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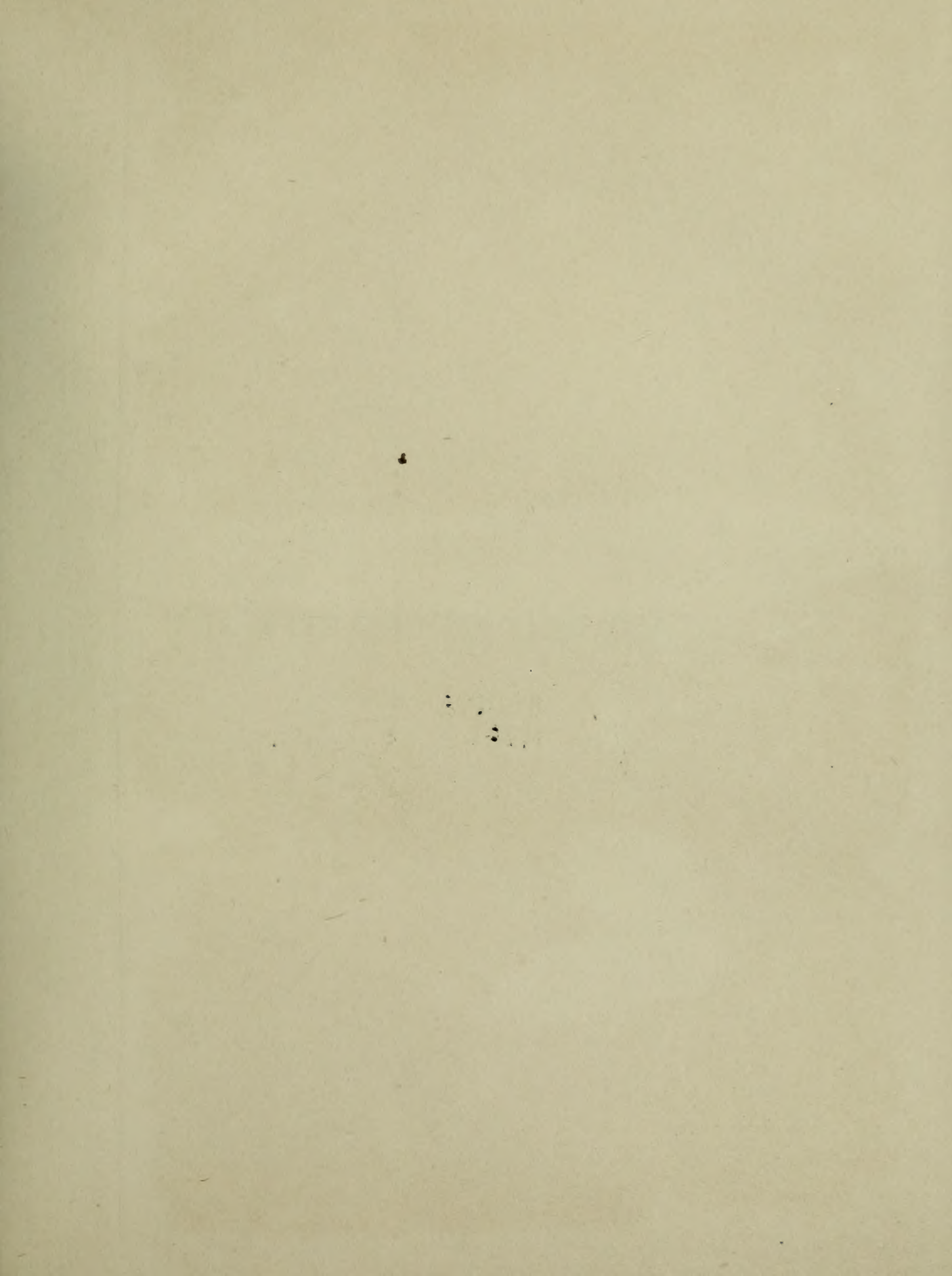
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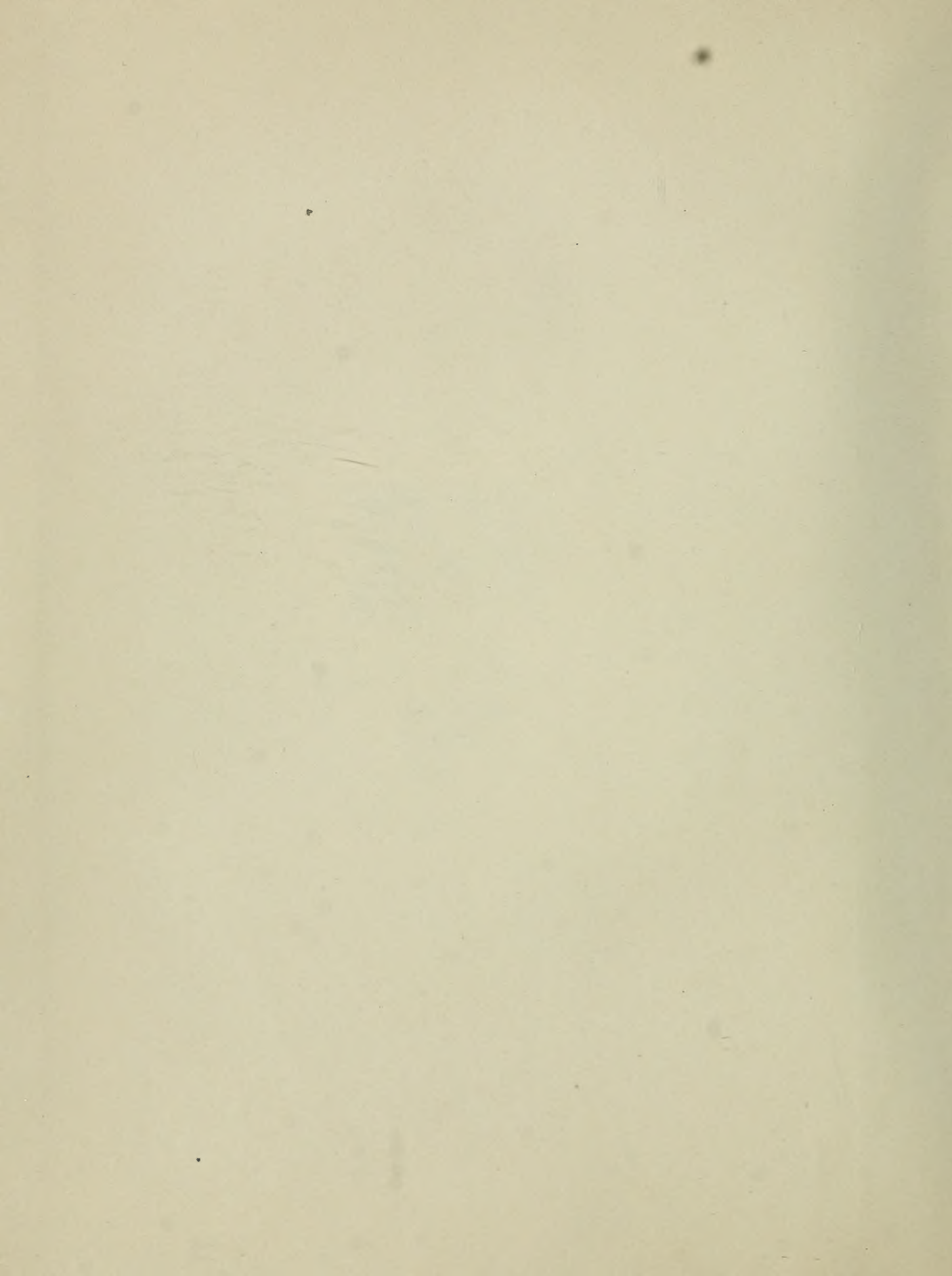
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BIOLOGY










LEPIDOPTERA INDICA

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# LEPIDOPTERA INDICA.

BY

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FELLOW OF THE ZOOLOGICAL SOCIETY OF LONDON, AND OF THE ENTOMOLOGICAL SOCIETY OF LONDON; CORRESPONDING MEMBER OF THE ENTOMOLOGICAL SOCIETY OF STETTIN, AND OF THE ENTOMOLOGICAL SOCIETY OF THE NETHERLANDS; ASSOCIATE MEMBER OF THE LINNEAN SOCIETY, LONDON, AND OF THE ASIATIC SOCIETY OF BENGAL.

VOL. III.

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**RHOPALOCERA.**

FAMILY NYMPHALIDÆ.

SUB-FAMILY NYMPHALINÆ (*continued*), Groups POTAMINA, EUTHALIINA, LIMENITINA.

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LEPIDOPTERA INDICA





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Biology

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## ERRATA.

- Page 1. Bottom line. For 1895 read 1896.  
 ,, 141. Sixth line from bottom. For *Nepitidæ* read *Neptidæ*.  
 . 146. Genus No. 10. For *Pantaporia* read *Pantoporia*.  
 147. Second line in second column. For *Illegera* read *Illigera*.



# LEPIDOPTERA INDICA.



## Sub-family NYMPHALINÆ (*continued*).

### Group II. POTAMINA.

- Potamides*, Hübner, Tentamen, p. 1 (1806).  
*Apaturides* (part), Boisduval, Index Méth. p. 24 (1840). Kirby, Eur. Butt. p. 44 (1862).  
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*Nymphalites* (part), Blanchard, Hist. Nat. des Ins. ii. p. 332 (1845).  
*Nymphalidi* (part), Stephens, Catal. Brit. Lep. Brit. Mus. p. 10 (1850). Stainton, Manual Brit. Lep. p. 21 (1857).  
*Nymphalina* (part), Herr. Schæffer, Prod. Syst. Lep. p. 17 (1864). Distant, Rhop. Malayana, p. 83 (1882).  
*Apaturidæ*, Guence, Faunæ Eure et Loire, Lep. p. 24 (1867). Lang, Rhop. Eur. p. 153 (1884).  
*Apature* (part), Butler, Catal. Fabr. Lep. Brit. Mus. p. 49 (1869). Staudinger and Schätts, Exot. Schmett. p. 130 (1887).  
*Diademæ* (part), Butler, Catal. Fabr. Lep. B. M. p. 95 (1869). Staudinger and Schätts, *l.c.* p. 164 (1888).  
*Euripinæ*, Doherty, Journ. Asiatic Soc. Bengal, 1886, p. 109.  
*Apaturidi*, Scudder, Butt. E.U.S. i. p. 228 (1888).  
*Apaturinæ* (part), Kirby, Allen's Nat. Hist. Butterflies, p. 159 (1895).  
*Potamina*, Moore, Lep. Indica ii. p. 224 (1895).

### CHARACTERS OF THE GROUP POTAMINA.

IMAGO.—Robust. *Forewings* more or less elongate and triangular; apex obtuse, exterior margin sometimes slightly angulated below the apex; first and second sub-costal branches emitted before end of the cell, or, the second branch only is emitted beyond the end; the cell is open in all except in Dilipa. *Hindwings* short, either triangular and somewhat prolonged at the anal angle in the male, or subquadrate; exterior margin slightly scalloped or obtusely produced at end of the upper median veinlet; cell open in all except in Dilipa. Eyes naked or hairy.

CATERPILLAR.—Slug-shaped, with two processes on the head, and two on the anal segment.

CHRYSA LIS.—Somewhat boat-shaped, dorsum arched; head with two short projecting points.

EGG.—“Large. Few. Hardly as high as wide; ribs low, serrate, rather numerous, not produced at apex” (Doherty).

“This is a somewhat anomalous or aberrant tribe of the Nymphalinæ, showing, at least in its early stages, many marked affinities to the Satyrinæ. The egg, for instance, differs from those of all other Nymphalinæ with vertical ribs, in that these ribs are not more elevated in the upper than in the lower half; the caterpillar at birth is clothed like the Euplæinæ with comparatively short hairs, but all the papillæ upon the surface are of similar character and size; the mature caterpillar strikingly resembles the Satyrinæ in the clothing and general form of the body, and even generally, though not universally, in the bifurcation of the terminal segment, so characteristic of the Satyrinæ. The chrysalis, again, is unlike that of the Nymphalidi [Limenitina], to which the imago is certainly more nearly allied, in that it possesses no conspicuous discontinuous prominences such as tubercles, and on the other hand sometimes has a medio-dorsal carina like the Libythæinæ, sometimes a transverse abdominal carina like the Euplæinæ or some Melitæidi” (Scudder, Butt. E.U.S. i. 228).

HABITS OF THE IMAGO.—“In the imago the forewings are generally somewhat falcate, indicating a strong and vigorous flight; many of the species are particularly fond of elevated positions, and as a rule are accustomed to fly higher than most butterflies.” Constant, writing of the European species of *Apatura* (Catal. Lep. Saone et Loire, 31), says—“They seldom leave the grand routes, and the avenues of lofty forests. Far from seeking flowers like other diurnals, they are particularly fond of the juices which exude from wounded trees, excrement of every kind, and even putrefying carcasses of animals. One must hunt them in the morning, for it is only then that they lower themselves sufficiently in their flight to be taken by the net.” “They never meet,” says Haworth, “without a battle, flying upwards all the while and combating with each other as much as possible; after which they will frequently return to the identical sprigs from which they ascended.” The flight of *Potamis Ilia* is described by Meyer Dür, as resembling that of a bird of prey; it rises to the top of the highest trees, sweeps majestically in the air with occasional movements of the wings, allows itself to descend gradually, flaps its wings again as if spying out danger, and then flies fitfully backward and forward until it alights on the very spot of moist earth which it had left a few minutes before, and where it will finally become a sure prey to its dangerous persecutor, the entomologist” (Scudder, Butt. E.U.S. p. 228). “The typical species, *P. Iris*, the Purple Emperor butterfly of Europe, is amongst the most beautiful of butterflies, the males being furnished on the upperside with a resplendent purple or blue gloss, but which feature is not present in the females. Of this group *P. Ambica* is a worthy representative. The females of all the species are rare, the males are more commonly met with in

India, chiefly owing to their habit of frequenting moist places" (de Nicéville, l.c. ii. 49).

POLYMORPHISM AND MIMICRY.—In the genus Euripus (*i.e.* E. Halitherses), and in Sepsisa (*i.e.* S. Chandra) the females are polymorphic, as well as being mimics of certain species of Limnaine and Euplæine butterflies. The males of this same species of Euripus, and both the sexes of Hestina (H. nama) and of Parhestina (*P. persimilis*) also mimic certain species of Limnaine butterflies. Both sexes of Mimathyma (*M. Chevana*) are, on the upperside of the wings, a remarkable mimic of certain white-spotted-and-banded species of Athyma. In Rohana (*R. Parisatis*) the males of which are deep black above, the females are yellowish-ferruginous and generally resemble the species of the genus Ergolis—which they doubtless mimic. Herona is stated by Mr. de Nicéville (Journ. Bombay N.H.S. 1894, 6) to probably mimic certain species of Felderia, a genus of the Euthaliine group of Nymphalinæ.

KEY TO THE INDIAN GENERA OF THE POTAMINA.

- A. *First and second subcostal branches of forewing emitted before end of the cell.*
  - a. *Cell of forewing and hindwing open.*
    - a. *Eyes naked* . . . . . POTAMIS. MIMATHYMA. ROHANA.  
CHITORIA. HESTINA. HERONA.
    - b. *Eyes hairy* . . . . . NARSENGA. EULACURA.
- B. *First subcostal branch only of forewing emitted before end of cell.*
  - a. *Cell of forewing and hindwing open.*
    - a. *Eyes naked* . . . . . DRAVIRA. SEPHISA. EURIPUS.
    - b. *Eyes hairy* . . . . . PARHESTINA.
  - b. *Cell of forewing and hindwing closed.*
    - a. *Eyes hairy* . . . . . DILIPA.

