in Kamorta, Nankowri, Kar Nikobar, Little Nikobar, and Great Nikobar; this species is quite distinct from *B. kamorta*, Felder, of which there are both sexes in the B. M.; we figure Felder's type male, which is in fine condition; we have not been able to obtain a female.

BINDAHARA INÈS, nov.

Plate 710, figs. 3, ♂, 3a, ♀, 3b, ♂.

IMAGO.—Male. Upperside black. *Forewing* unmarked. *Hindwing* with some greyish-ochreous at the anal angle; tail greyish-ochreous; anal lobe white, with an indistinct grey spot in it, much as in *areca*, but the ochreous space is more limited and darker in colour, and the short black anteciliary line in that species is wanting. Underside chocolate-brown, markings darker brown, with very fine pale edgings. *Forewing* with a short narrow basal streak, a broad outwardly curved band from near the costa to the sub-median vein, a broad discal band with irregular margins, from the costa to the same vein, narrowing hindwards from its middle almost to a point; a sub-marginal series of spots and indications of a pale series close to the margin. *Hindwing* with three sub-costal spots in a line, two small spots near each other, sub-

basal near the abdominal margin, two spots one above the other at the end of the cell, a discal outwardly curved double series of spots ending in curves and short lunular marks before reaching the abdominal margin, a black anal spot, outwardly fringed with white, a small black spot on each of the next two interspaces with metallic blue scales on them both, and a brown wavy line above them, anteciliary line also brown.

Female. Upperside brown. *Forewing* without markings. *Hindwing* with a largish white patch at the anal angle, a black spot on the anal lobe, another in the first interspace, with a little brownish suffusion between them, an anteciliary black line, with an inner white thread outside the spots. Underside pure white, markings dark chocolate-brown, disposed as in the male, but the spots on the hindwing are smaller, and the anal spots are on dark greyish ground.

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

HABITAT.—Andamans; types in the B. M.

Marked *areca*, Felder, but very different from that Nikobar species, especially on the underside, the colour is quite different, and *areca* on the underside has hardly any visible markings, the only prominent mark being a very thin white straight line from the costa of the forewing, near the apex, which runs down the wing for a short distance; the bands are of a very different shape and colour, and are so obscure as to be only visible in certain lights.

BINDAHARA KAMORTA.

Plate 710, figs. 4, ♂, 4a, ♀, 4b, ♂.

Myrina kamorta, Felder, Verh. Zool.-bot. Ges. Wien, xii. p. 485 (1862).

Myrina camorta, Hewitson, Ill. Diurn. Lep. p. 36 (1863).

Bindahara areca, de Nicéville (part), Butt. of India, iii. p. 474.

IMAGO.—Male. Upperside black. *Forewing* somewhat paler towards the apex, but with no markings. *Hindwing* with the abdominal area pale, a small ochreous-white patch at the anal angle, a small black spot in the white anal lobe, another in the first interspace; tail ochreous-white. Cilia of both wings black, except at the anal patch, where it is ochreous-white. Underside pale chocolate-brown, slightly tinted with ochreous, markings darker brown, with ochreous-white edges. *Forewing* with a short broad medial band, crossing the end of the cell, from near the costa to the median vein, a discal band with irregular margins from the costa to the sub-median vein, narrowing hindwards almost to a point, and indications of a sub-marginal band. *Hindwing* with a small sub-costal spot near the base and a twin spot below it, well separated from it; another twin spot just outside the latter, a discal outwardly well-curved series of spots inwardly edged with ochreous-white, outwardly with dark brown and ochreous-white; anal lobe black, and a black spot in each of the next two

interspaces, both capped with metallic blue scales; indications of spots up the margin all bounded by a black sub-marginal line, which for a short distance runs up the abdominal margin.

Female. Upperside brown. *Forewing* without markings. *Hindwing* with a white sub-anal band; anal lobe with a small black spot and a very large one in the first interspace and some bluish-grey suffusion between them; tail white, with a black middle line. Underside white. *Forewing* with an ochreous discal band from the costa to the sub-median vein, narrowing hindwards, an ochreous even band on the outer margin, with a line of ochreous lunules on its inner side. *Hindwing* with an outwardly, well-curved, discal series of thin, ochreous, lunular marks and a sub-marginal series with a thin brown line on its inner side, which is continued up the abdominal margin for a short distance; a large black spot on the anal lobe, and a large similar spot in each of the next two interspaces, both capped with metallic blue scales.

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

HABITAT.—Nikobar Islands.

Described from a pair in the B. M. from Nankowry, and from Felder's type female from Kamorta, which we figure; the male is described and figured for the first time.

INDO-MALAYAN ALLIED SPECIES.

Bindahara sugriva, *Amblypodia sugriva*, Horsfield, Cat. Lep. E.I.C. p. 105 (1829). *Thecla sugriva*, Horsfield, id. pl. 1, figs. 10, 10a, ♂ (1829). *Myrina sugriva*, Horsfield and Moore, Cat. Lep. Mus. E.I.C. i. p. 51, pl. 1a, fig. 12, ♂ (1857). Habitat, Java.

Bindahara fumata, *Bindahara phocides fumata*, Rober, Iris, 1887, p. 196. Habitat, Bangkai.

Bindahara phocas, *Bindahara phocides phocas*, Staudinger, Iris, 1889, p. 114. H. H. Druce, Proc. Zool. Soc. 1895, p. 625. Habitat, Philippines, Borneo, Celebes.

Genus LEHERA.

Lehera, Moore, Proc. Zool. Soc. 1883, p. 528. de Nicéville, Butt. of India, iii. p. 443.

Artipe, Boisduval, Lep. Guat. p. 14 (1870) (nom. preoc.).

Eyes hairy. *Forewing*, vein 12 ends on the costa opposite the end of the cell, 11 emitted from about the middle of the cell, quite free from 12, 10 at three-fourths, 9 from the middle of 7, 6 from the upper end of discocellulars, 5 from the middle, discocellulars upright, slightly concave, the lower the longer, vein 3 from a little before the lower end of the cell, 2 from one-third before the end; wing large, broad, triangular, in the male the outer margin is very straight and oblique, in the female broader than it is in the male, the outer margin regularly convex. *Hindwing* with vein 8 much arched and extends to the apex of the wing, 7 emitted from the cell at two-thirds from the base, discocellulars concave, of equal length, and together form a very obtuse angle,

vein 3 emitted just before the lower end of the cell, 2 from the middle, internal nervure strongly recurved, wing broader than in the male; the tail in the male filiform, in the female much longer and heavily ciliated on both sides; anal lobe large; body robust. Antennæ with a long, thickened club; the male without secondary sexual characters.

Type, *Papilio eryx*, Linnæus.

LEHERA ERYX.

Plate 711, figs. 1, ♂, 1a, ♀, 1b, ♂.

Papilio eryx, Linnæus, Mant. Plant. p. 537 (1771). Fabricius, Syst. Ent. p. 522 (1775).

Deudorix eryx, Butler, Cat. Fabr. Lep. B. M. p. 180 (1869). Staudinger, Ex. Schmett. p. 279, pl. 96, ♀ (1888).

Lehera eryx, Moore, Proc. Zool. Soc. 1883, p. 529, de Nicéville, Butt. of India, iii. p. 444, pl. 29, fig. 236, ♂ (1890). Manders, Trans. Ent. Soc. 1890, p. 530. Swinhoe, id. 1893, p. 305.

Dudgeon, Journ. Bo. Nat. Hist. Soc. vol. x. 1896, p. 335. Watson, id. 1897, p. 667.

Papilio amyntor, Herbst. Pap. xi. p. 27, pl. 300, figs. 5, 6, ♀ (1804).

Deudorix amyntor, Hewitson, Ill. Diurn. Lep. p. 17, pl. 8, figs. 19, 20, ♂ (1863).