Genus POTAMIS.

*Potamis*, Hübner, Tentamen, p. i. (1806). Scudder, Proc. Amer. A. and Sc. Boston, 1875, p. 256.  
*Apatura* (part), Fabricius, Illiger's Mag. vi. p. 280 (1807).  
*Apatura*, Leach, Edinb. Encyclop. p. 718 (1815). Ochseneimer, Schmett. Eur. iii. p. 19 (1816).  
 Samouelle, Ent. U. Comp. p. 239 (1819). Curtis, Brit. Ent. pl. 338 (1831). Duponchel, Pap. Fr. Suppl. p. 402 (1832). Westwood, Gen. D. Lep. p. 302 (1850). Kirby, Syn. Catal. D. Lep. p. 259 (1871). Crotch, Cistula Ent. i. p. 66 (1872). de Nicéville, Butt. of India, etc., ii. p. 48 (1886). Staudinger and Schätts, Lep. Exot. p. 165 (1888). Leech, Lep. China, etc., p. 153 (1892).  
*Apaturia*, Sodoffsk. Bull. Mosc. x. p. 81 (1837).  
*Apatura* (sect. 1), Felder, Neues Lep. p. 36 (1861).  
*Doxocopa* (part), Hübner, Verz. bek. Schmett, p. 49 (1816).  
*Eola* (part), Billberg, Enum. Ins. p. 78 (1820).

IMAGO.—Male. *Forewing* triangular, rather short and broad; costa very slightly arched, apex obtuse, exterior margin very slightly scalloped, posterior margin



nearly straight; costal vein extending to two-thirds the costal margin; first subcostal veinlet emitted at about one-fourth before the end of the cell, second close before the end of the cell, third at fully one-third beyond the end, fourth and fifth at two-thirds; discocellulars short, upper bent close to the subcostal, radials from the angle and lower end; cell open; middle median veinlet beyond the opposite discocellulars; submedian straight. *Hindwing* triangularly-ovate, produced posteriorly; exterior margin convex anteriorly, scalloped; abdominal margin broadly grooved; costal vein strongly arched from base of the subcostal; precostal vein excurved; second subcostal veinlet emitted at one-fifth from below base of the first, radial from close to lower subcostal; cell open. *Body* robust; thorax woolly; head hairy and tufted in front; palpi obliquely porrected, approximate at the tip, hairy above, densely scaled beneath, second joint projected half its length beyond the eyes, third joint about one-fifth of the second, pointed at the apex; antennæ with a rather long stout club; eyes naked.

CATERPILLAR.—Slug-shaped, surface minutely shagreened; armed with two lengthened erect divergent processes on the head and two short recumbent processes on the anal segment.

CHRYsalis.—Somewhat boat-shaped, compressed laterally; dorsum arched and carinated; head with two short divergent points.

EGG.—“Large. Few. Hardly as high as wide; ribs low, serrate, rather numerous, not produced at the apex.”

TYPE.—P. Iris.

**POTAMIS AMBICA** (Plate 191, fig. 1, 1a, b, c, d, e, ♂ ♀).

*Apatura Ambica*, Kollar \* in Hügel's Kaschmir, iv., pt. 2, p. 431, pl. 8, fig. 3, 4, ♂ (1844). Moore, Catal. Lep. Mus. E. I. Compy. i. p. 201 (1857); *id.* Proc. Zool. Soc. 1865, p. 765.

*Apatura Namouna*, Doubleday, Annals of Nat. Hist. 1845, p. 178, ♂. de Nicéville, Butt. of India, etc., ii. p. 50, pl. xx., fig. 91, ♂ (1886). Staudinger, Lep. Exot. pl. 55, ♂ (1885).

*Apatura Zanoa*, Hewitson, Exot. Butt. iv. *Ap.* pl. 1, fig. 7, 8, ♂ (1869)—(*variety*).

*Apatura Bhavana*, Moore, Trans. Ent. Soc. 1881, p. 307. Waterhouse's Aid, ii., pl. 127, f. 2 (1882)—(*variety*).

IMAGO. Male. Upperside rich brownish-black, resplendently glossed in certain lights with cobalt blue, except on the apex and the extreme outer margins of both wings. *Forewing* crossed by a discal white macular band composed of three (sometimes four) more or less regularly superposed upper discal decreasing spots, the upper one minute when present, and of three lower discal larger and more

\* Part 2 of vol. iv. of Hügel's Kaschmir is dated March, 1844, on its title page, and also on page 402—not “1848,” as erroneously quoted when referred to.

quadrate spots, which are more or less bordered by blue-glossed scales; before the apex are three white spots, the two upper disposed obliquely outward, and the lower, which is either minute, or sometimes obsolete, being disposed inward; the outer border generally has a more or less defined submarginal decreasing series of small whitish lunate spots; an indistinct black streak within the cell and another at its end. *Hindwing* crossed by a discal white band extending from the costa to the submedian vein, the edges of the band being bordered with blue-glossed scales; beyond is a submarginal row of more or less defined very small decreasing white spots, the anal angle being tipped with fulvous-red; a fulvous-red spot also on the costa before the apex. Underside pearly bluish-white. *Forewing* with the discal and submarginal spots pinkish-white, the discal series being inwardly-edged by a black sinuous line, the portion between the upper and middle median veinlets forming a broad black lunule, followed by a prominent outer discal fulvous-red transverse band bearing a large round black spot between the middle and lower median interspace, the outer edge of this band being sinuously black; extreme outer margin beyond the apical pearly patch also with a fulvous-red band, ending posteriorly in a series of pinkish-white lunules; subapical white spots slightly apparent; two black superposed dots within the cell and a slender sinuous streak at its end. *Hindwing* with the discal band pinkish-white, and inwardly-edged by a very slender black line; crossed by a prominent fulvous-red narrow outer discal band, the outer edge of the band being more or less sinuous and black, and bearing a small black spot between the middle and lower median interspace and another angular-spot above the anal angle; the extreme outer margin has also a narrow fulvous-red band, thus encompassing the broad submarginal pearly-white area. *Body* and palpi above brownish-black, beneath white; legs white; antennæ black, tipped with red; eyes reddish.

Female. Upperside dusky-brown. *Forewing* with the discal, subapical, and submarginal markings as in male, but all of a pale dull yellowish-white colour. *Hindwing* with a similar yellowish-white discal band and a submarginal row of spots, the latter being larger, more lunular, and also disposed further from the margin than in the male. Underside as in the male.

Expanse, ♂  $2\frac{4}{10}$  to 3, ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—Himalayas; Assam; Naga Hills; Chin Hills; Shan Hills; Siam.

VARIETY 1.—*Apatura Bhavana* (Plate 191, fig. 1, c). Male. Differs from typical specimens, on the upperside, in having only two small subapical white spots on the forewing, the exterior border of both wings having a submarginal unspotted fulvous-brown lunular fascia; and the brilliant blue gloss is sharply defined to the discal area on both wings.

Expanse, 3 inches.



VARIETY 2.—“Upperside with the purple gloss much duller and less distinctly defined, the white discal band more widely diffused both outwardly and inwardly by white powdering, especially on the hindwing. Forewing with an additional white spot above the upper discoidal nervule in prolongation of the discal band, and all the white spots are larger. Hindwing with the submarginal series of white dots expanded into a series of diffused and almost confluent white lunules. Underside with the discal rufous band wider, its outer edge sharply defined with black and less sinuous; in the forewing the additional white spot also appears; the black spots in the cell are much larger (confluent in one specimen), the black patch at the inner angle is larger and more diffused, and the whitish lunules on the rufous border are reduced to two. In the hindwing the black spot of the rufous band on the lower median interspace is entirely wanting. Expanse, 3.15 to 3.50 inches. Three males in Major Marshall's collection; two taken at Kutabul, in Kashmir, by Mrs. R. Bazett, at an elevation of 8200 feet, and one from Pangi, on the east border of Kashmir, taken by Mr. R. Ellis” (de Nicéville, l.c. p. 51).

VARIETY 3.—*Apatura Zanoa* (Plate 191, fig. d, e). Upperside brownish-black. Forewing showing only a very restricted lower discal portion, on a blue ground, of the medial band, and the three subapical spots. Hindwing showing only the white hairs, on a blue ground, of the lower part of the medial band, a small white costal spot before the apex, and the anal fulvous-red spot. Underside. Forewing with a broad outer marginal fulvous-red band marked posteriorly between the medians with two series of pinkish-white lunules, and inwardly bordered by black spots; cell streaks normal. Hindwing with only a broad marginal fulvous-red band, the inner edge of the band being sinuous; a slightly-defined subanal black-speckled spot, and an interrupted, slightly defined, slender fulvous-red, short submarginal line. Darjiling.

DISTRIBUTION.—“The males are found sparingly throughout the outer ranges of the Himalayas westward as far as Murree; they are not usually difficult to capture, as they come down to the wet sand on the borders of the hill streams to drink. There is a single female in the Indian Museum, Calcutta, from Masuri; also males from Buxa, Bhotan, and the Naga Hills. Major Marshall has taken it below Naini Tal in Kumaon, and Dr. E. R. Johnson at Shillong in the Khasia Hills in July. A variety [No. 2] occurs in the interior of the N.W. Himalayas, of which three males are in Major Marshall's collection, two having been taken at Kutabul, in Kashmir, in June, by Mrs. R. Bazett at an elevation of 8200 feet, and one from Pangi, on the east border of Kashmir, taken by Mr. R. Ellis” (de Nicéville, l.c. 51). Major H. B. Hellard took “a single specimen at Tain, in Kashmir, at the beginning of October” (MS. Notes). Mr. W. Doherty (J. A. S. Beng. 1886, 125) records its capture at “Loharkhet and Kapkot, on the Upper Sarju Valley, at 4000 to 5000 feet in N.W.



Kumaon, but scarce." We possess males from Kashmir, taken by Capt. Bayne Reed, from Nepal, taken by the late General G. Ramsay, and from Sikkim, by Mr. G. C. Dudgeon; also from the Upper Mekong, Shan States, taken by Mr. R. Roberts, C.E." "Males are common in Sikkim at low elevations up to about 4000 feet, but the females are quite rare. This is a very bold insect, and will return to its settling place after three or four attempts to catch it have been made; it has a strong, rather jerking flight, and is very restless" (Elwes, Tr. Ent. Soc. 1888, 339). Mr. de Nicéville (Sikkim Gazetteer, 1894, 134) says, "The males are not rare in Sikkim at low elevations throughout the summer, but the females are very scarce. Lieut. D. Thompson (Journ. Bombay N. H. Soc. 1890, 293) records its capture in the Chin-Lushai country during the expedition from the Chittagong side, in the cold weather of 1889-90. Mr. F. E. Dempster (l.c. 1890, 293) also took it at Lamtok in April, and Lieut. E. Y. Watson (J. Bomb. N. H. S. 1891, 36) captured six males on May 30th at Choungkwa, during the same Chin Expedition from the Burmese side.

CHINESE ALLIED SPECIES OF POTAMIS, ETC.—*Potamis Bieti* (Apatura Iris, var. Bieti, Oberthur, Bull. Soc. Ent. Fr. 1855, p. 136; Etudes Ent. xi. p. 18, pl. 3, fig. 15 (1886). Leech, Butt. China, etc., p. 170, pl. 15, f. 4, ♀ (1892). *Habitat.* W. & C. China.—*Potamis substituta* (Apatura substituta, Butler, Cist. Ent. i. p. 159 (1873). Pryer, Rhop. Nippon, p. 22, pl. 5, fig. 9, ♂ (1886). Leech, Butt. China, etc., p. 16 (1892). *Habitat.* N. China; Corea; Japan.—*Potamis Serarum* (Apatura Ilia, var. Serarum, Oberthur, Etud. Ent. xv. p. 11, pl. 1, fig. 8, ♂ (1891). Leech, Butt. China, etc., p. 163, pl. xv., fig. 8, ♂ (1892). *Habitat.* Yunan; C. China.—*Potamis Phædra* (Apatura Phædra, Leech, Butt. China, etc., p. 163, pl. xv., fig. 7, ♂ (1892). *Habitat.* W. & C. China.—*Potamis laverna* (Apatura laverna, Leech, Butt. China, etc., p. 164, pl. xv., fig. 6, ♂ (1892). *Habitat.* W. China.—*Potamis subcærulea* (Apatura subcærulea, Leech, Entom. 1891, Supp. p. 9; Butt. China, etc., p. 156, pl. xv., fig. 1, ♀ (1892). Grose Smith & Kirby, Rhop. Exot. p. 2, *Apat.* pl. 1, fig. 3, 5, ♀ (1892). *Habitat.* Omeishan, China.—*Potamis Pallas* (Apatura Pallas, Leech, Entom. 1890, p. 190; Butt. China, etc., p. 157, pl. xv., fig. 5, ♂ (1892). *Habitat.* China.

Genus LIMINA. Male. Wings short and broad. *Forewing* triangular; costa arched from the base, apex obtuse, exterior margin almost erect, uneven, posterior margin recurved; first subcostal branch emitted at one-sixth before end of the cell, second subcostal at an equal distance beyond the cell; discocellulars very outwardly oblique, short, radials from equal distances near subcostal; cell broad, short, open. *Hindwing* broadly obconical, abruptly convex at base of costa, exterior margin slightly convex, scalloped, anal angle rounded; subcostal branches and radial emitted close together; cell open. Antennal club short and thick; eyes naked. Type, *L. subalba*.—*Limina subalba* (Apatura subalba, Poujade, Ann. Soc. Ent. Fr.

1885, p. 211. Leech, Butt. of China, etc., p. 158, pl. xv., fig. 3, ♂ (1892). *Habitat.* W. China.

Genus MIMATHYMA.

IMAGO.—Male. *Forewing* more elongated and subtriangular than in typical *Potamis* (Iris), costal margin more convex, apex more obtuse; the costal vein much more convex from the base, the cell area broader and shorter. *Hindwing* comparatively longer, and not produced posteriorly; the apex and exterior margin being conspicuously convex; upper end of the cell area shorter. Antennæ more slender, and with a longer and narrower club; eyes naked. Sexes alike.

TYPE. *M. Chevana*.

The species of this genus are admirable mimics, on the upperside of both the wings, of the common white-spotted and banded *Athymas*.

**MIMATHYMA CHEVANA** (Plate 192, fig. 1, 1a, ♂).

*Athyma Chevana*, Moore, Proc. Zool. Soc. 1865, p. 763, pl. 41, fig. 1, ♂.

*Apatura Chevana*, de Nicéville, Butt. of India, etc., ii. p. 52 (1886). Staudinger, Lep. Exot. pl. 55, ♂ (1885).

IMAGO.—Male. Upperside olivescient brownish-black, with pale yellowish-white markings, glossed with reflected purple in freshly captured specimens. *Forewing* with a pale yellowish-white elongated streak extending from the base along the lower half of the cell, and there joining the lower of the two obliquely disposed upper discal spots; beyond is an outer discal, transverse, excurved series of spots, of which the two upper are oval, the next two much smaller and conical, and the three lower largest, followed by a submarginal recurved row of small spots, and then by a lower marginal row of much smaller lunate spots. *Hindwing* with a broad pale yellowish-white transverse subbasal band, a submarginal recurved row of broad dento-lunate spots, followed by a very obscurely-defined marginal slender lunular line; abdominal margin greyish. Underside. *Forewing* with the markings as on the upperside, dull white; the discal interspaces and extreme outer margin brownish-ochreous, the lower discal interspaces also slightly clouded with black, there being also two small blackish superposed-dots in middle of the cell, and a short streak at its end; the base of the costa and a triangular subapical patch being glossy nacreous bluish-white. *Hindwing* glossy nacreous bluish-white, the area of the two transverse bands, disposed as on upperside, whiter; also crossed by an outer discal slightly incurved narrow sinuous-edged bright ochreous band, which is joined at both ends to a similar marginal band of the same colour, thus encompassing the nacreous submar-



ginal area, the latter band being traversed by a slender white lunular line; between the middle and lower medians is a small black spot on the inner ochreous band. Body above blackish, banded with white; front spotted with white; palpi above black; palpi beneath, thorax and abdomen beneath, and legs, white; antennæ black; eyes reddish.

Female. Upperside as in the male, except that the markings are somewhat broader, and the wings entirely unglossed with blue. Underside also similar to the male.

Expanse, ♂  $2\frac{8}{10}$  to  $3\frac{2}{10}$ , ♀  $3\frac{2}{10}$  inches.

HABITAT.—Sikkim; Assam; Naga Hills; Upper Burma.

DISTRIBUTION.—“This is a rare species in Sikkim; the Indian Museum, Calcutta, possesses specimens from the Naga Hills and Sibsagar in Upper Assam” (de Nicéville, l.c. 52). Mr. Elwes says “this very beautiful species is seldom found in Sikkim at low elevations between April and October. The only female I have ever seen is in Otto Möller’s collection” (Tr. Ent. Soc. 1888, 340). We possess three males from the late Arthur Grote’s cabinet. A female was in Mr. H. Druce’s collection. Mr. de Nicéville (Sikkim Gazetteer, 1894, 134) also records it from Upper Burma.

MIMICRY.—This insect is a wonderful mimic, on the upperside of the wings, of the white spotted and banded group of *Athyma*—the species of the latter genus, which it apparently mimics, have often been seen by Mr. de Nicéville, in Sikkim, at rest with their wings widely expanded; it is therefore probable that *M. Chevana* assumes the same attitude.

CHINESE ALLIED SPECIES, ETC.—*Mimathyma Leechii* (*Apatura Chevana*, Leech, Butt. China, etc., p. 155, pl. 16, fig. 6, ♂ *nec* Moore).—Male. Upperside differs from *M. Chevana* in being of a blacker colour; both wings with the discal area suffused with deep brilliant blue in certain lights; all the markings of a pure white colour and of smaller size, the discoidal streak on forewing and both discal bands on the hindwing being also much narrower. Underside similar to *M. Chevana*, but the markings more sharply defined. On the forewing the lower discal dark interspaces are entirely deep black, and the chestnut-red portions broader. On the hindwing both the discal and marginal chestnut-red bands are broader, the nacreous submarginal area consequently being narrower. Female. Upperside as in the male, all the markings pure white. Expanse, ♂ 3, ♀  $3\frac{1}{2}$  inches. *Habitat.* Moupin, W. China; Omeishan, C. China.

GENUS BREMERIA.—Male. Wings broad. *Forewing* comparatively short, subtriangular; costa arched, apex rounded, exterior margin slightly scalloped, posterior angle rounded; cell short and very broad, open; first and second subcostals emitted before end of the cell. *Hindwing* broadly obconical; anterior margin much



arched at the base, thence straight to the apex; exterior margin very convex, scalloped, anal angle obtusely pointed; precostal vein bent outward at the middle; subcostals and radial well separated. Palpi ascending, hairy above, scaled below, apex somewhat slender; antennæ stout, with a lengthened spatulate club; eyes naked. *Type*.—B. Schrenckii.—*Bremeria Schrenckii* (Adolias Schrenckii, Menétries, Bull. Acad. Petr. (1859) p. 215. Schrenck's Reisen Amur Lande ii. Lep. p. 31, pl. 3, fig. 2, ♀ (1859). *Apatura Schrenckii*, Bremer, Lep. Ost-Siberia, p. 19 (1864). Leech, Butt. China, etc., p. 154. *Habitat*. Amur Land. Corea.

GENUS ATHYMODES.—Male. *Forewing* elongate, subtriangular; costa very slightly arched, apex obtuse, exterior margin oblique, uneven; posterior margin straight; first subcostal emitted at fully one-fourth before end of the cell, second at a short distance beyond the end of the cell; discocellulars short, upper outwardly oblique, middle concave, lower absent; cell open. *Hindwing* short, broadly ovate; exterior margin convex, slightly scalloped; precostal short, excurved; radial emitted from lower subcostal at some distance from its base. Palpi laxly clothed, apex short, broad, tip pointed; antennæ with a somewhat broad spatulate club; eyes naked. Allied to *Mimathyma*. *Type*.—A. Nycteis.—*Athymodes Nycteis* (*Athyma Nycteis*, Menétries, Bull. Acad. Petr. 1859, p. 215; Schrenck's Reisen Amur Lande, ii. p. 28, pl. 2, fig. 11, ♂ (1859). *Habitat*. Amur Land.—*Athymodes Cassiope* (*Athyma Cassiope*, Menétries, l.c. p. 214 (1859); Schrenck's Reisen, ii. p. 27, pl. 2, fig. 10 (1859). Leech, Butt. China, etc., p. 155 (1892). *Habitat*. Amur Land.

#### Genus CHITORIA.

IMAGO.—Male. *Forewing* triangular; costa very slightly arched, apex somewhat falcate and obtuse, exterior margin concave in the middle, edge almost even; first and second subcostal branches emitted before end of the cell; discocellulars bent inward close to subcostal, lower end acute, radials from angle and lower end; cell short, broad, open; median veinlets wide apart, lower median nearly opposite discocellulars. *Hindwing* short, triangular, produced posteriorly, exterior margin oblique, slightly uneven; cell open; precostal vein long, much curved. Body robust; palpi rather stout; antennæ slender and with a short broad spatular club; eyes naked.

TYPE.—C. sordida.

#### CHITORIA SORDIDA (Plate 192, fig. 2, 2a, b, ♂ ♀).

*Apatura sordida*, Moore, Proc. Zool. Soc. 1865, p. 765, pl. 41, fig. 2, ♂. de Nicéville, Butt. of India, etc., ii. p. 52 (1886).

*Apatura Phœacia*, Hewitson, Exot. Butt. iv. Ap. pl. 1, fig. 1, 2, ♀ (1869).

IMAGO.—Male. Upperside purplish fuliginous-brown. *Forewing* blackish at the apex; crossed by an outwardly-oblique discal white macular band composed of three spots beyond the cell and two lower spots disposed obliquely between the median veinlets, beyond is a small white discal spot above the upper median, and two small spots obliquely before the apex; above the posterior angle is a slightly-defined pale fuliginous-white short submarginal lunular fascia. *Hindwing* with a slightly-defined pale fuliginous-white blackish bordered submarginal lunular line; abdominal margin fringed with greyish-whitish hairs.

Underside pale brownish olivescens-grey, darker brown apically. *Forewing* with the discal and subapical white spots as on upperside, the lower discal spot having a small yellow-ringed black ocellus and two adjoining inner discal whitish lunules; a submarginal slightly-defined whitish lunular fascia. *Hindwing* with a transverse discal slightly-defined brown line inwardly bordering a whitish lunular fascia and contiguous outer dots, below which is a prominent ocellus between the lower median veinlets, this ocellus has a blue-speckled black pupil and yellow ring, and then a brown outer ring; a slightly-defined pale fuliginous-white submarginal and a marginal lunular line. *Body* above olivescens-brown; palpi and body beneath, forelegs, and femora greyish-white; fore tibia with a black streak; middle and hind tibiæ fuliginous-white; antennæ ochreous with black tip; eyes reddish.

Female. Upperside slightly paler than in the male; with a broad uninterrupted white band on the forewing, otherwise as in the male. Underside pale brownish olivescens-grey, the broad oblique band of forewing as on the upperside, otherwise as in the male.

Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{5}{10}$  to 3 inches.

HABITAT.—Sikkim.

DISTRIBUTION.—This is a very rare butterfly. We possess the type specimen. The late W. S. Atkinson obtained a male in Sikkim. There is a male and female in the Hewitsonian collection, and a female in Colonel C. Swinhoe's cabinet, obtained in Sikkim by Mr. Paul Mowis. "A male in Mr. Otto Möller's collection, was taken in Sikkim, in October, at a low elevation; one female is in Mr. A. V. Knyvett's collection, and a pair in Col. A. M. Lang's collection, all from Sikkim" (Butt. Ind. ii. 53). "This is one of the butterflies which appears to be found only in Sikkim. Mr. G. C. Dudgeon has three males and three females from Native Sikkim, taken in October and November" (de Nicéville, Sikkim Gazetteer, 1894, p. 134).

#### Genus DILIPA.

*Dilipa*, Moore, Catal. Lep. Mus. E. I. Compy. i. p. 201 (1857). de Nicéville, Butt. of India, etc., ii. p. 47 (1886). Staudinger and Schätts, Lep. Exot. p. 167 (1888).

IMAGO.—Male. *Forewing* subtriangular; costa regularly arched, apex narrow

and obtusely pointed, exterior margin almost even, oblique, with a slight tendency to angulation below the apex; posterior angle pointed; first subcostal veinlet emitted at one-eighth before end of the cell, second at a nearly equal distance beyond the cell, third at nearly one-half, and fourth and fifth at four-fifths; cell closed by a slender lower discocellular veinlet. *Hindwing* triangular, posteriorly produced; apex convex; exterior margin slightly scalloped; precostal vein acutely bent at its middle and with a short inner spur at the angle; cell closed by a slender lower discocellular veinlet. Palpi rather stout, apex thick; antennæ stout; eyes hairy. Sexes dissimilar.

TYPE.—D. Morgiana.

Differs from typical *Potamis* (Iris) in both wings having the exterior margin more even, the cell in both fore and hindwings being closed by a slender lower discocellular veinlet. The forewing is narrower at the apex, the posterior angle more pointed, and the second subcostal emitted beyond the cell. The palpi are stouter, and the eyes are hairy.

**DILIPA MORGIANA** (Plate 193, fig. 1, Ia, b, c, ♂ ♀).

*Apatura Morgiana*, Westwood, Genera of D. Lep. ii. p. 305, ♂ (1851).

*Dilipa Morgiana*, Moore, Catal. Lep. Mus. E. I. Compy. i. p. 201, pl. 6a, fig. 5, ♂ ♀ (1857). de Nicéville, Butt. of India, etc., ii. p. 48, pl. 20, fig. 86, ♂ (1886). Staudinger, Lep. Exot. pl. 55, ♂ (1885).

IMAGO.—Male. Upperside golden-black, the basal area thickly studded with lustrous golden scales; cilia alternately edged with white. *Forewing* crossed by an outwardly-oblique discal golden-yellow macular band and a shorter broken band beyond, both being edged with brighter and lustrous golden scales; the outer border below the apex also studded with dark golden-yellow scales; before the apex are three superposed pure white spots, the two lower being minute. *Hindwing* crossed by a very broad discal lustrous golden-yellow band, and a submarginal golden-yellow narrow lunular line, which latter is dilated anteriorly and posteriorly; the abdominal margin greyish-brown. Underside. *Forewing* paler, the black duller, the base yellowish-white, the apex pale olivescence-brown; subapical spots, a patch at the apex, and another patch at the posterior angle being lilacine-white. *Hindwing* pale olivescence-brown, olivescence and yellowish anteriorly across the disc, the base and abdominal border being washed with lilacine-white; two slightly-defined yellow dots, or a lunule, within the cell and a lunule at its end; a less distinct submarginal row of yellow dots. *Body* and palpi above golden-brown; palpi beneath and body beneath white; forelegs and femora white; middle and hind tibiæ pale olivescence-yellow; antennæ black, club red; eyes hairy, reddish.



Female. Upperside duller black, the base and outer area being tinged with olivescient-grey; markings similarly disposed, but the two discal bands on the *forewing* are dull lilacine-white, and the discal band on the *hindwing* narrower and also bright lilacine-white. Underside. *Forewing* as in the male. *Hindwing* with the discal fascia more defined and whiter than in male.

Expanse, ♂  $2\frac{4}{10}$  to 3, ♀ 3 inches.

HABITAT.—W. and E. Himalayas; Naga Hills; Shan Hills.

DISTRIBUTION.—This beautiful butterfly has a very wide range, but appears to be a rare species wherever it occurs. We possess males from Kashmir, taken by the late Capt. Bayne Reed, females from Kasauli, and males from Nepal, taken by the late General G. Ramsay, and others from the Khasia Hills, taken by Colonel Godwin Austen, who also took it in Shillong and Manipur. Capt. A. M. Lang, in his MS. notes on the Lepidoptera of the Simla and Kunawur districts, records the capture of this species at “Kundloo and Munglad in July.” “The Rev. J. Hocking took it in the Kangra Valley at 6000 feet, in August. Major Marshall found a single female in his house at Summer Hill, Simla, in August. Mr. de Nicéville took several males flying round the temples on the bare top of Tara Devi, opposite Simla, and one in the bed of the Simla river was taken by Mr. C. A. R. Crommelin; there are males in the Indian Museum, Calcutta, from Masuri, taken by Col. Buckley, four or five were sent from Nepal by Dr. Scully, and there are specimens from the Naga Hills” (Butt. Ind. ii. 48). “Mr. A. V. Knyvett’s collectors have obtained this species in Bhotan. I have not heard of its being captured in Sikkim, though it certainly occurs there. It has a very wide range from the West to the East end of the Himalayas, and through the Naga Hills and Shan Hills to the Black river in Upper Tonkin” (de Nicéville, Sikkim Gazetteer, 1894, p. 134). Dr. N. Manders (Tr. Ent. Soc. 1890, 521), in his notes on the Lepidoptera of the Shan States, Burma, records two males taken at “Fort Stedman in July.”

CHINESE ALLIED SPECIES OF DILIPA.—*Dilipa fenestra* (Vanessa fenestra, Leech, Entom. 1891, Suppl. p. 26; Butt. of China, etc., p. 165, pl. 14, fig. 2, ♀ (1892). *Syn.* *Apatura Chrysus*, Oberthur, Etud. Ent. xv. p. 10, pl. 1, fig. 6, ♂ (1891). *Habitat.* Omeishan, W. China.

ALLIED CHINESE GENUS.—GENUS SINCANA. Allied to Dilipa. Male. *Forewing* more prolonged, broader and more convex at the apex, the exterior margin deeply concave in the middle; first and second subcostal branches emitted before end of the cell; the cell open. *Hindwing* more produced posteriorly; the cell open; middle and upper median much shorter. Palpi much smaller; antennal club shorter and spatular; eyes naked. *Type.*—*S. fulva*.—*Sincana fulva* (*Apatura fulva*, Leech, Entom. 1891, Suppl. p. 30; Butt. China, etc., p. 158, pl. 15, fig. 2, ♂ (1892). Grose-Smith and Kirby, Rhop. Exot. *Ap.* pl. fig. 5, 6, ♂ (1892). *Habitat.* W. China.

—*Sincana fasciola* (*Apatura fasciola*, Leech, Entom. 1890, p. 33; Butt. China, etc., p. 159, pl. 16, fig. 2, ♂ (1892). Grose-Smith and Kirby, Rhop. Exot. Ap. pl. fig. 1, 2, ♀ (1892). *Habitat.* C. and W. China.

### Genus DRAVIRA.

IMAGO.—Male. *Forewing* triangular; costa slightly arched, apex produced and obtusely convex, exterior margin oblique and concave in the middle; first subcostal branch only emitted before end of the cell, second branch at some distance beyond the end; cell open. *Hindwing* triangular, produced posteriorly, exterior margin slightly convex, uneven; cell open.