IMAGO.—Male. Upperside glistening dark purplish-blue gradually merging into the broad black borders. *Forewing* with the costa above the cell to its end black, the apical third black, its inner edge straight across (but not sharply defined) to below vein 2, and from thence, for the short space, evenly and narrowly to the hinder angle. *Hindwing* with the costal space broadly black, the band narrowing gradually and diffusedly hindwards to near the anal angle, then broadly up the abdominal space, thickly clothed with long fur-like modified scales, increasing in width upwards, leaving but a narrow discal space purplish-blue, abdominal fold very pale; anal lobe blue-green, this colour extending narrowly up the abdominal margin for a short distance; tail black, tipped with white. Cilia brown. Underside bright green. *Forewing* with the hinder marginal space pale greenish-grey, a line of disconnected, small and indistinct greenish-white lunular marks, its upper portion curving round inwards to the costa. *Hindwing* with a similar but more prominent discal series which has a short outward curve below the second lunule; a black spot on the anal lobe, with a small white spot on each side of it, and some anteciliary small white marks, which in some specimens run into each other, forming a white thread above the anal angle. Antennæ black, without white rings; the clubs with dull orange tips; palpi ochreous, last joints black; frons and head green, eyes ringed with white; body black above, ochreous beneath.

Female. Upperside blackish-brown. *Forewing* without markings. *Hindwing* with the anal third, from the abdominal margin decreasingly to the discoidal interspace pure white, its inner edge uneven; in some examples the brown colour runs in and forms long spots on the outer part; anal lobe with a large green spot in it; the white

patch with three large sub-terminal lunular brown spots; tail long, pure white. Cilia of forewing blackish-brown with white tips, of hindwing pure white. Underside as in the male, but the white discal bands consist of larger and more prominent lunular marks. *Hindwing* with a rather broad macular white band between the discal band and the outer margin, decreasing in width upwards and consisting of minute white spots on the upper half of the wing; anal lobe black, ringed with white; a marginal series of green spots ringed with white, the two next to the lobe with black spots in them; tail white, the lower half of the cilia white, an anteciliary green line.

Expanse of wings, ♂ $1\frac{1}{2}$ to $1\frac{7}{10}$, ♀ $1\frac{9}{10}$ to $2\frac{4}{10}$ inches.

LARVA, curiously similar to that of *Virachola perse*, with which I found it; its habits are also identical; the differences were as follows: whereas in *V. perse* the medial segments were a deep red-brown and the three anterior segments ochreous, the medial ones were more purplish in tint inclining to indigo when undergoing the pupal change, and the anterior segments more orange than ochreous. The last pair of breathing apertures in *V. perse* were pale buff (the others being black), but those of *L. eryx* were the same colour as the other lateral ones, viz. black with shiny black rims. Both larvæ had a quadrate buff patch occupying the central dorsal portion of the two medial segments, but in *L. eryx* the patch was rather smaller and paler than that of *V. perse*.

On 20th June, 1895, at Fagoo, 2,500 feet, British Bhutan, I found eleven pupæ of *Lehera eryx*, Linnæus, in the interior of the fruit of the wild pomegranate. They were enclosed in precisely the same manner as those of *Virachola perse*, Hewitson, which feeds on the fruit of the same plant. Out of these pupæ only one had the opening in the side of the fruit closed with a web, the rest being quite open, and, as the fruit was in all cases in a rotten condition, it was also occupied by small dipterous (fly) larvæ, and *Coleoptera* (beetles), in two or three cases with a very small ant which did not *attack* the pupæ, but I cannot see what use they could be to this insect as they are to other lycænidæ. The pupa is robust, reddish-brown mottled with fuscous, especially on the back and sides. In some specimens the first two abdominal segments were dorsally yellowish. The butterflies commenced to emerge within a week after I found the pupæ. (Dudgeon.)

HABITAT.—Sikkim, Assam, Burma, China.

DISTRIBUTION.—Watson records it from the Chin Hills, Manders from the Shan States, de Nicéville from Sikkim and Sibsaghar in Upper Assam; we have both sexes from Rangoon and the Khasia Hills.

LEHERA SKINNERI.

Plate 711, figs. 2, ♂, 2a, ♀, 2b, ♀.

Lehera skinneri, Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1886, p. 369, pl. 15, fig. 3, ♀.
de Nicéville, Butt. of India, iii. p. 445 (1890).

IMAGO.—Male. Upperside much as in *eryx*, but the insect is not so black, and the inside purple-blue colour is duller, and much more limited in extent on the hindwing; the anal lobe is blackish-brown with a pale dull blue spot in it, not blue as in *eryx*; tail black, tipped with white. Cilia greyish-brown. Underside dull ochreous, the discal bands as in *eryx*, but only faintly indicated on both wings, the hinder marginal space on the forewing is concolorous with the rest of the wing; the anal lobe is black with an ochreous outer margin, and there is a small black spot above the tail. Antennæ black, without white rings, tip of club dull orange, frons and palpi ochreous, the latter with the last joints black, eyes ringed with white, head ochreous, body blackish-brown above, ochreous beneath.

Female. Upperside like the upperside of *eryx*, but duller in colour, the anal lobe of the hindwing ochreous with a dull brown spot in it. Underside ochreous as in the male, markings as in the female of *eryx*, but the white bands are not nearly so prominent.

Expanse of wings, ♂ $1\frac{1}{2}$, ♀ $1\frac{8}{10}$ inches.

HABITAT.—Cachar, Assam.

DISTRIBUTION.—The type, a female from Cachar, is in the Indian Museum, Calcutta; we have received both sexes from the Khasia Hills.

INDO-MALAYAN ALLIED SPECIES.

Lehera anna, H. H. Druce, Ent. Mo. Mag. ser. 2, vii. p. 78 (1894); id. Proc. Zool. Soc. 1896, p. 680, pl. 31, fig. 8, ♀. Frühstorfer, Iris, 1904, p. 148, ♂. Habitat, Borneo.

Genus DEUDORIX.

Deudorix, Hewitson (part), Ill. Diurn. Lep. Lyc. p. 16 (1863). Moore, Lep. Ceylon, i. p. 102 (1881). Distant (part), Rhop. Malayana, p. 277 (1885). de Nicéville, Butt. of India, iii. p. 448 (1890).

Eyes hairy. *Forewing*, vein 12 ends on the costa opposite the end of the cell, 11 emitted from the cell at about two-thirds from the base, 10 at three-fourths, 9 from the middle of 7, 6 from the upper end of the discocellulars, 5 from the middle, discocellulars upright, concave, the lowest the longer; vein 3 emitted some little distance before the lower end of the cell; wing triangular, apex acute, outer margin oblique and almost even, anal angle acute, hinder margin straight. *Hindwing*, vein 8 strongly arched at the base, 7 emitted some little distance before upper end of the cell, discocellulars outwardly oblique, in a straight line, the lower slightly the longer, vein 3 emitted just before the lower end of the cell, wing short, produced hindwards, outer margin uneven, a slender tail from end of vein 2, short and filamentous in both sexes, anal lobe large; body robust, palpi porrect, projecting one-third beyond the head, attenuated at their

ends, clothed with adpressed compact scales, third joint very slender, conspicuously longer and thicker in the female than in the male. Antennæ rather long, more than half as long as the costa of the forewing, club evenly formed, no secondary sexual characters; the larvæ feed on different fruits.

Type, *Dipsas epijarbas*, Moore.

DEUDORIX EPIJARBAS.

Plate 711, figs. 3, ♂, 3a, ♀, 3b, ♂, 3c, larva and pupa.

Dipsas epijarbas (recte *epiarbas*), Moore, Cat. Lep. Mus. E.I.C. i. p. 32 (1857).

Deudorix epijarbas, Hewitson, Ill. Diurn. Lep. p. 20, pl. 7, figs. 16, 18, ♂, 17, ♀ (1863). Moore, Proc. Zool. Soc. 1877, p. 589; id. Lep. Ceylon, i. p. 103, pl. 39, figs. 4, ♂, 4a, ♀ (1881). Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1886, p. 368. Distant, Rhop. Malayana, p. 464, pl. 41, fig. 5, ♂ (1886). Butler, Proc. Zool. Soc. 1886, p. 370. Staudinger, Ex. Schmett. p. 278, pl. 96, ♂ (1888). Hampson, Journ. As. Soc. Bengal, 1888, p. 359. de Nicéville, Butt. of India, iii. p. 449, pl. 29, fig. 238, ♂ (1890). de Rhé-Philipe, Journ. Bo. Nat. Hist. Soc. 1902, p. 469. Elwes, Proc. Zool. Soc. 1892, p. 642. Swinhoe, Trans. Ent. Soc. 1893, p. 305. Davidson, Bell and Aitken, Journ. Bo. Nat. Hist. Soc. 1896, p. 390, pl. 5, fig. 9, 9a, larva and pupa. Watson, id. 1897, p. 637. Mackinnon and de Nicéville, id. 1898, p. 388. Leslie and Evans, id. 1903, p. 475. Aitken and Comber, id. 1903, vol. xv. p. 49.