TYPE.—D. Ulupi.

#### DRAVIRA ULUPI. (Plate 193, fig. 2, 2a, ♂).

*Potamis (Apatura) Ulupi*, Doherty, Journ. Asiatic Soc. Bengal, 1889, p. 125, pl. x. fig. 2, ♂.

IMAGO.—“Male. Upperside. *Forewing* black, quite unglossed, markings light ochreous-fulvous, the base, costa, hindmargin, and a few submarginal touches diffused rufous-brown; two small light ochreous spots above the radials, the upper largest; an obliquely-transverse fulvous macular band from the subcostal vein to the lower angle, the first three spots being elongate-quadrate, separated only by the veins, the last with a pale space beyond it, the fourth well separated from the first three, outwardly incised, the fifth subquadrate, diffused, close to the outer margin, with a large black spot partly enclosed by its inner borders, the sixth slender, lying along the margin of the interno-median space; another transverse band from the upper edge of the cell to the submedian vein sloping obliquely outwards, and divided into three parts by the median vein and its lower branch, occupying the middle half of the cell (with a diffused streak at the lower angle, almost separated from it by an oblique black crescent), the basal half of the lower median and half of the interno-median space. *Hindwing* ochreous-fulvous, the abdominal margin as far as the lower, and in the middle of the disc the upper median branch, covered with diffused black scales, the apical part also sordid, the veins dark, the marginal line and a broader submarginal line thickened at the crossing of the veins, within which is a line of five partly-united dark spots diminishing anally to mere streaks; a large and distinct black spot discally in the lower median space. Underside. *Forewing* paler tawny, the black spaces above replaced by dusky fulvous ones, except a large black spot in the lower median space, and a diffused blackish one below it, near the lower angle of the wing; the two subapical spots, and a touch on the costa beyond the cell, lilac-white. *Hindwing* light fulvous, the base slightly

glossed, pale; a large ocellus pupilled with purple in the lower median space; a lustrous lilac-white band across the wing discally, bordered inwardly by a darker ferruginous band broadest near the costa; a submarginal ferruginous line, within which are a few obscure lilac-white touches, between which and the lilac band lie four good-sized lilac-white spots and some ferruginous touches" (Doherty, l.c.).

EXpanse, ♂  $2\frac{5}{10}$  inches.

HABITAT.—Upper Assam.

DISTRIBUTION.—Mr. W. Doherty records "one male taken by Lieut. E. Hartert on the Dikrang near Sadiya, another by me at Kobong between Sadiya and Margherita.\* One or two others were seen. In its rather weak flight it somewhat resembles *Eulaceura osteria*" (J. A. S. Beng. 1889, p. 125).

Our illustrations of this species on Plate 193, figs. 2, 2a are reproduced from Mr. Doherty's figures above referred to.

#### Genus NARSENGA.

Wings small, short. Male. *Forewing* comparatively narrower, somewhat longer, and more regularly subtriangular than in *Rohana*, the exterior margin more acutely angular below the apex; first and second subcostals emitted before end of the cell; cell open. *Hindwing* broader, less prolonged posteriorly, exterior margin more convex; cell open; antennæ shorter; eyes hairy.

Sexes similarly coloured and marked.

TYPE.—N. Parvata.

#### NARSENGA PARVATA (Plate 194, fig. 1, 1a, ♂).

*Apatura Parvata*, Moore, Catal. Lep. Mus. E. I. Compy. i. p. 202, pl. 6, a, fig. 6, ♂ (1857). de Nicéville, Butt. of India, etc., ii. p. 53 (1886).

IMAGO.—Male. Upperside dark ferruginous olivescence-brown, darkest at the base, and bright about the cell and exterior margin. *Forewing* with a paler ferruginous ringed auriform blackish mark at end of the cell, preceded within the cell by two obliquely superposed small round spots; a similar spot also below the cell; beyond is a transverse inner-discal angulated series of pale yellowish-ferruginous lunules, followed by a subapical superposed series of five pure white dots on a blackish ground, and a small slightly-defined ferruginous-ringed ocellate spot situated in the interspace between the middle and lower median veinlet, beyond which is a pale-bordered blackish submarginal lunular fascia and then a narrower marginal line. *Hindwing* with a slightly-defined pale-edged lunular mark within

\* One of these specimens was sent by Mr. Doherty, from Margherita, to Mr. Elwes.



the cell; a transverse discal pale ferruginous-yellow straight band decreasing in width from the costa to the submedian vein, followed by an outer-discal dusky clouded fascia and a subanal ferruginous-ringed ocellate spot, beyond which is a pale ferruginous-bordered blackish submarginal lunular fascia and a narrow marginal line. Underside pale ferruginous, brightest on the forewing; with markings similarly disposed as on the upperside. *Forewing* with the cell marks formed of black rings; the transverse discal lunules being white and their inner edge defined by black; subapical lilacine-white dots and lower ocelloid black spot, below which latter is a contiguous black patch; the submarginal fascia and marginal line being inter-bordered by lilacine-white. *Hindwing* with a blackish dot and lunular mark at end of the cell; the discal fascia lilacine-white, the submarginal lunular fascia and marginal line also inter-bordered by lilacine-white, and the subanal ocellus centred with white. *Body* above olivescence-brown; palpi above black; palpi beneath, body and femora beneath whitish; legs above pale ferruginous; antennæ black, club tipped with red; eyes red, hairy.

Female. "Duller coloured than the male, the discal series of pale ferruginous spots on the forewing and discal line on the hindwing absent, but replaced by an irregular ferruginous diffused band, which is inwardly sharply defined. *Forewing* with three subapical white dots only; the anal ocellus on the *hindwing* smaller and blind. Underside marked much as above, but paler, the discal band outwardly marked with lilac, and a small patch of that colour below the apex of the forewing, the white dots larger" (de Nicéville, l.c.).

Expanse,  $1\frac{8}{10}$  to 2 inches.

HABITAT.—Sikkim; Bhotan; Khasia Hills.

DISTRIBUTION.—"This is also a rare species; the Indian Museum, Calcutta, has specimens from Sikkim, and Buxa, Bhotan" (de Nicéville, l.c. 53). Mr. Elwes (Tr. Ent. Soc. 1888, 340) says it is "very rare in Sikkim, and where I do not know its habitat or season." Mr. de Nicéville (Sikkim Gazetteer, 1894, p. 135) states that it "has been obtained by Mr. T. A. Hauxwell at about 4000 feet elevation, in October, below the Station of Darjiling, but is very rare in Sikkim, far commoner at Daling at 5000 feet, and in Bhotan." Colonel C. Swinhoe possesses several males, taken in the Khasia Hills.

#### Genus ROHANA.

*Rohana*, Moore, Lep. of Ceylon, i. p. 27 (1880). Semper, Reisen Phil. Lep. p. 81 (1887).

*Apatura* (part), de Nicéville, Butt. India, etc., ii. p. 48 (1886). Staudinger and Schätts, Lep. Exot. p. 165 (1888).

IMAGO.—Wings small. Male. *Forewing* short and broad, subtriangular;

exterior margin slightly uneven and angular below the apex; first subcostal veinlet emitted at one-fourth before end of the cell, the second being emitted either at the end or at a little distance beyond the end. Sometimes, but very rarely, the second is emitted immediately before the end of the cell,\* third at two-fifths from the cell, fourth and fifth at four-fifths; discocellulars short, angled close to subcostal, radials from upper angle and lower end; cell short, broad, open; lower median emitted from opposite discocellulars, the two upper medians at equal distance beyond; submedian straight. *Hindwing* very short, triangular, prolonged posteriorly, exterior margin slightly uneven; costal vein much arched; precostal vein short and abruptly bent outward; subcostals and radial contiguous at their base but well divergent; cell open. *Body* stout; palpi porrect, tip pointed, squamose beneath; antennæ slender; eyes naked. Sexes dissimilar.

CATERPILLAR.—Slug-shaped, long, slender, smooth; head small and surmounted by two long spined-processes projecting in front; anal segment with two shorter naked pointed processes.

CHRYsalis.—Compressed; with a high pointed dorsal prominence on basal segment of abdomen, from which a sharp ridge extends to the tail, a lesser pointed prominence on middle of thorax; head with two short points in front.

TYPE.—*R. Parisatis*.

MIMICRY.—The males on the upperside of both wings of *R. Parisatis* and *Camiba* are uniformly deep purplish-black, but the females are yellowish-ferruginous, and generally resemble species of the genus *Ergolis*, of the Group *Eurytelina*.

#### ROHANA PARISATIS (Plate 194, fig. 2, 2a, b, c, ♂ ♀).

*Apatura Parisatis*, Westwood, Gen. D. Lep. ii. p. 305 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 202 (1857). de Nicéville, Butt. of India, etc., ii. p. 54, pl. xx., fig 92, ♂ ♀ (1886). Staudinger, Lep. Exot. pl. 55, ♂ ♀ (1885).

*Rohana Parisatis*, Moore, Lep. of Ceylon, i. p. 27 (1880).

IMAGO.—Male. Upperside. Both wings uniformly purplish-black. Cilia alternated with white. *Forewing* with a minute white costal dot before the apex. *Hindwing* without markings. Underside dark purplish ferruginous-brown, the basal area brighter ferruginous-red, the discal area longitudinally clouded with black and with a slightly-defined ocellate spot on the lower median interspace; two small black rings in each cell, and an auriform mark at end of each cell. Both wings

\* In thirty males of *R. Parisatis* under examination, sixteen had the second subcostal emitted beyond end of the cell, twelve at the end, and two only before the end. Mr. W. Doherty (J. A. S. Bengal, 1886, 123) says that "this genus is allied to *Precis*," and arranges it near that genus and *Junonia*. It has, however, no affinity with either of those genera, nor with the group in which they occur.

crossed by a slightly-defined discal sinuous black line outwardly edged by ill-defined lilacine-white lunules, these lunules being less apparent on the hindwing; a submarginal slightly-defined catenulated row of lilacine-whitish rings outwardly edged by a blackish line ending towards the apex of forewing in two more prominent lilacine-white small apical patches, before which latter are two minute white subapical dots. *Hindwing* with a small subanal black ocellus centred with white and ringed with chestnut-red. *Body* above purplish-black; body and palpi beneath, and legs ferruginous-brown; antennæ black above, red beneath.

Female. *Forewing* angulated below the apex. *Hindwing* broader and shorter, more convex externally. Upperside obscure yellowish-ferruginous. Both wings with two dusky brown spots in the cell, an auriform mark at its end, a transverse inner discal angular fascia, a less defined outer discal clouded fascia traversed by a row of small blackish spots, the three upper of which on the forewing are white-centred, and the lowest on the hindwing the largest and ocellate; beyond is an inner submarginal dusky macular fascia and an outer line. Underside brighter yellowish-ferruginous, marked as in the male.

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

HABITAT.—Kumaon; Sikkim; Assam; Silhet; Khasia and Naga Hills; Burma; Tenasserim; Shan States; Tonkin; Hong Kong.

DISTRIBUTION.—According to Mr. W. Doherty (J. A. S. Bengal, 1886, p. 123), it was observed by him at Jhillaghat, on the Eastern border of Kumaon. "Males are frequently seen in Sikkim at elevations of 5000 feet, and below, the female being very scarce. The Indian Museum, Calcutta, has specimens from Silhet, Sibsagar, Assam, the Naga Hills, and Upper Tenasserim" (de Nicéville, Butt. Ind. ii. 54). Mr. Elwes (Tr. Ent. Soc. 1888, 340) says it "occurs in Sikkim up to 6000 feet, from April to November." Colonel C. Swinhoe has received several specimens of both sexes from the Khasia Hills. Lieutenant D. Thomson (J. Bomb. N. H. S. 1890, 295) records its capture in the Chin-Lushai country during the expedition from the Chittagong side in the cold weather of 1889-90. Lieutenant E. Y. Watson (J. Bomb. N. H. S. 1891, 36) also records "a single male taken at Tiling in December, during the same Chin Expedition, from the Burmese side." Major C. H. E. Adamson (List Burm. Butt. 13) "captured a number of this species in Tenasserim, on the road between Kaukarit and Myawaddee, on April 27th, but were not seen elsewhere." "Two males are recorded from Ponselai, and a pair from Tavoy" (J. A. S. Beng. 1887, 424). Dr. N. Manders in his Notes on the Lepidoptera of the Shan States, Burma (Tr. Ent. Soc. 1890, 521), says it is "not uncommon at 1000 feet, but I have never seen it above 3000 feet." Mr. de Nicéville, in his recent list of the species of this genus (J. Bombay N. H. S. 1895, p. 262) records it as "also occurring in the Malay Peninsula and Upper Tonkin." Mr. J. J. Walker, R.N., took specimens in



Hong Kong, which I have examined, and remarks (Tr. Ent. Soc. Lond. 1895, p. 452) "that it is not uncommon in the 'Happy Valley,' in March, April, and May, the male alighting to sun himself, with expanded wings, on the outer leaves of low trees, the female being more partial to shady places."

**ROHANA CAMIBA** (Plate 194, fig. 3, larva and pupa).

*Rohana Camiba*, Moore, Lep. of Ceylon, i. p. 27, pl. 14, fig. 1, 1a, b, c, ♂ ♀: larva and pupa (1880).  
*Apatura Camiba*, de Nicéville, Butt. of Ind. etc., ii. p. 54 (1886).

IMAGO.—Male. Upperside uniformly purplish-black; cilia alternated with white. *Forewing* with three minute white superposed subapical dots. Underside similarly marked as in *R. Parisatis*. *Forewing* with four superposed subapical white dots.

Female. Upperside similar to *R. Parisatis*, but with the markings somewhat more sharply defined. *Forewing* with a series of five superposed subapical white dots. *Hindwing* with the outer discal clouded dusky fascia narrower, and more sinuous. Underside similarly marked to *R. Parisatis*. *Forewing* with five superposed subapical white dots.

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

CATERPILLAR.—Smooth; head small and surmounted by two black spined-processes projecting in front; anal segment with two shorter green naked pointed processes; colour pale yellowish-green with a dark green dorsal and two lateral bands; front of head black streaked. Feeds on *Celtis lycodoxylon*. (Described from Sir W. Gregory's Ceylon drawing.)

CHRYsalis.—Green; compressed; with a pointed angle on middle of thorax and on basal segment of abdomen; the head attenuated and with two short points in front.

HABITAT.—Ceylon; S. India.

The late Mr. S. N. Ward also reared the larva of this insect in Canara, and in his drawing (see Plate 194, fig. 3) it is represented as having a subdorsal longitudinal series of small bluish patches and a lower lateral greenish band, the head in front being bluish-white, and the processes blue-black tipped with brown. Messrs. J. Davidson and E. H. Aitken, in the Notes on larvæ reared in Karwar, North Canara (Journ. Bombay Nat. Hist. Soc. 1890, p. 271), say, "We got this in September, October, and November, on a species of *Celtis*. It has much the aspect of the caterpillars of the Satyrinæ, and appears to have similar habits, resting by day on the underside of a leaf, and feeding by night. The larva is long, slender, thickest in the middle; head small, armed with two long, straight, much branched spines, pointed forward; a pair of smooth caudal spines. Colour pale yellow on the back, with a medial row of green spots; green on the sides with a narrow

yellow line; head and horns black. Pupa compressed, with a high, pointed, dorsal prominence at the junction of thorax and abdomen, from which a sharp ridge runs to the tail; suspended by the tail, but curving round to an almost horizontal position; pale green."

DISTRIBUTION.—In Ceylon this butterfly is "common on forest ground in the hills about 5000 feet near Newera Eliya. Frequently seen basking in the road" (Hutchison, Lep. Ceyl. i. p. 27). The late Mr. S. N. Ward reared this insect in Canara, from whose collection we possess specimens of both sexes, as well as his drawing of the larva. Mr. G. F. Hampson obtained it on the "Nilgiris, from 3000 to 6000 feet, where the male is not common, the female very rare" (J. A. S. Bengal, 1888, 352). "The Indian Museum, Calcutta, possesses specimens from Ootacamund taken by Mr. Hampson, and from Pimerd, North Travancore, taken by Mr. W. Doherty at 2000 feet" (Butt. Ind. ii. 55). Mr. H. S. Ferguson (J. Bomb. N. H. Soc. 1891, 8) also records it from Pimerd at 2400 feet.

Of this species our illustration on plate 194, fig. 3, represents the larva and pupa reproduced from the late Mr. S. N. Ward's drawing from larvæ reared in Canara, S. India.

INDO-MALAYAN SPECIES OF ROHANA.—*Rohana Sumatrana* (Apatura Sumatrana, Staudinger. Snellen, Mid. Sumatra Lep. p. 19, pl. 3, fig 1, 2, ♂ (1892). *Habitat.* Sumatra.—*Rohana Artaxes* (Apatura (Rohana) Artaxes, de Nicéville, Journ. Bombay N. H. Soc. 1895, p. 261, pl. N. fig. 3, 4, ♂ ♀.) *Habitat.* N.E. Sumatra.—*Rohana Nakula* (Apatura Nakula, Moore, Catal. Lep. Mus. E. I. Compy. i. p. 203, ♀ (1857). de Nicéville, J. Bombay N. H. S. 1895, p. 262, pl. N. fig. 5, 6, ♂ ♀. *Habitat.* Java.—*Rohana Rana* (Apatura Rana, Staudinger, Lep. Palawan, p. 80. *Habitat.* Palawan.—*Rohana Rhea* (Apatura Rhea, Felder, Wien. Ent. Monats. 1863, p. 120; Reise Novara, Lep. iii. pl. 58, fig. 3, ♀ (1867). Semper, Reisen Phil. Lep. p. 82, pl. 15, fig. 2, 3 (1887). *Habitat.* Philippines.

#### Genus EULACEURA.

*Eulaceura*, Butler, Proc. Zool. Soc. 1871, p. 726.

*Eulacura*, Butler, Trans. Linn. Soc. Zool. 1877, p. 541. Distant, Rhop. Malayana, p. 99 (1882). de Nicéville, Butt. of India, etc., ii. p. 55 (1886). Staudinger and Schätts, Lep. Exot. p. 167 (1888).

IMAGO.—Male. *Forewing* triangular, costa slightly arched; apex prolonged, rounded and falcate; exterior margin oblique and very concave in the middle, almost even; posterior margin short; first and second subcostals emitted close together before the end of the cell; discocellulars short, angled close to subcostal, radials from angle and the lower end; cell open; median veinlets very wide apart. *Hind-*

*wing* short, triangularly ovate; apex and anal angle rounded, exterior margin slightly uneven; subcostals and radial emitted close together; cell open. *Body* moderately robust; antennæ long, slender, with a lengthened slender club; eyes hairy; anal claspers of male elongated, terminating at about half the length in a narrow perpendicularly-curved superiorly-horny hook. Abdomen of female with two raised protuberances on underside of the penultimate anal segment.

TYPE.—E. Osteria.

**EULACEURA OSTERIA** (Plate 195, fig. 1, 1a, b, ♂ ♀).

*Apatura Osteria*, Westwood, Genera of D. Lep. p. 305 (1850).

*Eulaceura Osteria*, Butler, Proc. Zool. Soc. 1871, p. 726.

*Eulacura Osteria*, Butler, Trans. Linn. Soc. Zool. 1877, p. 541. Distant, Rhop. Malayana, p. 100, pl. xii. fig. 5, 6, ♂ ♀ (1882). de Nicéville, Butt. of India, etc., ii. p. 55 (1886). Staudinger, Lep. Exot. pl. 55, ♂ (1885).

IMAGO.—Male. Upperside dark glossy purplish-brown. *Forewing* with a transverse lower discal inwardly-oblique band, this band being composed of a series of five purplish-white spots, the uppermost smallest (but sometimes absent) being situated above the upper median veinlet; an obscure submarginal ocelloid spot between the middle and lower median veinlet slightly visible. *Hindwing* crossed by a continuous but broader purplish-white discal band, the abdominal margin being greyish white; a submarginal row of obscure paler brown lunules, a black ocelloid subanal spot between the lower medians, and an obscure marginal paler brown line. Underside glossy pale purplish-white. Both wings crossed by a slightly-defined slender pale brown irregular discal line, which also inwardly borders the slightly apparent discal white band. *Forewing* also with a slightly-defined small pale brown spot within the cell, a slender bar at its end, a submarginal zigzag fascia, and a marginal line; a small outer pale ochreous ocelloid spot with black centre and outer brown ring situated between the lower medians. *Hindwing* also with a pale brown upper submarginal zigzag fascia, an entire marginal line, and a subanal pale ochreous ocelloid spot with black centre and brown outer ring situated between the lower medians. *Body* and palpi above brown; palpi and body beneath, and legs white; antennæ blackish; eyes reddish, hairy.

Female. Upperside pale umber-brown. *Forewing* with two blackish streaks crossing the cell; a sharply-defined transverse discal angulated series of outwardly diffused broad whitish lunules, which merge into a less defined outer discal series, and is followed by a submarginal series of slender whitish lunules; a small black ocellated submarginal spot between the lower medians. *Hindwing* crossed by a similar but less defined inner and outer discal whitish lunular fascia, followed by a submarginal series of more sharply-defined lunules, the upper ones of which



are outwardly-angled; an ocellated black submarginal spot between the medians. Underside similar to the male, except that the transverse discal white fascia is narrower.

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

HABITAT.—Tenasserim; Malay Peninsula.

DISTRIBUTION.—Mr. L. de Nicéville, in a letter dated December 17th, 1894, writes me that he has received specimens of this insect from Tenasserim.

Mr. W. L. Distant (Rhop. Malayana, p. 101) records it from the Malay Peninsula; Province Wellesley, Malacca, Singapore, Java, and Borneo.

### Genus HERONA.

*Herona*, Doubleday, Gen. D. Lep. pl. 41 (1848). Westwood, *id.* ii. p. 293 (1850). de Nicéville, Butt. of India, etc., ii. p. 60 (1886). Staudinger and Schätts, Lep. Exot. p. 134 (1887).

IMAGO.—Male. *Forewing* elongated, triangular, costa regularly arched, apex obtuse, exterior margin oblique, almost even, convexly-angular below the apex, posterior margin nearly straight; first subcostal branch emitted at one-fifth and second at a short distance before end of the cell, third at nearly one-third beyond, and fourth and fifth at one-third from the apex; discocellulars short, radials from angle close to subcostal and lower end; cell open; lower and middle median widely apart, upper much curved. *Hindwing* short, triangularly-ovate, base of costa much arched, exterior margin obliquely-convex, broadly scalloped; precostal vein bent outward near tip; subcostals and radial widely divergent; cell open. *Body* moderately robust; palpi obliquely porrected, approximate at end, tips pointed; antennæ long, slender, club long and slender; eyes naked.

TYPE.—H. Marathus.

### HERONA MARATHUS (Plate 195, fig. 2, 2a, b, ♂ ♀).

*Herona Marathus*, Doubleday, Gen. D. Lep. pl. 41, fig. 3, ♂ (1848); Westwood, *id.* p. 294 (1850). de Nicéville, Butt. of India, etc., ii. p. 61 (1886). Staudinger, Lep. Exot. pl. 48, ♀ (1885). Adamson, List Burmese Butt. p. 13 (1889).

IMAGO.—Male. Upperside fulvescent-black; with fulvous markings. *Forewing* with the costal border basally fulvous; an outwardly oblique fulvous bar across end of the cell, an elongate spot between the middle and lower median veinlets, and a narrower longer streak from the base below the median, beyond which is an outwardly oblique upper discal macular band, followed by a submarginal irregular band, of which latter the anterior end before the apex is broad and bears a triangular

white spot, the middle portion being slender, its lower portion broad, and joined to a short streak at the posterior angle. *Hindwing* crossed by a broad fulvous upper discal band extending from below the base to near the apex, and a lower discal band, both being partly united before the apex, the latter band bearing a small black-speckled spot between the middle and lower medians, followed by a slender lower submarginal line which extends from the anal angle only to the upper median veinlet, where it curves upward and joins the lower discal band, and beyond by a slender marginal line extending to the apex; the abdominal margin pale duller fulvous. Underside dusky olivaceous brownish-fulvous, paler externally; with similar disposed markings of the upperside, but much less defined, especially on the hindwing, and all suffused with chalybeate lilacine-white. *Forewing* also with a white streak within upper base of the cell, a rounded upper subapical spot and a more prominent lower subapical streak, a small blackish outer patch between the lower medians, and another patch beneath it. *Hindwing* crossed by a slender dark fulvous inner discal sinuous line, before which is a small dark fulvous spot within the cell; a small white spot inwardly edged with black scales between the middle and lower medians. *Body* and palpi above fulvescent-brown, white beneath; legs above fulvous, white beneath; antennæ black, club tipped with fulvous.

Female. Upperside dark fulvescent-brown; markings as on upperside, but somewhat narrower, and of a much paler fulvous-yellow. Underside also fulvescent-brown, all the markings as in the male, but paler and more conspicuously defined.

Expanse, ♂  $2\frac{6}{10}$  to  $3\frac{2}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

HABITAT.—Sikkim; Bhotan, Assam; Khasia Hills, Upper Burma.

DISTRIBUTION.—We possess specimens from Nepal taken by the late General G. Ramsay; from Sikkim and Bhotan, taken by Mr. G. C. Dudgeon; and from Assam. "It is not an uncommon species in Sikkim, where I have taken it in October at low elevations, between 3000 and 4000 feet. It has the habit, when disturbed, of settling head downwards with closed wings on the trunk of a tree, in which position it is particularly difficult to catch with a butterfly net. Like many other butterflies of this Sub-family, it is very fond of over-ripe fruit" (de Nicéville, Sikkim Gazetteer, 1894, 135). Mr. H. J. Elwes (Tr. Ent. Soc. 1888, 341) says it is "not common in Sikkim at 3000 to 4000 feet during and after the rains. A specimen from the East side of the Tista, taken in March, is much smaller and paler in colour." Major C. H. E. Adamson (List Butt. of Burma, 13) records it (and we have identified specimens as being this species) as "not uncommon near Bhamo, Upper Burma, where it settles with closed wings on the trunks of trees in shady places, in September and October." Dr. N. Manders, in his Notes on the Lepidoptera of the Shan States (Tr. Ent. Soc. 1890, 521) records "one specimen taken at Fort Stedman in August."

**HERONA ANGUSTATA** (Plate 196, fig. 1, 1a, ♀).

*Herona angustata*, Moore, Proc. Zool. Soc. 1878, p. 829, ♀. de Nicéville, Butt. of India, etc., ii. p. 62 (1886). Adamson, List. Burmese Butt. p. 13 (1889).

IMAGO.—Male. Upperside similar to *H. Marathus*, but with the fulvous macular bands much narrower.

Female. Upperside deeper black than *H. Marathus*, the macular bands narrower, and all of a pale ochreous colour, except the two subapical spots on the forewing, which are white. Underside of a paler olivescence-brown, the bands also all paler.

Expanse,  $2\frac{2}{10}$  to 3 inches.

HABITAT.—Lower Burma, Tenasserim.

DISTRIBUTION.—The type specimens were taken at Moolai at 3000 to 6000 feet in Upper Tenasserim. Major C. H. E. Adamson (List. Butt. Burm. 13) records this species from Lower Burma (we have identified a specimen taken by him in Moulmein in October). Its habits being similar to *H. Marathus*. Mr. L. de Nicéville (Butt. Ind. ii. 62) records five specimens in Major Marshall's collection, a female taken in October in Arakan by Captain Adamson, a male from Gawlai in Upper Tenasserim in September, and both sexes taken by Captain C. T. Bingham in the Upper Thoungyeen forests in Upper Tenasserim. We possess a female taken by Captain Bingham on January 11th, 1882. A pair from Tavoy is recorded by Mr. H. J. Elwes (J. A. S. Beng. 1887, 421).

**HERONA ANDAMANA** (Plate 196, fig. 2, 2a, b, ♂ ♀).

*Herona Andamana*, Moore, Proc. Zool. Soc. 1877, p. 585. de Nicéville, Butt. of India, ii. p. 62, pl. 18, fig. 76, ♀ (1886).

*Herona Seneca*, Staudinger, Exot. Schmett. p. 138 (1886).

IMAGO.—Male. Upperside similar to *H. Marathus*, the ground colour blacker, but with all the markings paler. *Forewing* with the markings narrower, the outwardly oblique upper discal streaks elongated and pointed at their end. *Hindwing* with both bands narrower and macular, the submarginal lower line somewhat broader. Underside with the ground colour somewhat darker than in *H. Marathus*, markings as on upperside, but more distinctly suffused with chalybeate lilacine-white.

Female. Upperside blacker than in *H. Marathus*; markings as in the male, but all of a white colour. *Forewing* with the lower basal streak obscurely defined. *Hindwing* with the upper and lower discal bands also less defined than in the male, the lower submarginal line replaced by obscurely defined broad lunules, the black dot between the middle and lower medians being distinct. Underside with the ground colour darker than in the male, and all the markings much more prominent and whiter.



Expanse, ♂  $3\frac{2}{10}$ , ♀  $3\frac{4}{10}$  inches.

HABITAT.—S. Andaman Isles.

The type specimens of this species were obtained by the late Mr. A. de Roepstorff, at Port Blair, South Andamans, and from whom we received several examples. It is a well-marked species.

INDO-MALAYAN SPECIES OF HERONA.—*Herona Sumatrana*, Moore, Trans. Ent. Soc. 1881, p. 308. Bock's Head Hunters, etc. (1881). de Nicéville, Journ. Asiatic Soc. Bengal, 1894, p. 5, pl. 3, fig. 7, ♀. *Habitat.* Sumatra.—*Herona Djarang*, Fruhstorfer, Ent. Nach. 1893, p. 319; Stettin Ent. Zeit. 1894, p. 126, pl. v. fig. 9, ♂. *Habitat.* Nias Island.—*Herona Pringondani*, Fruhstorfer, Ent. Nach. 1893, p. 314; Stett. Ent. Zeit. 1894, p. 120, pl. 4, fig. 5, ♀. de Nicéville, Journ. Asiatic Soc. Bengal, 1894, p. 4, pl. 3, fig. 4, 5, ♂ ♀. *Habitat.* Java.—*Herona Schonbergi*, Staudinger, Isis, 1890, p. 337, pl. 3, fig. 3; Deuts. Ent. Zeit. 1891, p. 84. *Habitat.* S. Borneo.

#### Genus SEPHISA.

*Castalia*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 199 (1857). Staudinger and Schätts, Lep.

Exot. p. 166 (1888)—*preoccupied*.

*Apatura* (Sect. v. *Castalia*), Felder, Neues Lep. p. 37 (1861).

*Sephisa*, Moore, Proc. Zool. Soc. 1882, p. 240. de Nicéville, Butt. of India, etc., ii. p. 45 (1886).

Leech, Butt. China, etc., p. 150 (1892).