Deudorix epiarbas, Doherty, Journ. As. Soc. Bengal, 1886, p. 126.

IMAGO.—Male. Upperside scarlet-red. *Forewing* with broad black costal and outer marginal borders, the costal band has its inner margin somewhat curved, being limited by the median vein, consequently it is broadest at the apex, its inner edge on the outer margin is uneven, and at the hinder angle the black band is continued for a short distance along the hinder margin; the rest of the hinder margin is narrowly suffused with black, and so is the sub-median vein. *Hindwing* with the costa, base and abdominal area suffused with blackish, the abdominal fold brown, outer marginal line finely black, anal lobe black with a small red mark in it; tail black, tipped with white, the veins often more or less finely black. Antennæ black, ringed with white, club with a red tip and with a white streak on the underside below it. Underside greyish-brown, markings indicated by their white edges. *Forewing* with a thick bar, with a pale white line splitting it, at the end of the cell; a discal almost straight rather broad band narrowing gradually hindwards, a sub-marginal series of thick lunular marks, edged outwardly with white, its lower end close to the lower end of the discal band. *Hindwing* with a thick bar with a pale white line running through it, at the end of the cell; a discal series of seven conjoined spots, the upper six squarish, the seventh angled, the series irregular, the second spot a little outwards, the fifth a little inwards, touching the lower end of the spot of the discoidal band, decreasing in size hindwards, the angular spot running in on to the abdominal margin one-third above

the anal angle, a submarginal series of similar spots, increasing in size hindwards, anal lobe black, a linear white mark, and a curved streak of metallic blue scales above it, a black spot in the first interspace, ringed with orange.

Female. Upperside fulvous-brown. *Forewing* with some fulvous suffusion below the median vein, varying in extent in different examples. *Hindwing* with the abdominal fold pale, in some examples without any markings, in some the entire wing is tinted with fulvous, and sometimes there are indications of a series of fulvous submarginal spots. Underside as in the male, the ground colour often much paler.

Expanse of wings, ♂ $1\frac{4}{10}$ to $1\frac{8}{10}$, ♀ $1\frac{4}{10}$ to 2 inches.

LARVA, when full fed and extended in walking, 0·9 of an inch in length; ground colour dull ochreous, blotched with leaden-black, the surface of all the segments smooth and shining, the constrictions between the segments well-marked, each segment with a shallow dorsal pit, a sub-dorsal pit on each side, and a lateral pit which bears the deep black spiracles; the entire lateral edge of the larva furnished with rather long, bristly hairs; the larva is of the usual lycænid shape, the head small and entirely retractile into the second segment, dull ochreous, marked with leaden-black as are the segments; the body increasing in width to the fourth segment, then gradually decreasing to the anal segment, the larva is rather depressed, broader than high, the three anal segments are scutate, the shield being used to block up the entrance to the fruit on which the larva feeds; the second and third segments are brighter ochreous than the rest, the blackish markings more sparse, wholly absent on the anterior portion of the second segment. I can find no trace whatever of the special organs found on many *Lycænidæ* larvæ which are affected by ants. Feeds on the fruit of the pomegranate.

PUPA 0·55 of an inch in length, light reddish-brown speckled with black in no decided pattern, the surface rather rough above and covered sparsely with short stout white bristles, below quite smooth, of a lighter colour, and without the black speckles and bristles; shape everywhere rounded except anteriorly, where the head is anteriorly bounded by a sharp ridge, the thorax very slightly humped, the anal segment depressed, pointed. Described from specimens sent to me by Mr. P. W. Mackinnon, and obtained by him at 4,000 feet elevation below Masuri. (de Nicéville.)

HABITAT.—India, Burma, Ceylon, Andamans, Nikobars, Malay Peninsula, Borneo, Celebes, Nias.

A common species, with a very rapid flight. The larva and the pupa are figured from Davidson's original drawings.

DEUDORIX DIARA.

Plate 712, figs. 1, ♂, 1a, ♀, 1b, ♂.

Deudorix diara, Swinhoe, Ann. Mag. Nat. Hist. 1896, p. 357. H. H. Druce, Proc. Zool. Soc. 1896, p. 681, pl. 31, fig. 14, ♂.

IMAGO.—Male. Upperside similar in coloration and markings to *D. epijarbas*. Underside with the bands and spots similarly disposed, the cell bars have, however, no central white line, the ground colour of the outer two-thirds of the forewing and the upper and outer area of the hindwing greyish-white, with a pinkish tint, the bands and spots consequently very dark and prominent.

Female. Upperside dark blackish-brown with a pinkish tint. *Forewing* with the middle portion pale, showing a large black spot at the end of the cell, a black outer marginal line. *Hindwing* with the abdominal fold pale grey, a black outer marginal line, a black spot on the anal lobe, ringed with red; tail black, tipped with white. Cilia of both wings grey. Underside exactly as in its own male.

Expanse of wings, ♂ ♀ $1\frac{6}{10}$ to $1\frac{7}{10}$ inches.

HABITAT.—Assam, Borneo.

DISTRIBUTION.—Recorded by H. H. Druce from Kina Balu; the types are from the Khasia Hills; the female is here described for the first time, it differs in several respects (irrespective of its peculiar underside colouring) from the females of *epijarbas*; at first we considered it to be sport of that species, but it has established itself on the Khasia Hills, because we have received several males and two females from our native collector there.

DEUDORIX GÆTULIA.

Plate 712, figs. 2, ♂, 2a, ♀, 2b, ♂, 2c, ♀.

Deudorix gætulia, de Nicéville, Journ. Bo. Nat. Hist. Soc. 1893, p. 338, pl. H, fig. 12, ♂. Swinhoe, Trans. Ent. Soc. 1893, p. 306. de Nicéville, Journ. Bo. Nat. Hist. Soc. vol. xii. 1898, p. 148, pl. AA, fig. 27, ♀. de Nicéville, id. 1899, p. 334.

IMAGO.—Male. Upperside orange-red, paler than the colour of *epijarbas*, without the scarlet tint. *Forewing* with the marginal black bands broader, the costal band more uniform in width, but there is a small space outside the cell above vein 3 into which the orange-red colour is extended, the outer marginal band is a good deal broader, its inner edge more irregular, the black colour running in a little on veins 2 and 3 which are finely black, the band runs in broadly on the hinder margin for about one-third of its length, then narrowly to the base, not gradually, but abruptly. *Hindwing*, the costal and basal portions broadly black, the abdominal area broadly suffused with blackish, the outer margin with a narrow black band, all the veins black, anal lobe orange-red, ringed with black; tail black, tipped with white. Cilia black, with grey tips. Underside grey, more or less glazed. *Forewing* with a very indistinct discal straight series of grey lunules, pale edged, a very indistinct grey line closing the cell. *Hindwing* with a grey line with pale edges closing the cell, a discal band of small grey spots with whitish edges, rather close together, the lower part in an angular curve to the abdominal margin a little above the anal angle, a sub-terminal series of pale

lunules, a black spot on the anal lobe, ringed with white, another in the first interspace, ringed with orange, terminal line brown, with a whitish inner thread. Cilia of both wings grey, tipped with black. Antennæ black, ringed with white; club with a dull red tip, and a white streak at its base on the underside; head and body blackish above, the hinder segments of the abdomen orange-red, whitish beneath; frons whitish, eyes ringed with white.

Female. Upperside, both wings glossy pale hair-brown, becoming darker towards the margins. *Forewing* unmarked. *Hindwing* with a large anal white patch divided by the dark veins from the median nervule to the sub-median nervure, the portion in the second median interspace small, the one in the first median interspace the largest, the one in the sub-median interspace also large; a prominent anteciliary black line, which becomes lost in the ground colour of the wing after it has passed the anal white patch; anal lobe black in the middle, outwardly defined by white; tail twice as long as in the male, white with a narrow black centre. Cilia of hindwing white, very long on the abdominal margin, becoming hair-brown towards the apex of the wing, of the forewing entirely hair-brown. Underside, both wings dull silvery-grey. *Forewing* with the costa narrowly, the apex somewhat broadly, the outer margin decreasingly cupreous. *Hindwing* with an outer discal series of black spots outwardly defined with white, the three anterior ones small, round, slightly increasing in size, the one in the sub-median interspace crescentic, with a minute dot placed against it in the internal interspace, with another dot anterior to it on the abdominal margin, an oval black spot near the margin in the first median interspace, the sub-median interspace near the margin sprinkled with black scales, the anal lobe black, a prominent anteciliary black thread from the anal lobe to the discoidal nervule, also extending along the abdominal margin for a short distance anterior to the anal lobe. The specimen described is in the collection of Major F. B. Longe, R.E., who captured it on the 8th of January, 1887, at Ngokgale near Hsipaw, North Shan States, Upper Burma. (de Nicéville.)

Expanse of wings, ♂ $1\frac{6}{10}$, ♀ $1\frac{8}{10}$ inches.

HABITAT.—Assam, Burma.

DISTRIBUTION.—We have received a number of males from the Khasia Hills, from whence the type male, now in the Indian Museum, Calcutta, came; our description and figures of the male are from a Khasia example; the female we have not been able to get, we therefore give de Nicéville's description and copies of his figures.

DEUDORIX HYPARGYRIA.

Plate 712, figs. 3, ♂, 3a, ♂.

Rapala hypargyria, Elwes, Proc. Zool. Soc. 1892, p. 643, pl. 43, fig. 7, ♂.

IMAGO.—Male. Upperside. *Forewing* black, with a fulvous-red streak from the

base, which widens outwards to the disc, is limited above by the median vein and the basal third of vein 3, and hindwards by the sub-median vein, immediately above which are a few black scales, its colour is much as in *Rapala xenophon*, Fabricius, but somewhat paler; vein 2, where it runs across the upper outer end of the streak, is black. *Hindwing* also black, but somewhat paler, a large fulvous-red patch in the lower disc, broadest towards the abdominal margin and narrowing gradually outwards, making the black of the outer margin gradually narrowing to the anal angle where it is somewhat diffuse, and from whence a broad paler brown shade runs up the wing, close to and parallel with the abdominal fold, which is pale brown and becomes very pale upwards; anal lobe black with a white spot in it, and another sub-terminal white spot in the black border in the next interspace; tails black, tipped with white. Cilia brown, becoming white-tipped on the hindwing towards the anal angle, and pure white on the abdominal margin. Underside silvery greyish-white. *Forewing* tinged with pale brownish-ochreous, narrowly on the costa and outer margin, broadly at the apex. *Hindwing* with a paler brownish-ochreous tint at the apex, an inner curved series of blackish spots above the anal angle, which commences from close to the abdominal margin in a curiously shaped W-curve and is continued from the upper outer end of the curve in an outwardly curved series of spots, which curve in upwards close to the margin and become obsolete before reaching the apex. The anal space outside this series is almost pure white, there is a black spot on the anal lobe, another in the first median interspace, a small blackish mark in the interspace between them, and still smaller spots in the interspaces above; terminal line black. Antennæ black, with white spots on the joints beneath, and a dull orange tip, and a white streak below, beneath the club; frons white; head and body brown above, white beneath.

Expanse of wings, ♂ 1½ inches.

HABITAT.—Karen Hills, Perak.

INDO-MALAYAN ALLIED SPECIES.

Deudoria strephanus, H. H. Druce, Proc. Zool. Soc. 1896, p. 681, pl. 31, fig. 15, ♂. Habitat, Kina Balu, Borneo.

Genus RAPALA.

Rapala, Moore, Lep. Ceylon, i. p. 105 (1881). Distant, Rhop. Malayana, p. 276 (1885).

de Nicéville, Butt. of India, iii. p. 454 (1890). Leech, Butt. of China, etc. ii. p. 413 (1893).

Nadisepa, Moore, Proc. Zool. Soc. 1882, p. 249.

Baspa, Moore, l.c. p. 250.

Bidaspa, Moore, l.c.

Vadebra, Moore, l.c. 1883, p. 528.

Eyes finely hairy. *Forewing*, vein 12 ends on the costa about opposite the

end of the cell, 11 emitted from the cell, about two-thirds from the base, 10 from three-fourths, 9 from the middle of 7, discocellulars nearly upright, very slightly outwardly oblique, the lower a little the longer, vein 3 emitted a short distance before the lower end of the cell, wing short, outer margin slightly convex, a broad tuft of hair on the middle of the hinder margin in the male, and in some species a patch of differently formed scales from those on the rest of the wing, on the upperside at and beyond the end of the discoidal cell. *Hindwing* somewhat produced hindwards, anal angle lobed, a filamentous tail of moderate length at the end of vein 2 in both sexes, a glandular patch of scales placed above and against the sub-costal nervure in the male, extending a little distance along the base of the first sub-costal nervule, usually semicircular, variable both in shape and size, but not extending into the discoidal cell, discocellulars outwardly oblique, straight and of equal length, vein 3 emitted just before the lower end of the cell; the genus appears to be strictly confined to the Indo-Malayan region.

Type, *Thecla varuna*, Horsfield.

RAPALA MELAMPUS.

Plate 712, figs. 4, ♂, 4a, ♀, 4b, ♂.

Papilio melampus, Cramer, Pap. Exot. iv. p. 142, pl. 362, figs. G, H, ♂ (1781).

Baspa melampus, Moore, Proc. Zool. Soc. 1882, p. 250. de Nicéville, Journ. As. Soc. Bengal, 1885, p. 48. Doherty, id. 1886, p. 126. Swinhoe, Proc. Zool. Soc. 1885, p. 135, and 1886, p. 429.

Deudorix melampus, Butler, Proc. Zool. Soc. 1883, p. 147.

Rapala (Baspa) melampus, Hampson, Journ. As. Soc. Bengal, 1888, p. 359.

Rapala melampus, de Nicéville, Butt. of India, iii. p. 467 (1890); id. Journ. Bo. Nat. Hist. Soc. 1890, p. 386. Betham, id. 1891, p. 183. Watson, id. p. 50. Mackinnon and de Nicéville, id. 1898, p. 389. Nurse, id. 1899, p. 512. Aitken and Comber, id. vol. xv. 1903, p. 49. de Rhé-Philipe, id. 1905, p. 720.

Thecla sorya, Kollar, Hugel's Kaschmir, iv. (2), p. 414, pl. 5, figs. 1, 2, ♂ (1848).

IMAGO.—Male. Upperside scarlet. *Forewing* with the costal and outer marginal bands black, of moderate width, gradually increasing from the base to the apex, then gradually narrowing on the outer margin to the hinder angle, veins finely black. *Hindwing* with the costal space pale dusky, outer marginal line finely black, anal lobe black, with some ochreous scales above on the inner side and a few scattered metallic greenish scales on the outer side; tail black, tipped with white. Cilia black with greyish white tips. Underside pale purplish-brown, markings a little darker than the ground colour with whitish edges. *Forewing* with the hinder marginal space pale, a double dark line at the end of the cell, one on each side of the discocellulars, a narrow nearly straight discal line of conjoined lunular marks from near the costa to the sub-median vein, the third from the costa a very little outwards, indications of a series of

sub-marginal marks. *Hindwing* with a dark double line at the end of the cell, a discal band of conjoined lunular marks as in the forewing, the latter straight from the costa to vein 2, then curving inwards in two angles to the abdominal margin one-third above the anal angle, a sub-terminal series of indistinct lunular marks, anal lobe black, with some pale whitish-grey scales above it and between it and a black spot in the first interspace; terminal line of both wings dark brown, with a white thread on its inner side in the hindwing. Antennæ black, ringed with white, club with a dull red tip, and a white streak beneath; frons grey, with a brown median stripe; eyes ringed with white; head and body brown above, with red hairs, pale purplish-brown beneath, the abdomen ochreous-grey.

Female. Upperside duller in colour than the male, often more or less brick-red. *Forewing* with the marginal bands dark brown or blackish-brown. *Hindwing* still duller in colour, generally suffused with pale brown. Underside as in the male.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{6}{10}$ inches.