IMAGO.—Male. *Forewing* subtriangular, costa arched, apex obtuse, exterior margin convex below the apex, concave in the middle, emarginate and sharply angular at end of the lower median veinlet; posterior margin straight; first subcostal branch emitted at about one-fourth before end of the cell, second at a short distance beyond the end; discocellulars short, radials from angle close to subcostal and lower end; cell open. *Hindwing* short, triangularly ovate; costa much arched, exterior margin convex, scalloped; precostal vein strongly excurved; cell open. *Body* stout; palpi porrected, compactly scaled beneath; antennæ rather stout, with a well-formed stout club; eyes naked.

TYPE.—*S. dichroa*.

CATERPILLAR.—Slug-shaped; skin wrinkled and shagreened; with two small dorsal flat semi-lobed raised granulate flaps on the eighth segment, and two also on the eleventh segment; head larger than second segment, furnished with two antlered horns; anal segment with two acutely-pointed processes.

CHRYSLIS.—Somewhat boat-shaped; dorsum highly arched and keeled; shagreened, thorax gradually sloped from the head with a narrow keeled ridge from the collar to the waist, which is slightly notched before reaching the highest point; head with two projected points.

**SEPHISA DICHROA** (Plate 197, fig. 1, 1a, b, c, d, e, ♂ ♀; larva and pupa).

*Limenitis dichroa*, Kollar in Hügel's Kaschmir, iv. pt. 2, p. 429, pl. 8, fig. 1, 2 (1844).

*Castalia dichroa*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 199 (1857).

*Sephisa dichroa*, Moore, Proc. Zool. Soc. 1882, p. 240. de Nicéville, Butt. of India, etc., ii. p. 47, pl. 20, fig. 93, ♂ (1886).

IMAGO.—Male. Upperside olivescient-black; cilia alternated with white between the veins. *Forewing* crossed by two outwardly-oblique ochreous-yellow macular bands, three very small subapical superposed ochreous spots, followed by a submarginal series of paler small spots. *Hindwing* with the discal area broadly ochreous-yellow, traversed by black veins; followed by a submarginal row of broad conical ochreous-yellow spots, and a slightly-defined bluish-grey slender marginal line; a bluish-grey speckled subanal dot situated between the middle and lower median veinlets; in some a small upper discocellular black spot is present. Underside with markings similar to those on the upperside, the black portions paler and greenish tinged. *Forewing* with the base of the costa, a spot at the base of cell and another below the cell, a broken streak at end of the cell, the three subapical spots, submarginal macular band and marginal line dull bluish pearly-white. *Hindwing* with the basal and discal interspaces, submarginal band and marginal line, and the subanal spot also dull bluish pearly-white; the upper discal interspace and the submarginal band generally tinged with ochreous-yellow; a short black streak near base of the cell and a dot above base of the middle median veinlet, these two latter and also the discal black lunular band more or less narrow, macular, or obsolescent. *Body* and palpi above black; palpi beneath, forelegs and femora beneath white; legs above bluish; antennæ black; eyes reddish, naked.

Female. Upperside similar to the male; the forewing differing only in the upper portion of the outer discal band being paler or whitish, the three subapical spots pure white, and the submarginal series of spots also whitish. Underside as in the male.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

CATERPILLAR.—“Extenuate in form; skin wrinkled. Colour blue-green, with more vivid green suffusions about the centre of the segments; pale, almost hoary, on the sides, and deep coloured on the back. Skin shagreened with minute pale yellowish dots, and covered with very short bristly hairs on the back, and fine short silky hairs on the sides and below. Head very much larger than the second segment, with antlered horns; crown deeply notched between the horns, flat in front, and cheeks rather flat-sided. In prolongation of the horns in front is a pale mauve-coloured stripe on each cheek; mouth black, and a minute black spot just behind the eyes; colour of the head otherwise pale green, that of the cheeks, though pale, being a rather more vivid colour than that of the body; top of head broad and



somewhat flat, the base of the horns ending in a lobe; colour of the horns above, and top of the head pale ochreous straw colour, the inner portions of the lobes tinged faintly with greenish; below, the tines of the antlers are deep shiny steely-black; at the back of the head at base of horns, is a ring of small sharp spines, which pass down the sides of the cheeks and partake of the colouring of the region passed through. In prolongation of the horns is a narrow, pale yellow, longitudinal streak, broadest at its commencement on the second segment, becoming obsolete on the seventh segment, reappearing, as it were, on the eleventh segment in continuation of one of the oblique lateral streaks, and again fading away on the last segment. A series of similarly coloured fine oblique wavy-streaks on the sides, originating just below the region of spiracles, and all but two terminate on the back; these streaks are very faint on the second, third, and fourth segment, in fact scarcely discernible with the naked eye, but are well defined on the other segments, of which, those originating on the sixth and ninth segment terminate, in the centre of the back, in two pair of flat semilobed-shaped raised flaps, the points of the flaps inclining outwards from each other and directed backwards, with the tips turned in; these appendages are granulate, white, tipped with yellow, with a slight suffusion of pink in the centre; a deep crimson-lake spot marks the division between each pair, the foremost pair are wider apart than the hinder ones; down the anal flaps is a depression which to the naked eye gives the appearance of the vent ending in pointed tails; margin of anal flaps pale yellow; true legs very pale green. All the rest of the under surface pale whitish."

CHRYSA LIS.—"Emerald-green, and covered with a white powdery-bloom, most especially about the thorax and base of abdomen. The darkest shading of colour prevails on the abdomen, from the tail to about two-thirds of the way up. In general appearance the chrysalis is somewhat boat-shaped, or perhaps a better simile would be a cocked hat, the sides are somewhat compressed, and the back highly arched and keeled. The shell is shagreened and mottled-whitish. Two projections of medium length which curve outwards, with a flat space between on the crown, protrude beyond the head, in the shape of horse's ears; these are notched at the base, and are deeply ribbed, and in colour are a shade brighter than the ground colour, with a well-marked dirty-white, roughly-wrinkled ridge passing backwards, converging *en route*, and gradually fading away on the thorax. Just beyond the collar, this ridge is markedly intersected by the antennæ. The thorax gradually slopes up from the head, with a narrow keeled ridge from the collar to the waist, which is slightly notched before reaching its highest point a little beyond the middle. From the waist the abdomen is highly curved with the sharp-keeled ridge continued and notched at the junction of each segmental division. Colouring of keel, slightly ochreous on the thorax, deep brown for a couple of segments beyond the waist, from



thence shading to dirty white. The outline at the division of the thoracical with the abdominal region is marked by a fine straight white line, thrown off, as it were, on either side of the keel, at the waist obliquely forward. Abdomen marked with a narrow white interrupted line below the spiracles, and a series of oblique short dirty-whitish lateral streaks above, those on the powdery region being the largest, powdery in appearance, and apparently on a slightly raised surface. The spiracles are but faintly seen. The anal segment ends in a broad spear-shaped tail, furnished with claspers; edging of tail similar to keel; tips of claspers furnished with a fringe of short dark red-brown bristly hairs. Outline of wings distinctly defined by a narrow ochreous-white ridge, slightly irregular in width, being narrowest about midway from costa to apex, with an interruption at base, where there is a small spinous projection; nervules finely marked. Antennæ reach to apex of wings, slightly raised and evenly notched, pale ochreous in colour. A smooth semicircular bit over the eyes; lower portion of eyes very warty. Between the horns—a projection from the head—in front are a series of warty spots, pale whitish in colour and arranged exactly in the shape of a coronet, with a well-marked drop-shaped, raised, pale ochreous spot on each side in front of the eyes” (Major H. C. Harford, MS. Notes).

HABITAT.—Western Himalayas.

DISTRIBUTION.—“This butterfly appears to be confined to the Western Himalayas. I have taken it commonly at Simla flying round and settling on the oak throughout the summer, also at Kujiah, near Dalhousie, in June. The Indian Museum, Calcutta, possesses specimens from the Kulu Valley, collected by Mr. A. Graham Young, and from Masuri. Major Marshall has specimens taken at Chumba in May, and at Murree in June” (de Nicéville, Butt. Ind. ii. 47). The late W. S. Atkinson possessed specimens from Almora and Gurhwal. Col. A. M. Lang (Ent. Mo. Mag. 1864-5, 181) records that “it is partial to ripe fruit, and has seen it in open woods in the interior of the Himalaya, pitching on the sprays of tall shrubs, making rapid flights and returning to the same spot.” We possess males from Kashmir, taken by the late Capt. Bayne Reed in 1872, a female taken by Capt. Beckett beyond Ramgurh and Almora at 5500 feet elevation, in November, and a female from Murree, taken in August. Mr. A. Grote possessed it from Masuri and Naini Tal. Capt. A. M. Lang, in his MS. Notes also records its capture at Kotghur in July and October. Major H. B. Hellard took it at “Simla at the end of June, and at Barungulla in Kashmir at end of September” (MS. Notes). Major J. W. Yerbury (P.Z.S. 1886, 360) says it is “not common at Murree; some half-dozen specimens taken on August 9th and 11th on the trunk of the same tree—a species of willow. Two or three also seen on the wing; the flight appears to be particularly rapid.” Mr. W. Doherty (J. A. Soc. Beng. 1886, 124) took it at “Loharkhet, N.W. Kumaon, and at Askot, East Kumaon. Much darker than Kulu or Simla specimens, the

black discal band on the hindwing below being especially wide, so as wholly to enclose the whitish spot between the lower medians; the veins also were heavily marked with black. At Murree, in the extreme north-west of India, I found this species with the band on the hindwings below wholly obsolete, and the underside with a whitish silky gloss."

FOOD PLANT AND HABITS OF LARVA.—Major H. C. Harford, in his MS. Note on the rearing of the larvæ of this butterfly, at Kausali in 1889 (and from whose drawing our figures are taken), says "it feeds on the *Bahn-Ilex-Oak* (*Quercus incana*), and rests on the upper surface of the leaf, laying along the centre rib, on a silken web, which it spins for itself like a cradle; head facing towards the stem, and drawn down so that the horns are in prolongation of the body. The larvæ were obtained May 16th, 1889, changed to chrysalis May 26th, and the imago emerging June 9th, 1889."

**SEPHISA CHANDRA** (Plate 198, fig. 1, 1a, b, c, ♂ ♀; Plate 199, fig. 1, 1a, b, c, ♀).

*Castalia Chandra*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 200, pl. 6, a, fig. 4, ♂ (1857).  
Waterhouse's Aid, i. pl. 8, ♀ (1880).

*Sephisa Chandra*, de Nicéville, Journ. Asiatic Soc. Bengal, 1882, p. 60; Butt. of India, etc., ii. p. 46 (1886). Staudinger, Lep. Exot. pl. 55, ♂ (1885).

IMAGO.—Male. Upperside blue-black; cilia alternated with white. *Forewing* crossed by an inner discal excurved rich ochreous-yellow macular band composed of four portions disconnected by the black veins, and an outer discal oblique straight white macular band composed of five spots, the three upper of which are the narrowest, the fourth cordate or ovate, the fifth smaller and ovate; beyond are three subapical superposed small white spots, the lowest being minute, followed by a submarginal decreasing series of more or less obscurely-defined spots and a less distinct marginal slender macular line, both of which are either bluish-white or dull ochreous; sometimes a small slender ochreous streak is present within the basal interspace of the upper and middle median veinlets. *Hindwing* with the medial discal area broadly from base of the cell rich ochreous-yellow, traversed by the black veins, and marked by a small more or less apparent black spot above base of the middle median veinlet, beyond which is a submarginal row of broad rich ochreous-yellow obconical spots, followed by a marginal slender lunular bluish-white or dull ochreous line; sometimes a small subanal bluish-white speckled spot is present between the middle and lower median interspace. Underside somewhat paler, the black colour more or less greenish tinged, with markings similar to the upperside, but somewhat broader and more prominent. *Forewing* also with the base of the costa, a spot within base of the cell, and another below the cell bluish-white. *Hindwing* also with three basal costal and two subcostal spots also bluish-white; the discocellular black spot large, the upper discal interspaces sometimes tinged with



white. *Body* above black; collar and front white spotted; palpi above black, white beneath; thorax and abdomen beneath black, spotted with white; legs black; fore legs white beneath; middle and hind femora white beneath; antennæ black; eyes reddish.

Female POLYMORPHIC. *Forewing* with the apex broader than in the male, and the outer margin less irregular. *Hindwing* broader and less sinuous.

FIRST FORM (Plate 198, fig. 1, b, c). Upperside paler than in male, being of an olivescient fuliginous-black, palest apically; markings of the *forewing* similar to male, except that the two discal macular bands are reduced in size, the subapical spots slightly larger, the submarginal series broader, but less defined; the two middle portions of the inner discal macular band are partly whitish speckled externally, and the lower portion olivescient-blue speckled; the lower median basal interspace, the base of the cell, and the discocellular area also blue-speckled. *Hindwing* with broader discal, submarginal and marginal markings than in male, the discal area being paler ochreous-yellow, the submarginal spots partly whitish, and the marginal line white, the latter with blue-speckled edges. Underside as in the male. Expanse,  $3\frac{2}{10}$  inches.

SECOND FORM (Plate 199, fig. 1). Upperside similar to the first form, but differs on the *forewing* in the two lower portions of the inner macular band being entirely white, the upper portion within the cell only being ochreous-yellow, and the basal interspaces more brightly blue-speckled. On the *hindwing* the discal, submarginal, and lunular interspaces are all white. Underside with similar white interspaces. Expanse, 3 to  $3\frac{4}{10}$  inches.

THIRD FORM (Plate 199, fig. 1, a). Upperside blacker than in the first and second form. *Forewing* with the inner and outer discal macular band composed of smaller and less defined white spots, the lower portions being blue-and-black-speckled. *Hindwing* with the discal interspaces restricted to narrow streaks, and these, with the submarginal spots and marginal line are blue-and-black-speckled. Underside similar to the upperside, except that the discal and submarginal interspaces are tinged with ochreous. Expanse, 3 to  $3\frac{2}{10}$  inches.

FOURTH FORM (Plate 199, fig. 1, b, c). Upperside of a dark rich purple-black colour. *Forewing* slightly olivescient at the apex; the discal macular bands partly obsolescent, the inner series being composed of a slender ochreous-yellow constricted streak within the cell, the two next portions represented by a cluster of blue scales; of the outer series, the three upper spots are very small and white, the two lower represented by a cluster of blue scales. *Hindwing* with the discal interspaces slightly blue scaled, the submarginal conical spots and marginal lunules being prominent and entirely blue scaled. Underside. *Forewing* with the basal, discocellular, and lower discal spots, all blue scaled, the ochreous-yellow cell spot constricted. *Hindwing* similar to the third form, except that the upper discal spot and a discocellular spot are both more prominently ochreous-yellow. Expanse,  $3\frac{6}{10}$



inches. This form has a somewhat general resemblance to the species of the genus *Amesia*, a day-flying moth, of the family Zygænidæ, and of which it is probably a mimic. Expanse, ♂  $2\frac{6}{10}$  to  $3\frac{2}{10}$ , ♀ 3 to  $3\frac{6}{10}$  inches.

HABITAT.—Nepal; Sikkim; Upper Assam; Khasias; Burma; Upper Siam.