LARVA, feeds on the flowers of *Ougeinea dalbergeoides* and *Zyziphus rugosus*. It is exactly similar to that of *R. schistacea*, Moore, but the colour is pure white, changing to rose before turning into a pupa.

PUPA, similar to that of *R. schistacea*.

HABITAT.—India, Ceylon, Malay Peninsula, Nias, Sumatra.

DISTRIBUTION.—The type came from the Coromandel coast; we took a good many specimens at Mhow, Bombay and Poona; Hampson records it from the Nilgiris, Betham from the Central Provinces, Watson from Chin Lushai, Mackinnon and de Nicéville from Mussuri, Nurse from Kutch, Aitken and Comber from Matheran, de Rhé-Philipe from Lucknow, de Nicéville from Sikkim, Nias and Sumatra.

RAPALA JARBAS.

Plate 713, figs. 1, ♂, 1a, ♀, 1b, ♂, 1c, larva and pupa.

Papilio iarbas, Fabricius, Mant. Ins. ii p. 68 (1787).

Hesperia jarbas, Fabricius, Ent. Syst. iii. (1), p. 276 (1793).

Papilio jarbas, Donovan, Ins. Ind. pl. 40, fig. 3, ♂ (1800).

Polyommatus jarbas, Godart, Enc. Méth. ix. p. 646 (1823).

Thecla jarbas, Horsfield, Cat. Lep. E.I.C. p. 93, pl. 4, fig. 2, larva; 2a, pupa, 2b-e, structure of imago (1829).

Nadisepa jarbas, Moore, Proc. Zool. Soc. 1882, p. 249; id. Journ. Linn. Soc. Zool. 1886, p. 43.

Deudorix jarbas, Distant, Rhop. Malayana, p. 278, pl. 24, fig. 15, ♂; pl. 20, fig. 26, ♀ (1885).

Rapala jarbas, de Nicéville, Butt. of India, iii. p. 468 (1890). Manders, Trans. Ent. Soc. 1890, p. 531. Watson, Journ. Bo. Nat. Hist. Soc. 1891, p. 50, and 1897, p. 668. Elwes, Proc. Zool. Soc. 1892, p. 643.

Dipsas melampus, Horsfield and Moore (nec Cramer), Cat. Lep. Mus. E.I.C. i. p. 32, pl. i. figs. 2, larva, 2a, pupa (1857).

Deudorix melampus, Butler (nec Cramer), Cat. Fabr. Lep. B. M. p. 181 (1869).

IMAGO.—Male. Upperside scarlet-red, of a somewhat duller colour than *melampus*. *Forewing* with costal and outer marginal black borders, more even on the costa than in *melampus*, the apex more broadly black, the band rapidly decreasing in width hindwards on the outer margin, median vein and its branches prominently black. *Hindwing* with the costal and abdominal areas brownish, outer marginal line black; anal lobe scarlet-red, lined outwardly with black; tail black, tipped with white. Cilia of both wings black with pale tips, cilia of the anal lobe and the space to the tail white, tipped with black. Underside paler than in *melampus*, more grey, varying somewhat in tint in different examples, the two lines at the ends of the cells in both wings and the discal bands much as in *melampus*, but the discal band of the forewing is more even, and both are broader and more linear, the white edgings clearer and more prominent, the black anal spots are larger, there is a diffuse blackish spot in the interspace between the two prominent anal spots, there is usually some white suffusion on the abdominal margin above the black spot on the anal lobe, and the white anteciliary thread at the anal angle is more prominent. Antennæ black, ringed with white; club with a red tip; frons pure white; head and body brown above, with red hairs, purplish-grey beneath.

Female. Upperside ochreous-brown, with a slight purplish tint. *Forewing* with the costa broadly, the outer margin narrowly obscure brown. *Hindwing* with the costal space broadly brownish, a blackish-brown outer marginal line; anal lobe black with a large scarlet-red spot in it, and a white spot above it on the abdominal margin. Underside as in the male.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{6}{10}$ inches.

LARVA, ochreous, considerably marked with black, ornamented with a sub-dorsal and a lateral series of tubercles bearing thick brushes of short black bristly hairs; the hairs conspicuous, all the segments of nearly equal width, the larva flattened, the constrictions between the segments not very prominent.

PUPA, brownish-ochreous, sprinkled with black dots, smooth, naked, of the usual lycænid shape, the head rounded, the thorax slightly humped in the middle, the abdomen ending in a sharp point. These descriptions are drawn up from Dr. Horsfield's figures of the transformations of this species as exhibited in Java, and given in the Cat. Lep. Mus. E.I.C. (de Nicéville.)

HABITAT.—Siam, India, Burma, Malay Peninsula, Java.

DISTRIBUTION.—The type in the Banksian Cabinet in the B. M. came from Siam; we have received examples of both sexes from the Khasia Hills, and have it also from Rangoon; Moore records it from Mergui, Elwes from Bernardmyo, Watson from Chin

Lushai and the Chin Hills, Manders from the Shan States, de Nicéville from Sikkim and Bhutan, and Horsfield and Moore from Java, Distant from the Malay Peninsula. This species much resembles *R. melampus*, but can easily be recognised by its scarlet-red anal lobe, the anal lobe of *melampus* being black.

RAPALA SUFFUSA.

Plate 713, figs. 2, ♂, 2a, ♀, 2b, ♂.

Deudoria suffusa, Moore, Proc. Zool. Soc. 1878, p. 834, pl. 52, fig. 8, ♂.

Vadebra suffusa, Moore, l.c. 1883, p. 528.

Rapala suffusa, de Nicéville, Butt. of India, iii. p. 466 (1890). Elwes, Proc. Zool. Soc. 1892, p. 643. H. H. Druce, Proc. Zool. Soc. 1896, p. 682.

IMAGO.—Male. Upperside dull coppery-red. *Forewing* with broad costal and outer marginal black borders of almost even width, the black colour filling the basal two-thirds of the cell, the inner margin of the outer marginal band uneven, the median vein and its branches black, a little blackish suffusion on the hinder margin. *Hindwing* with the costa pale, the basal and abdominal areas suffused with blackish, the abdominal fold pale, outer marginal line black; tail black, tipped with white; anal lobe with a black spot ringed with pale bluish-white, a pale yellowish spot on its inner side. Cilia grey. Underside dull chrome-yellow. *Forewing* with a pale double line at the end of the cell, one on each side of the discocellulars, often obsolete, a discal narrow grey lunular line, with outer pale edge, and slightly outwardly curved, very indistinct. *Hindwing* with a similar discal line, its lower end curving in two angles on to the abdominal margin one-fourth from the anal angle, where its white edging is more conspicuous and somewhat silvery; anal lobe black, ringed with white, with a short silvery line running from above it on to the abdominal margin, parallel with the silvery edging of the discal line; a smaller black spot in the first interspace, a few black and white scales in the interspace between them; both wings with a fine brown marginal line, which becomes black, with a white inner thread towards the anal angle. Antennæ black, ringed with white; club with a red tip; frons chrome-yellow; eyes ringed with white; head and thorax brown above with greenish hairs; abdomen reddish-brown above, chrome-yellow beneath.

Female. Upperside purple-brown, shading into blackish on the borders, outer marginal line on both wings black; tail black, tipped with white; anal lobe with a black spot, ringed with bluish-grey, with a small yellow spot on it. Cilia bluish-grey, with black tips from the tail to the lobe. Underside as in the male, the ground colour usually paler, consequently the markings more distinct.

Expanse of wings, ♂ $1\frac{1}{2}$, ♀ $1\frac{6}{10}$ to $1\frac{7}{10}$ inches.

HABITAT.—Burma, Sylhet, Assam.

DISTRIBUTION.—The type came from Taoo, Upper Tenasserim, de Nicéville records it from Palone, Rangoon and Sylhet, Elwes from East Pegu; we have received several examples of both sexes from the Khasia Hills.

RAPALA TESTA.

Plate 713, figs. 3, ♂, 3a, ♀, 3b, ♂.

Rapala testa, Swinhoe, Ann. Mag. Nat. Hist. 1897, p. 410.

IMAGO.—Male. Upperside. *Forewing* black, a small middle space below the median vein, down to the sub-median, dull brownish-red or coppery-red extending narrowly and decreasingly above veins 2 and 3 which are black. *Hindwing* with the costal and abdominal areas broadly suffused with black, the abdominal fold pale, the outer marginal line and all the veins finely black, the remaining small space in the lower disc of the same dull red colour as in the forewing; tail black, tipped with white; anal lobe black with a yellowish spot in it. Cilia black with grey tips. Underside dull pale ochreous-grey, bands as in *R. suffusa*; anal lobe black, a black spot in the first interspace, some black suffusion between them which extends a little up the abdominal margin; outer marginal line finely brown, with a white inner thread. Antennæ black, ringed with white, club with a red tip; frons ochreous-white; eyes ringed with white; head and body blackish above, with ochreous hairs, ochreous-grey beneath.

Female. Upperside brown. *Forewing* with the inner area pale brown, darkening towards the borders. *Hindwing* with the disc paler than the rest of the wing, the abdominal fold pale, anal lobe with a black spot with a yellow spot on it, both ringed with bluish-grey, and a white spot above it; both wings with black terminal line with a pale inner thread at the anal angle of the hindwing. Underside as in the male, the black spot near the anal angle faintly capped with orange.

Expanse of wings, ♂ $1\frac{3}{10}$, ♀ $1\frac{4}{10}$ inches.

HABITAT.—Jaintia Hills, Assam.

Described from two pairs received from our native collector.

RAPALA INTERMEDIA.

Plate 714, figs. 1, ♂, 1a, ♀, 1b, ♂.

Deudoria enipeus var. *intermedius*, Staudinger, Ex. Schmett. p. 279 (1888).

Rapala xenophon, de Nicéville (part), Butt. of India, iii. p. 470 (1890).

IMAGO.—Male. Upperside. *Forewing* black, a narrow fulvous-red streak below the median vein from the base to the outer two-thirds of the wing, gradually increasing

in width and with its end rounded. *Hindwing* with nearly the whole wing black, the fulvous-red area being confined to a band composed of red streaks divided thickly by the veins which fill up the first and second interspaces and the ends of the third, fourth and fifth; the abdominal fold pale as usual, the anal lobe black, crowned with red, with white cilia tipped with black, which is continued to the tail, which is black, tipped with white, and there is a white spot on the abdominal margin just above the lobe, marginal line black. Cilia grey. Underside dark purplish-grey. *Forewing* with a pale brown line at the end of the cell, with inner white edging, often obsolete, a discal, slightly outwardly curved, pale brown thin line outwardly white-edged. *Hindwing* with similar discoidal and discal lines, the latter sinuous hindwards, curving in the usual double angle to the abdominal margin, its outer white edging on the lower part rather prominent; anal lobe black; a black spot in the first interspace, the space between them black with some bluish-white scales; both wings with brown terminal line which becomes deep black on the lower half of the hindwing, with a prominent white inner thread.

Female. Upperside brown, with a faint pinkish-purplish tint, darkening towards the margins. *Forewing* without markings. *Hindwing* with the costal space and abdominal fold pale; tail black, tipped with white; anal lobe with a black spot, crowned with pale orange; both wings with terminal line black. Cilia grey, white tipped with black on the anal lobe and to the tail. Underside as in the male.

Expanse of wings, ♂ $1\frac{3}{10}$, ♀ $1\frac{4}{10}$ inches.

HABITAT.—Andaman and Nikobar Islands.

DISTRIBUTION.—Distributed apparently throughout the islands; our description is from two males and a female in our collection from Port Blair: de Nicéville puts this form as a synonym to *R. xenophon*, Fabricius, but it appears to us to be a very distinct species.

RAPALA XENOPHON.

Plate 714, figs. 2, ♂, 2a, ♀, 2b, ♂, 2c, larva and pupa.

Hesperia xenophon, Fabricius, Ent. Syst. iii. (1), p. 272 (1793).

Polyommatus xenophon, Godart, Enc. Méth. ix. p. 640 (1823).

Thecla xenophon, Horsfield, Cat. Lep. E.I.C. i. p. 94 (1829).

Dipsas xenophon, Horsfield and Moore, Cat. Lep. Mus. E.I.C. p. 31, pl. 1, figs. 3, larva, 3a, pupa (1857).

Deudorix xenophon, Hewitson, Ill. Diurn. Lep. p. 21, ♀ (1869). Distant, Rhop. Malayana, p. 465, pl. 44, figs. 1, ♂, 2, ♀ (1886).

Nadisepa xenophon, Moore, Journ. Linn. Soc. Zool. 1885, p. 43.

Rapala xenophon, de Nicéville, Butt. of India, iii. p. 470 (1890); id. Journ. Bo. Nat. Hist. Soc. 1890, p. 297. H. H. Druce, Proc. Zool. Soc. 1895, p. 623.

Deudorix dienece, Hewitson (♂ only), Ill. Diurn. Lep. Suppl. p. 31; pl. Suppl. 5a, figs. 65, 67, male, nec 66, female (1878). de Nicéville, Journ. As. Soc. Bengal, 1885, p. 48.

Myrina megistia (?), Butler (nec Hewitson), Trans. Linn. Soc. Zool. Lond. 1877, p. 549.

Rapala damona, Swinhoe, Ann. Mag. Nat. Hist. 1890, p. 450.

IMAGO.—Male. Upperside bright fulvous-red. *Forewing* with broad black marginal borders, the black band on the costa fills up the basal two-thirds of the cell, its inner margin is uneven all round, the band is narrowest on the outer margin and is as broad on the hinder margin as it is on the costa, broadest at the hinder angle and at the apex, the fulvous-red spaces inside the wing, however, vary somewhat in extent in different examples. *Hindwing* with the costal space, the entire cell space, the abdominal area and abdominal fold black, the rest of the wing fulvous-red, the veins finely black, anal lobe black with an ochreous spot in it, and a white fringe, tipped with black; outer marginal line black; tail black, tipped with white. Cilia of both wings orange-grey. Underside dark ochreous-grey, in some examples varying to pale ochreous-brown, a pale ochreous-white line, edged on both sides with brown at the end of the cell, a discal, slightly outwardly curved, fine brown line, with pale outer edges, an indistinct sub-marginal pale brown line, well separated from the margin. *Hindwing* with cell streak and discal line as in the forewing, the latter somewhat sinuous and curving inwards at its lower end in two angles to the abdominal margin, with the white outside edging rather prominent in the curve; anal lobe black, with a white spot on it, and a black line from it running up the abdominal margin for a short distance, a black spot in the first interspace, a blackish spot between them, both capped with orange; both wings with terminal brown line, black towards the anal angle, with an inner white thread. Antennæ black, ringed with white, club tipped with red; frons ochreous-white; head and body blackish above, ochreous-grey beneath.

Female. Upperside brown, with a slight pinkish-purple tint, the ground colour darkening towards the margins; anal lobe black, with a white spot above it on the abdominal margin. Cilia of both wings greyish-brown, white with black tips on the lower part of the hindwing. Underside of a purer ochreous-grey colour, far more ochreous than in the male, markings similar.

Expanse of wings, ♂ $1\frac{4}{10}$, ♀ $1\frac{5}{10}$ to $1\frac{6}{10}$ inches.

LARVA, varies at different periods in colour from yellow with a greenish cast to dark ferruginous-brown, and at one period the lateral bands are very obscure; feeds on *Schimedelia racemosa*; head rather large, segments increasing in size from the second to the fifth, thence to anal segment of equal size, with a sub-dorsal and lateral row of short tubercles bearing clumps of short closely-set bristly hairs; the body just above the legs fringed with hairs; there is a narrow black dorsal line, the segments blotched with black, a sub-dorsal reddish band.

PUPA very rounded, the head and anal segments bluntly pointed, brown, sprinkled with darker brown and reddish marks. Description drawn up from the figures in Cat.

Lep. Mus. E.I.C., from drawings made by Dr. Horsfield in Java. The larva and pupa of *R. xenophon* are very similar to those of *R. jarbas*. (de Nicéville.)

HABITAT.—India, Burma, Malay Peninsula, Java, Sumatra, Borneo, Nias, Andamans.

DISTRIBUTION.—Widely distributed, but not common anywhere in the Indian region; de Nicéville records it from Sylhet, Cachar, Calcutta, Burma and Chin Lushai; we have received a few examples of both sexes from the Khasia Hills.

RAPALA PETOSIRIS.