DISTRIBUTION.—Numerous specimens of both sexes of this species were taken by the late General G. Ramsay whilst Government Resident in Nepal. Of these we possess several males and polymorphic females. "The Indian Museum, Calcutta, has specimens from Nepal, Sibsagar in Assam taken by Mr. S. E. Peal, and one female from Shillong, taken by Dr. Johnson, is in Major Marshall's collection" (Butt. Ind. ii. 47). "The males are not very common in Sikkim, and are found at low elevations in the summer. The females are very variable, and appear to be in process of mimicking some species of *Danainæ*" (de Nicéville, Sikkim Gazetteer, 1894, 134). According to Mr. Elwes (Tr. Ent. Soc. 1888, 339) it is "not uncommon in Sikkim before and after the rains, but local; the female, however, is much rarer." In Colonel C. Swinhoe's collection is a female (of the form No. 4) from Cherra Punji. Mr. W. Doherty obtained it in the Naga Hills (P.Z.S. 1891, 273). Dr. N. Manders, in his Notes on the Lepidoptera of the Shan States, Burma (Tr. Ent. Soc. 1890, 521), records its occurrence "rarely at elevations of 3000 feet, males only being taken." It was also obtained in the Upper Mekong Valley Shan States, Siam, by Mr. Richard Roberts, C.E.

CHINESE ALLIED SPECIES OF *SEPHISA*.—*Sephisa princeps* (*Apatura princeps*, Fixsen, Rom. Mem. Lep. iii. p. 289, pl. 13, fig. 7 (1887). Leech, Butt. China, etc., p. 151, pl. 14, figs. 5, 6, ♂ ♀ (1892). *Syn.* *Apatura Cauta*, Leech, P.Z.S. 1887, p. 417, pl. 35, fig. 2. *Sephisa albomacula*, Leech, Entom. 1890, p. 190. *Habitat.* China. Corea.

#### Genus HESTINA.

*Hestina*, Westwood, Gen. D. Lep. p. 281 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 160 (1857). de Nicéville, Butt. of India, etc., ii. p. 55 (1886). Staudinger and Schätts, Lep. Exot. p. 133 (1887).

*Hestina* (sect. 2), Felder, Neues Lep. p. 25 (1861).

IMAGO.—Male. *Forewing* elongate-triangular; costa very slightly arched, apex broad and obtusely rounded, exterior margin concave in the middle, uneven, posterior margin long and straight; first and second subcostal branches emitted before end of the cell; discocellulars short; the cell open. *Hindwing* short, triangularly-ovate; exterior margin convex, scalloped; precostal vein straight and with a lengthened bifurcate tip; subcostal branches and radial emitted close together; cell open. *Body* robust; palpi laxly clothed with fine hairs, apical joint rather long, pointed; antennæ slender, with a well formed club; eyes naked. Sexes similar.

TYPE.—H. Nama.

*Note on the Genus Hestina.*—Westwood (Gen. D. Lep. 281) in his short diagnosis of this genus evidently took *Nama* as his typical species, for he says “second subcostal nervule of forewing arising close to the origin of the upper discocellular nervule.” This characteristic of the genus occurs only in *Nama*, and this species, moreover, is the one that is figured on the plate, and must therefore be taken as the type. In all the other species cited by Westwood under *Hestina*, the second subcostal is emitted beyond the upper end of the cell.

MIMICRY.—The species of *Hestina* are admirable mimics of the Limnaine genus *Caduga*, *i.e.* *C. Tytia* (see Plate 15, Vol. I.), etc.

**HESTINA NAMA** (Plate 200, fig. 1, 1a, b, ♂ ♀).

*Diadema Nama*, Doubleday, Annals of Nat. Hist. 1845, p. 232; Doubleday and Hewitson, Gen. of D. Lep. pl. 39, fig. 2 (1850).

*Hestina Nama*, Westwood, Gen. of D. Lep. p. 281 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 162 (1857). de Nicéville, Butt. of India, etc., ii. p. 56, pl. 12, fig. 99, ♀ (1886). Distant, Rhop. Malayana, p. 446, pl. 43, fig. 9, ♂ (1886). Leech, Butt. of China, etc., p. 142 (1892).

IMAGO.—Male. *Forewing* purpurescent blue-black, with bluish-white markings, consisting of a longitudinal streak extending along lower base of the cell, followed by (and sometimes partly coalescent with) a short angulate bar across the middle of the cell, and then by a triangular discocellular spot; above the two former are also two very small spots, and above the latter a small short narrow streak; across the inner discal area is a series of elongated outwardly-bifid streaks, the one between the median and submedian being cleft to near its base; beyond these is a recurved proximate series of lunate spots, followed by a submarginal and a marginal row of lunules, of which the anteriorly disposed are the shortest, small, and are more or less ovate; the inner margin from the base to near the outer angle is thickly speckled with grey scales. *Hindwing* deep bright or dusky chestnut-red, the outer marginal area being the darkest; the veins black; a bluish-white streak extending from the base to the disc between the veins from the costa to the abdominal margin, the median streaks shortest and bifid at their end, beyond which is a recurved submarginal row of small rounded spots and then a marginal row of more or less obscurely-defined lunate points. Cilia of both wings alternately edged with white. Underside. *Forewing* with the basal and posterior area bluish-black, the apex dull chestnut-red, with all the markings as on upperside, but more clearly defined. *Hindwing* bright chestnut-red, deepest along exterior border; marked as on the upperside; the discal streaks being more or less irrorated with red scales, the upper discal spots larger and the marginal lunate points well defined. *Body* black, grey streaked above and white spotted beneath; collar and front white spotted; palpi black, each joint with a white spot below; forelegs white above, black beneath; middle and hind legs black above and white beneath; antennæ black; eyes reddish.



Female. Upperside and underside as in the male; markings the same. Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{6}{10}$ , ♀  $4\frac{2}{10}$  to  $4\frac{4}{10}$  inches.

HABITAT.—W. and E. Himalayas; Assam; Khasia and Naga Hills; Burma; Shan Hills.

DISTRIBUTION.—*H. Nama* has a wide range, extending from Kashmir on the West through the Himalayas Eastward to Burma and Siam. We possess specimens from Kashmir taken by the late Capt. Bayne Reed, Naini Tal from Mr. W. S. Atkinson's collection, from Sikkim, taken in March, and also from the Runjeet Valley, Sikkim, taken in October, and others from Bhotan by Mr. G. C. Dudgeon. According to Mr. L. de Nicéville "it is common in the Eastern Himalayas, and occurs in the Khasia and Naga Hills, and the mountain ranges of Upper Burma. The female is much less often seen in collections than the male, though at low elevations in Sikkim in the late autumn it is very common, flying or soaring about in open spaces on the borders of forests, and exactly mimicking *Caduga Tytia*, both in appearance and habits. The Indian Museum, Calcutta, possesses the species from Nepal, Silhet, Khasia Hills, Sibsagar, Naga Hills, and also specimens obtained by the Yunan Expedition" (Butt. Ind. ii. 57). In the Sikkim Gazetteer (1894, 135), Mr. de Nicéville also says that "it occurs in Sikkim as high as 6000 feet, but is more common from 2000 to 4000 feet." Mr. H. J. Elwes (Tr. Ent. Soc. 1888, 340) records it as "very common in Sikkim up to 6000 feet, but most abundant at 3000 to 4000 feet, from March to December, the females being found abundant as well as the males." In Burma, Major C. H. E. Adamson (List Butt. Burm. 13) records it from the "Arakan Hills and Bhamo. Scarce." Lieut. D. Thompson (J. Bomb. N. H. Soc. 1890, 296) took it in the Chin-Lushai country during the Expedition from the Chittagong side in the winter of 1889-90." Mr. F. E. Dempster (J. Bomb. N. H. S. 1890) obtained it at "Choungkwa, Toungtek, and Laivar, in March, and at Lamtok in April," during the same Expedition from the Burmese side of the Hills.

Dr. N. Manders, in his Notes on the Lepidoptera of the Shan States, Burma (Tr. Ent. Soc. 1890, 521), says it "is very common all the year round. In the cold weather being found commonly on the tops of the limestone outcrops, which are so common in the Shan States, and rise to a height of 500 to 600 feet above the surrounding plain."

It also occurs in the Malay Peninsula (Distant, Rhop. Malay. 446), and in Sumatra. It is also recorded from Upper Siam and Western China.

MIMICRY.—Both sexes of *H. Nama* are admirable mimics of the Limnaine butterfly *Caduga Tytia*,\* both in appearance, and, according to the observations made

\* For *Caduga Tytia* see Lep. Ind. i. plate 15.



by Mr. L. de Nicéville, also in its habits, "flying or soaring about in open spaces on the borders of forests."

INDO-MALAYAN ALLIED SPECIES OF HESTINA.—*Hestina mimetica*, Butler, Trans. Ent. Soc. 1874, p. 426. Snellen, Tijd. voor Entom. 1894, p. 67, pl. 3, fig. 1, ♂.  
*Habitat.* Java.—*Hestina Carolinæ*, Snellen, Tijd. voor Entom. 1890, p. 218.  
*Habitat.* Sumatra.

#### Genus PARHESTINA.

*Hestina* (sect. 1), Felder, Neues Lep. p. 25 (1861).

*Hestina* (part), de Nicéville, Butt. of India, etc., ii. p. 55 (1886).

*Diagora*, Snellen, Tijd. voor Entom. 1894, p. 67.\*

IMAGO.—Male. *Forewing* elongated, triangular; costa more arched than in typical *Hestina* (*Nama*), apex narrower; exterior margin less concave, almost even; first subcostal branch emitted at one-sixth before end of the cell, second at one-sixth beyond the end; discocellulars somewhat longer. *Hindwing* broadly ovate, apex and exterior margin very convex, exterior margin slightly uneven and somewhat angulate in the middle; precostal vein short, straight, truncate at the tip; radial emitted at some distance from base of the second subcostal. Palpi shorter, more compactly clothed, apical joint short and thick; antennæ shorter, club shorter; eyes hairy. Sexes similar.

LARVA.—Mr. J. J. Walker, R.N., describes that of *P. nigrivena*, of Hong Kong, as being "slug-like, smooth, green, with two branched horns on the head."

TYPE.—*P. persimilis*.

MIMICRY.—All the species are more or less mimetic, and the typical species of this genus are probably mimics of certain Limnaine butterflies of the genus *Tirumala*, others also having a general resemblance to the Pierine genus *Metaporia*.

HABITS.—According to Mr. L. de Nicéville (Butt. Ind. ii. 56) "they are not very strong on the wing or rapid in flight, and they frequent glades in forests and orchards at moderate elevations."

#### PARHESTINA PERSIMILIS (Plate 201, figs. 1, 1a, b, ♂ ♀).

*Hestina persimilis*, Westwood, Gen. D. Lep. p. 281 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 161 (1857). de Nicéville, Butt. of India, etc., ii. p. 58 (1886).

IMAGO.—Male. Upperside blue-black, with pale olivescence-white markings. *Forewing* with a short claviform olivescence-white streak within base of the cell, a shorter angulate bar across the middle and two very short pointed spots at the end

\* Inadmissible; being the name of a synonym of one of the species included in the genus. Moreover the name *Diagoras* has been previously used.

of the cell, beyond which is a discal curved series of spots, the fourth (in the upper median interspace) being the smallest, and the next the largest, followed by a recurved submarginal row of more rounded spots, and then a marginal row of small dentate spots; below base of the median vein is an elongated more or less bifid claviform streak. *Hindwing* with pale olivescence-white basal and discal interspaces, followed by an outer discal series of spots, of which the two upper are large and elongated, and the two lower very small, beyond which is a submarginal row of lunate spots, and then a marginal row of dots. In some specimens all the markings are pale bluish-white, in others the outer rows of spots only are whitish. Underside paler, the posterior and basal area of forewing and the outer border of hindwing posteriorly being blue-black, the apical area of the forewing and basal area of hindwing more or less pale olivescence brown; the markings, as on the upperside, olivescence yellowish-white or bluish-white on the forewing. *Body*, palpi, and legs black; thorax and abdomen above fringed with grey hairs at the sides, spotted with white beneath; collar and front white spotted; palpi with a basal white spot beneath; forelegs white spotted; middle and hind femora white beneath; antennæ black; eyes reddish, hairy.

Female. Upperside duller black; markings similar to the male, but larger, more elongated, and all pale olivescence-white; the bifid streak below the median of the forewing coalesced with the lower submarginal spots. Underside as in the male, but paler.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{6}{10}$  to 3 inches.

HABITAT.—Eastern Himalayas.

DISTRIBUTION.—We possess two males and one female from Nepal, taken by the late General G. Ramsay. "It also occurs in Sikkim. It probably occurs at low elevations, but little is known about it. The males are rare, the females still more so. Mr. G. C. Dudgeon reports that it is not uncommon at the foot of the Hills in Daling" (de Nicéville, Sikkim Gazetteer, 1894, 135). Mr. H. J. Elwes (Tr. Ent. Soc. 1888, 341) says it is "quite rare in Sikkim, and apparently only found at low elevations, though in Simla,\* it occurs at from 4000 to 7000 feet."

MIMICRY.—This species is probably a mimic of the common Limnaine butterfly *Tirumala Limniace*.

**PARHESTINA ZELLA** (Plate 201, figs. 2, 2a, b, ♂ ♀).

*Hestina Zella*, Butler, Trans. Ent. Soc. 1869, p. 9, fig. ♂. Moore, Proc. Zool. Soc. 1882, p. 240. de Nicéville, Butt. of India, etc., ii. p. 58 (1886).

IMAGO.—Male and female. Upperside differs from *P. persimilis* in the ground

\* *P. Zella* is probably the species here intended.

colour being of a pale fuliginous-black; all the markings less defined and paler, the basal and discal markings being comparatively larger, and these latter nearly confluent in the male, whilst in the female they are even more confluent, and occupy nearly the whole of the interspaces between the veins. Underside. Both sexes very much paler than the uppersides, the markings even less defined and olivescient yellowish-white, and, in the female, the entire underside is olivescient yellowish-white, the veins only being blackish, and the markings very obscurely apparent.

Expanse, ♂  $2\frac{6}{10}$ , ♀ 3 inches.

HABITAT.—Western Himalayas.

DISTRIBUTION.—This is probably the Western Himalayan form of the preceding species. We possess a male and three females from the Deyra Dhoon, and a female from the Umballa District taken by the late Capt. Bayne Reed. Under the name of the preceding species Mr. de Nicéville states that he “has taken several specimens in Simla and the neighbourhood, chiefly on over-ripe fruit,” and that “at Masuri the larva feeds on *Celtis australis*” (Sikkim Gazetteer 1894, 135). Col. A. M. Lang (Ent. Mo. Mag. 1864-5, 133) records it from the “Himalaya at 4000 to 7000 feet, three specimens being taken, one in a narrow glen, well wooded with undergrowth, the other two in an orchard of plum and apricot, on the ripe fruit of which these insects were settling, both on the trees and on the fallen fruit below.”

#### PARHESTINA MENA (Plate 202, figs. 1, 1a, ♂).

*Hestina Mena*, Moore, Annals of Nat. Hist. 1858, p. 48, ♂. de Nicéville, Butt. of India, etc., ii. p. 59 (1886).

*Diadema Mena*, Butler, Annals of Nat. Hist. 1865, p. 398, ♂.

IMAGO.—Male. Upperside black. *Forewing* with pale yellowish base of the costal border, a broad streak within the cell, three elongated streaks beyond the cell, a transverse inner discal series of elongated streaks, followed by an outer discal series of rounded spots, a submarginal series of similar but slightly smaller spots, and then by a marginal row of still smaller spots; the two discal and submarginal series almost confluent, and the streak between the lower median and submedian divided to near its base. *Hindwing* with only the veins and a submarginal series of lunules black, the entire interspaces between the veins being pale yellowish. Underside similar to the upperside, except that the veins only and a submarginal series of obscure lunules are black, the interspaces between the veins being very pale olivescient-yellow; the discal area of the hindwing being of a slightly brighter yellowish tint. *Body* above blackish, white beneath; thorax white banded; collar and head with white spots; palpi black, but white on the outside of base of second



joint; legs black; fore tibia and tarsus with anterior white band; middle and hind femora white beneath, tarsus with white bands. Eyes naked.