Plate 714, figs. 3, ♂, 3a, ♀, 3b, ♂ (Wet-season Brood), 3c, ♂, 3d, ♀ (Dry-season Brood).

Deudorix petosiris, Hewitson, Ill. Diurn. Lep. p. 22, pl. 9, figs. 30, 31, ♂ (1863).

Vadebra petosiris, Moore, Proc. Zool. Soc. 1883, p. 528. Wood-Mason and de Nicéville, Journ. As. Soc. Bengal, 1886, p. 369.

Rapala petosiris, de Nicéville, Butt. of India, iii. p. 465 (1890). Watson, Journ. Bo. Nat. Hist. Soc. 1891, p. 50, and 1897, p. 668. Elwes, Proc. Zool. Soc. 1892, p. 643. Swinhoe, Trans. Ent. Soc. 1893, p. 307.

Wet-season Brood (Figs. 3, ♂, 3a, ♀, 3b, ♂).

IMAGO.—Male. Upperside dull red, veins finely black. *Forewing* with moderately broad black costal band, narrow at the base, gradually broadening to the apex, then narrowly down the outer margin to a point at the hinder angle. *Hindwing* with a fine blackish outer marginal line, costal area and abdominal fold brown, anal lobe ochreous-red, outlined with black, the cilia white with black tips from the lobe to the tail, which is black tipped with white. Cilia of both wings orange-grey. Underside pale rufous-brown, tinged with ochreous, markings dark brown. *Forewing* with a dark round spot in the middle of the cell, a bar with a pale centre at the end, a thin discal, almost straight band, outwardly pale-edged from the costa to near the hinder margin. *Hindwing* with a round dark spot on the glandular patch below the costa, discocellular as in the forewing and a similar thin discal band, somewhat irregular in its formation, slightly outwardly curved in its middle, its lower portion bending inwards in two blunt angles to the abdominal margin one-third from the anal angle, where it is edged with white on both sides; anal lobe black, a small black spot in the first interspace with a few scattered silvery scales between them; both wings sometimes with indications of a sub-marginal fascia, terminal line brown, with an inner white thread on the hinder part of the hindwing. Antennæ black, ringed with white, the club with a red tip; frons red, with an ochreous stripe on each side; head and body reddish-brown above, brownish-ochreous beneath.

Female. Upperside glossy steel-bluish-brown, the shade of colour darkening towards the margins, anal lobe with a black spot, with a bluish-white cilia with black

tips up to the tail, which is black, tipped with white, the rest of the cilia is brown, with pale tips. Underside as in the male, the ground colour generally duller, the sub-basal dark spot below the costa of the hindwing absent.

Expanse of wings, ♂ ♀ $1\frac{5}{10}$ to $1\frac{8}{10}$ inches.

Dry-season Brood (Figs. 3c, ♂, 3d, ♀).

Male. Upperside smoky-red, very dark and dull in colour, the red colour merging into the black borders which are about the same as in the wet-season brood. Underside paler and dusky in colour, the spot in the middle of the cell of the forewing very small, the spot on the glandular patch in the hindwing obsolete.

Female. Upperside like the male of the other form. Underside like its own male, of the same pale dusky ochreous-brown colour.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{5}{10}$ inches.

HABITAT.—Sikkim, Sylhet, Cachar, Orissa, Burma.

DISTRIBUTION.—The type is labelled East India, Elwes records it from the Karen Hills, Watson from Chin Lushai and the Chin Hills, we have received many examples from Sylhet, Sikkim and the Khasia Hills, de Nicéville records it also from Cachar, Orissa and Burma.

RAPALA NISSA.

Plate 715, figs. 1, ♂, 1a, ♀, 1b, ♂ (Wet-season Brood), 1c, ♂, 1d, ♀ (Dry-season Brood).

Thecla nissa, Kollar, Hugel's Kaschmir, iv. (2), p. 412, pl. 4, figs. 3, 4 (1848).

Amblypodia nissa, Horsfield and Moore, Cat. Lep. Mus. E.I.C. i. p. 46 (1857).

Deudorix nissa, var. (part), Hewitson, Ill. Diurn. Lep. p. 23, pl. 10, figs. 42, 43, ♂ (nec 44), (1863).

Bidaspa nissa, Moore, Proc. Zool. Soc. 1882, p. 250. Doherty, Journ. As. Soc. Bengal, 1886, p. 126.

Rapala nissa, Butler, Proc. Zool. Soc. 1886, p. 370. de Nicéville, Butt. of India, iii. p. 463 (1890).

Manders, Trans. Ent. Soc. 1890, p. 531. Leech, Butt. of China, etc. ii. p. 413, pl. 29, figs.

12, ♂, 15, ♀ (1893). Elwes, Proc. Zool. Soc. 1892, p. 643. Swinhoe, Trans. Ent. Soc. 1893,

p. 307. Mackinnon and de Nicéville, Journ. Bo. Nat. Hist. Soc. 1898, p. 389.

Baspa nissa, Doherty, Journ. As. Soc. Bengal, 1886, p. 126.

Rapala subpurpurea, Leech, Entom. xxiii. p. 42 (1890).

Wet-season Brood (Figs. 1, ♂, 1a, ♀, 1b, ♂).

IMAGO.—Male. Upperside shining purplish-brown, with a steel gloss in certain lights. *Forewing* with the costal and outer marginal borders purplish-black, with the same steel gloss on them, the inner colour merging into the outer; a small orange patch beyond the cell. *Hindwing* with the costal margin pale, the abdominal fold fuscous, anal lobe black, with an orange spot in it; tail black, tipped with white; terminal line black. Cilia black, with pale tips. Underside ochreous-brown, varying

somewhat in shade of colour in different examples ; markings darker brown. *Forewing* with a bar at the end of the cell with a pale centre, a discal thin band outwardly pale-edged, divided by the veins, slightly outwardly curved, from near the costa to the sub-median vein. *Hindwing* with a similar discal band, straight from the costa to vein 2, then bent inwards in two angles to the abdominal margin one-third from the anal angle, where it is white-edged on both sides ; anal lobe black, with a white spot above it ; a black spot, capped with dull orange in the first interspace, the space between them with black and white scales ; both wings with an indistinct sub-marginal fascia and black marginal line, the spot in the first interspace with a white line outside it ; tail black, tipped with white. Antennæ black, ringed with white, the club with a red tip ; frons ochreous, with a grey medial stripe ; head and body above and below concolorous with the wings.

Female. Upperside paler than the male, paler purplish, the costal and outer marginal black bands of the forewing more prominent, the orange patch outside the cell large, varying somewhat in size in different examples. Underside similar.

Expanse of wings, ♂ ♀ $1\frac{5}{10}$ to $1\frac{7}{10}$ inches.

Dry-season Brood (Figs. 1c, ♂, 1d, ♀).

Male and Female. Upperside much paler than in the wet-season form, the ground colour more inclined to pale lilac-purple, merging into the blackish margins ; without the orange patch on the forewing in either sex. Underside also duller and paler, somewhat of a purplish-grey colour ; markings similar, but more indistinct.

Expanse of wings, ♂ ♀ $1\frac{3}{10}$ to $1\frac{5}{10}$ inches.

HABITAT.—Himalayas, Assam, Sikkim, Shan States.

DISTRIBUTION.—We have it from Kulu, Sikkim and the Khasia Hills, Elwes records it from the Naga Hills, Mackinnon and de Nicéville from Mussuri, Manders from the Shan States, Doherty from Kumaon, de Nicéville also from Naini Tal, 4,000 to 6,500 feet elevation. It is a very variable species ; we describe and figure the extreme seasonal forms.

RAPALA ROGERSI, nov.

Plate 715, figs. 2, ♂, 2a, ♀, 2b, ♂.

Rapala rogersi, Bingham, MS.

IMAGO.—Male. Upperside. *Forewing* black, with a greenish tint ; the basal half of the median interspace and the hinder marginal space below the sub-median vein glistening blue-green in certain lights. *Hindwing* of the same colour, the costal space and abdominal fold pale blackish-brown ; the veins and streaks below them and the median interspaces shot with blue-green in certain lights ; anal lobe with a black spot on its outer side with a metallic blue-green dot on it, and an orange spot on its inner

side, with a bluish-white cilia, tipped with black, which is continued to vein 3, the rest of the cilia dark grey; tail black, tipped with white. Underside chocolate-brown with a slight purple tint; markings darker brown. *Forewing* with two lines across the end of the cell, a narrow band outwardly edged with whitish, slightly outwardly curved, from near the costa to near the hinder margin. *Hindwing* with a bar at the end of the cell, prominently edged with white on each side and with a pale line through it; a discal band of seven conjoined squarish spots, edged with white on both sides, passing close to the discoidal bar, the third and fourth outwards, the fifth inwards, the seventh angular, running in on to the abdominal margin one-third above the anal angle, a marginal series of white spots decreasing in size upwards and becoming obsolete above the middle of the wing; anal lobe black, with a small white smear above it containing a short black line, with blue scaling above it and white scaling below it; a large black spot in the first interspace, almost obliterating the white marginal spot, capped with orange, a small brown spot in each of the white marginal spots in the next two upper interspaces, a black smear, containing some pale blue scales almost obliterating the white spot in the interspace between the large black spot and the anal lobe. Antennæ black, ringed with white; frons ochreous, with a brown medial stripe; head and body above and below concolorous with the wings, abdomen ochreous beneath.

Female. Upperside brown, shading darker towards the margins. *Hindwing* with the costal space and abdominal fold pale, anal lobe and tail as in the male. Underside with the ground colour paler and of a greyish tint, markings similarly disposed, but the bands are broader and the sub-terminal black spot in the first interspace on the hindwing is ringed with orange.

Expanse of wings, ♂ $1\frac{1}{2}$, ♀ $1\frac{3}{10}$ inches.

HABITAT.—Nikobar Islands.

Our description and figures are from a pair from Kamorta given to us by the late Colonel Bingham.

RAPALA SPHINX.

Plate 715, figs. 3, ♂, 3a, ♀, 3b, ♂.

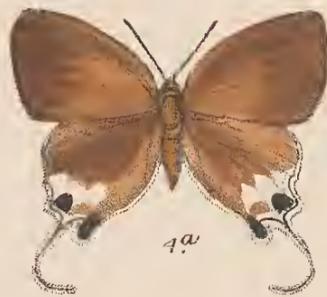
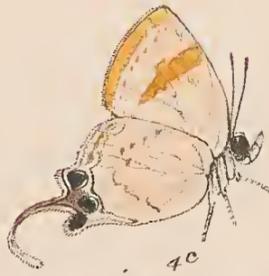
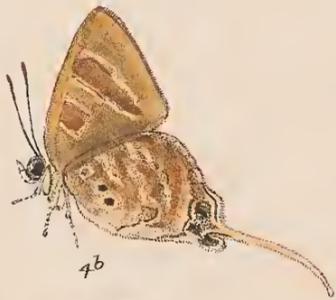
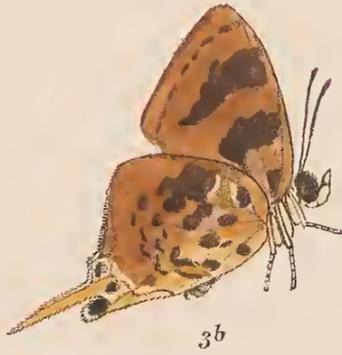
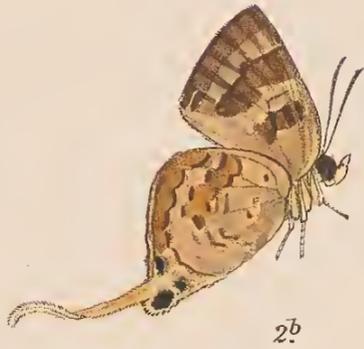
Papilio sphinx, Fabricius, Syst. Ent. p. 520 (1775).

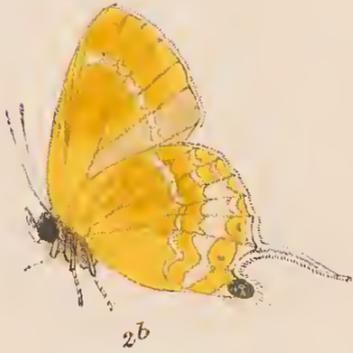
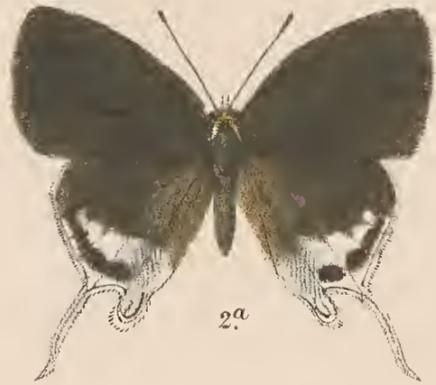
Deudorix sphinx, Butler, Cat. Fabr. Lep. B. M. p. 180 (1869).

Rapala sphinx, H. H. Druce, Proc. Zool. Soc. 1895, p. 621.

Rapala rhæcus, de Nicéville, Journ. Bo. Nat. Hist. Soc. 1895, p. 319, pl. P, fig. 47, ♂, and 1896, p. 182, pl. T, fig. 40, ♀.

IMAGO.—Male. Upperside dark bright blue, with a beautiful brilliant sheen in certain lights. *Forewing* with the costa and outer marginal bands black, of moderate width. *Hindwing* with the costal and outer marginal bands also black, but usually a little narrower; abdominal fold blackish; anal lobe black with some ochreous scales and with a white cilia, tipped with black which extends to the tail, which is







1



1b



1a



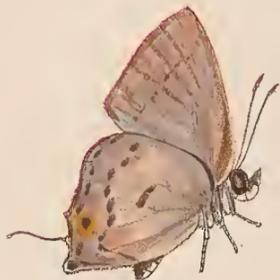
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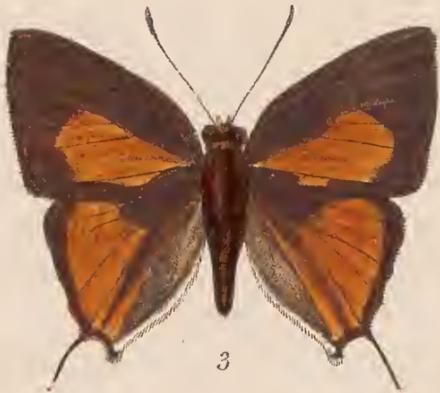
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2a



2b



3



2c



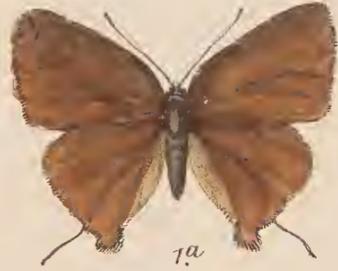
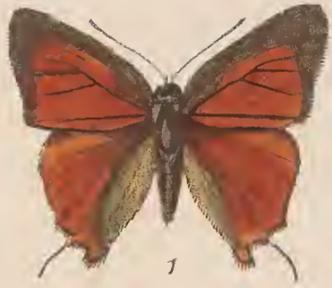
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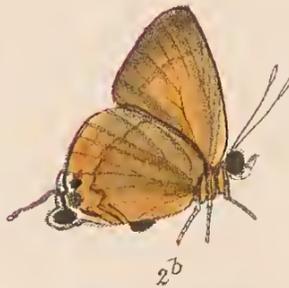
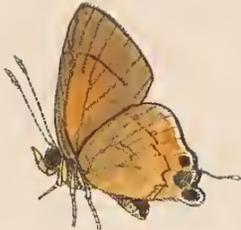


4b



4a





E. C. Knight del. et lith.

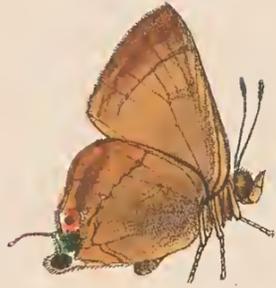
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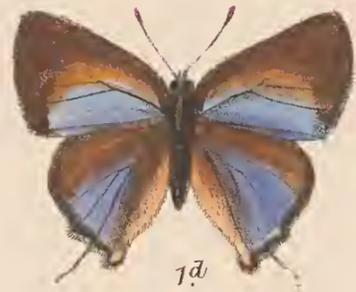
1a



1b



1c



1d



2b



2



2a



3b



3



3a

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