EXpanse, ♂  $3\frac{2}{10}$  inches.

HABITAT.—UNKNOWN.

*Note.*—The type specimen of the male is the only one known to us, and of which our illustration is a representation. The exact locality of this species is yet to be determined.

**PARHESTINA NICEVILLEI** (Plate 202, figs. 2, 2a, ♂).

*Hestina Zella*, de Nicéville, Journ. Asiatic Society, Bengal, 1893, p. 65, pl. 1, fig. 2, ♂.

IMAGO.—Male. Outer margins of the wings slightly scalloped. Upperside. Both wings blacker than in *P. Mena*, the markings somewhat of a deeper pale yellow, and brighter yellow on the abdominal margin. *Forewing* with the cell area and the discal streaks more thickly black-speckled, the discal streak between the medians narrower and entire, those of the upper series differently shaped at their outer end, the outer-discal series of spots different, the lower median spot of this series being very small, the upper three disposed in an incurved series, there being also a fourth upper very small spot, which is not present in *P. Mena*; the submarginal row of spots are placed somewhat nearer the margin, and are small, narrow, except the upper which is dentate; the marginal are not present. *Hindwing* with the veins and the outer border broadly black; the latter bearing a submarginal series of eight yellow spots, of which the upper one is small and oval, the next large and conical, the rest decreasing in size; beyond these is a marginal medial row of small spots. Underside with all the veins and outer border more broadly black, the markings deeper pale yellow on the forewing and brighter yellow on the hindwing. *Forewing* with similarly disposed and shaped, but prominent markings, as on upperside, except that the three upper discal and submarginal series are dentate, those of the lower series being similar, followed by a marginal row of small dentate spots. *Hindwing* with a prominent series of yellow submarginal spots extending from base of the costal vein to the anal angle, the two between the upper subcostal and the radial broadly dentate, the others oval; beyond is a marginal row of small spots, of which the upper three are narrow and the lower round; a discal series of elongated yellow streaks from the upper subcostal to the submedian, of which the two upper and the lowest is incised at the outer end, the other two (between the median veinlets) being short and oval.

EXpanse, ♂  $3\frac{6}{10}$  inches.

HABITAT.—N.W. Himalayas.

DISTRIBUTION.—A single specimen of the male of this species was taken by

Mr. L. de Nicéville, on May 22nd, 1879, on the forest-clad road between Chumba and Kujiah.

MIMICRY.—Mr. de Nicéville remarks (*l.c.*) that “when capturing this insect it at once struck me that it was an excellent mimic, both in the slow and sailing mode of its flight, and in general appearance, of *Metaporia Caphusa*, which is an exceedingly common Pierine butterfly in the spring in many parts of the outer N.W. Himalayas, and which latter is, doubtless, a protected species. It is more probable that this species mimics the Pierine butterfly rather than a Danaid [Limnaine], especially as on the underside both species are washed with yellow on the hindwing, which the Danaids are not.”

Our illustration of this species is a reproduction of Mr. de Nicéville's figure in the Asiatic Society's Journal, as above cited.

CHINESE AND INDO-MALAYAN SPECIES OF PARHESTINA.—*Parhestina assimilis* (*Papilio assimilis*, Linn. S. N. i. p. 479 (1758). Clerck, *Icones* pl. 16, fig. 1, 2 (1764). Drury, *Illust. Exot. Ent.* i. pl. 17, figs. 3, 4 (1773). Cramer, *Pap. Exot.* ii. pl. 154, fig. A. (1779). *Hestina assimilis*, Staudinger, *Lep. Exot.* pl. 47, ♂ (1885). Leech, *Butt. China, etc.*, p. 143. *Habitat.* E. Tibet, China, Hong Kong, Corea.—*Parhestina Formosana*, n. sp. MALE.—Smaller than the same sex of *T. assimilis*. Forewing shorter, more triangular in form; costa more regularly arched, exterior margin more oblique and concave in the middle. Hindwing also shorter, and the exterior margin more angular at end of the upper and lower median veinlets. Upperside blacker, the markings similar but widely separated and well defined. *Forewing* with a basal and widely separated anterior spot within the cell, the basal streaks between lower median and the submedian divided transversely into two portions—basal and discal. *Hindwing* with the discal white markings narrower, the three upper discal streaks broken, the row of submarginal white spots continuing to the anal angle, with an intervening lower series of small crimson spots, having black and white speckled centres, disposed between them and the lower discal streaks; marginal row of white spots small. Underside olivescence-black, markings as on upperside, sharply defined; forewing with two superposed crimson speckled spots below the submedian disposed between the two submarginal and outer discal spots. Expanse, 3 inches. *Habitat.* Formosa (Coll. Moore).—*Parhestina nigrivena* (*Hestina nigrivena*, Leech, *Entom.* 1890, p. 31; *Butt. China, etc.*, p. 144, pl. 20, fig. 4, ♂ (1893). Grose Smith and Kirby, *Rhop. Exot.* 1891, *Hest.* pl. figs. 1, 2. *Habitat.* C. China.—*Parhestina Oberthuri* (*Hestina Oberthuri*, Leech, *Entom.* 1890, p. 32; *Butt. China, etc.*, p. 147, pl. 20, fig. 7, ♂ (1893). Grose Smith and Kirby, *Rhop. Exot. Hest.* pl. figs. 5, 6 (1891). *Habitat.* W. China.—*Parhestina viridis* (*Hestina viridis*, Leech, *Entom.* 1890, p. 32; *Butt. China, etc.*, p. 143, pl. 20, fig. 3, ♂ (1893). *Habitat.* C. China.—*Parhestina subviridis* (*Hestina subviridis*, Leech,



Entom. 1891, Suppl. p. 27; Butt. of China, etc., p. 145, pl. 20, fig. 8, ♂ (1893). *Habitat.* W. China.—*Parhestina intermedia* (Hestina intermedia, Leech, Butt. of China, etc., p. 145. *Habitat.* Moupin, W. China.—*Parhestina Yankowskii* (Hestina Yankowskii, Grose Smith and Kirby, Rhop. Exot. p. 2, *Hest.* pl. 1, figs. 3, 4 (1891). *Habitat.* W. China.—*Parhestina Japonica* (Aptura Japonica, Felder, Wien. Entom. Monats. 1862, p. 27; Pryer, Rhop. Nippon, p. 23, pl. 5, fig. 8. *Diagora Japonica*, Snellen, Tijds. voor Ent. 1894, p. 67. *Syn.* *Diadema Diagoras*, Hewitson, Exot. Butt. D. pl. 1, fig. 1 (1863). *Habitat.* Japan.—*Parhestina australis* (Hestina australis, Leech, Butt. of China, etc., p. 146, pl. 20, fig. 5, ♂ (1893). *Habitat.* Japan.—*Parhestina Chinensis* (Hestina Chinensis, Leech, Butt. of China, etc., p. 146, pl. 20, fig. 6, ♂ (1893). *Habitat.* Moupin, W. China.

Genus SASAKIA.\*—Male. Wings comparatively shorter and broader than in Hestina and Parhestina. *Forewing* with the apex more pointed, exterior margin less oblique; cell area much broader, the upper portion shorter; upper discocellular emitted opposite the middle and lower medians, the discocellulars being longer and the lower bent obliquely inward; first subcostal branch emitted at two-fifths before end of the cell, the second branch close before end of the cell. *Hindwing* broadly ovate, exterior margin convex, scalloped, but not angulated in the middle; precostal vein moderately long and incurved; cell area broad. *Body* very robust; palpi much longer, more slender, and laxly hairy along the sides; apical joint long, slender, cylindrical; antennæ long, stout, club elongated; eyes naked. TYPE.—*S. Charonda*.—*Sasakia Charonda* (*Diadema Charonda*, Hewitson, Exot. Butt. D. pl. 1, figs. 2, 3, ♂ ♀ (1863). *Euripus Charonda*, Leech, Butt. China, Japan, &c., p. 149. *Habitat.* Japan.—*Sasakia Coreana* (*Euripus Coreanus*, Leech, Proc. Zool. Soc. 1887, p. 418, pl. 36, figs. 1, 1a, ♂ ♀. *Habitat.* Corea.

### Genus EURIPUS.

*Euripus*, Doubleday, Gen. D. Lep. pl. 41 (1848). Westwood, *id.* p. 293 (1850). Menétries, Imp. Acad. Sci. Petr. (1855), p. 34. Moore, Catal. Lep. Mus. E. I. C. i. p. 198 (1857). Felder, Neues Lep. p. 26 (1861). Distant, Rhop. Malay. p. 133 (1882). de Nicéville, Butt. of India, etc., ii. p. 15 (1886). Semper, Reisen, Phil. Lep. p. 82 (1887). Staudinger and Schätts, Lep. Exot. p. 134 (1887). Leech, Butt. China, etc., p. 147 (1893).

IMAGO.—Male. *Forewing* subtriangular, costa gently arched, apex obtuse, exterior margin very slightly concave in the middle, uneven, and angulate at end of the lower median veinlet; first subcostal branch emitted at one-fourth before end of the cell, second at about one-fourth beyond the cell; discocellulars short, radials from

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\* Named after our friendly correspondent, Professor C. Sasaki, of the Imperial University, Tokio, Japan.



angle close to subcostal and the lower end; cell open; middle and lower median veinlet very wide apart. *Hindwing* subquadrate; costa much arched at the base, apex convex, exterior margin scalloped and broadly angular in the middle and at anal angle; precostal vein thickened and bent outward at the middle; cell open. *Body* stout; palpi porrect, short, apical joint thick and obtusely pointed; antennæ with an elongated club; eyes naked. Sexes dissimilar. Female polymorphic.

TYPE.—*E. Halitherses*.

POLYMORPHISM AND MIMICRY.—Wherever the species of this genus are found the females are very variable. In some species the females are distinctly polymorphic, and are mimics of species of *Euplæine* butterflies, occurring with them, so closely, as to be easily mistaken for them on the wing, the resemblance being not only in shape and markings, but also in the manner of flights and in the habit of resting in exposed positions.

The males have quite a different appearance, their flight is rapid instead of soaring, and they rest with closed instead of open wings. (de Nicéville, Butt. Ind. ii. 16.)

**EURIPUS HALITHERSES** (Plate 203, figs. 1, 1a, b, c, d, e, ♂ ♀; 204, fig. 1, a, b, c, ♀).

*Euripus Halitherses*, Doubleday and Hewitson, Gen. D. Lep. pl. 41, fig. 2, ♂ (1848). Westwood, Gen. D. Lep. p. 293 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 199 (1857). de Nicéville, Butt. of India, etc., ii. p. 18, pl. 20, fig. 90, ♂ ♀ (1886); *id.* Journ. Asiatic Soc. Bengal (1887), p. 51. Staudinger, Lep. Exot. pl. 48, ♂ ♀ (1885).

*Diadema Nyctelius*, Doubleday, Annals of Nat. Hist. (1845), p. 182, ♀; *id.* Gen. D. Lep. p. 281, pl. 37, fig. 1, ♀.

*Hestina Isa*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 161 (1857), ♀.

*Euripus Haliartus*, Felder, Wien. Ent. Monats. 1860, p. 234, ♀.

*Euripus Cinnamomeus*, Wood-Mason, Journ. Asiatic Soc. Bengal, 1881, p. 272, pl. 4, fig. 4, ♀.

*Euripus Alcatheoides*, de Nicéville, Butt. of India, etc., ii. p. 20 (1886), ♀.

IMAGO.—Male. Upperside blue-black, with pale yellowish-white markings. *Forewing* with two pale yellowish-white short slender streaks within base of the cell, a lobate spot at end of the cell, a transverse excurved discal series of spots, of which the three upper are small and narrow, the fourth smaller and triangular, the next situated between the middle and lower median veinlet being much larger and longitudinally oval, beyond which is a submarginal series of six ill-formed <-shaped marks ending below in a short streak on the posterior margin before the angle, followed by a marginal posterior row of very bluish-white dots; between the median and submedian vein is a lengthened claviform streak, extending from the base, and is sometimes continuous with a short streak splitting the lower <-shaped submarginal mark, there also being sometimes present a slightly-defined slender line

above and below the clavate end of the streak. *Hindwing* with the costal border paler and of a purplish tint; the discal interspaces from the subcostal vein to the abdominal margin pale yellowish-white, the traversing veins being broadly black, followed by a submarginal and then a marginal row of small bluish-white pointed dots disposed in pairs between the veins, the anterior of the former series being confluent and obscurely dilated. Underside olivescient fuliginous-brown, the posterior border of forewing and posterior area of the outer border of hindwing being suffused with blue-black. Both wings with whitish markings, as on upperside. *Body* black, thorax and abdomen with white bands; collar and front, and palpi beneath white spotted; legs black; forelegs with white bands; middle and hind femora white beneath; antennæ black; eyes red, naked.

Female.—Polymorphic and mimetic.

FIRST FORM.—*Isa*, Moore (Plate 203, fig. 1, b. c). Upperside purplish blue-black, brightest apically. *Forewing* with a bluish-white broad short oblique upper discal band from the costa to the middle median intersected by the veinlets; a very obscure bluish-white oblique streak at end of the cell, and a more or less complete marginal row of small white spots, which latter are slender and somewhat elongated at apical end. *Hindwing* with the medial discal area from the subcostal vein to the abdominal margin bluish-white, intersected by the veinlets; followed by a submarginal and then a marginal row of blue-white spots. Underside uniformly fuliginous-black, marked as above. Mimics the *male* of the Euplæine butterflies *Danisepa Rhadamanthus* and *D. Ramsayi*.

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

SECOND FORM (Plate 203, fig. d, e.) Upperside purplish fuliginous-black, more or less darker and blue tinted apically on the forewing. *Forewing* with a bluish-white broad oblique upper discal band, intersected by the veins, as in the first form, but the band is somewhat broader and less sharply defined, below which is a more or less obscure elongated white-speckled streak with cleft outer end, and below this is a similar cleft-spot between the median and submedian, followed below by a streak along the posterior angle; a more or less obscure white-speckled oblique streak at end of the cell; and a marginal row of small distinct bluish-white pointed spots, of which two are disposed together between the veins, and the upper slender and elongate. *Hindwing* with the basal and discal area bluish-white, this colour also extending, and more or less coalescing with the submarginal row of large rounded spots, beyond which is a marginal row of prominent smaller triangular spots in pairs, which latter are usually conjoined between the veins. Underside more uniformly fuliginous-black; marked as on upperside. Mimics the *female* of *Danisepa Rhadamanthus*.

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

THIRD FORM.—*Alcathœoides*, de Nicéville. Upperside. *Forewing* hair-brown,  
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the outer margin towards anal angle very slightly paler, and showing just the faintest trace of the discal band from the costa, which is present in *Isa*; the marginal dots and streaks present, but hardly visible. *Hindwing* hair-brown; a discal series of whitish spots between the veins, the four upper ones round and equal-sized, the fifth in the second median interspace larger and diffused inwardly, the one in the space below elongated into a streak, the one in the submedian interspace still longer and bifurcated outwardly; some obscure streaks on the abdominal margin above the anal angle. The usual whitish spots in pairs in the margin. Underside. Both wings paler, the inner margin of the forewing pale purple, the marginal streaks and spots more distinct than above. *Hindwing* with a discal series of even round whitish spots, somewhat blurred at the anal angle, marginal spots as above. Apparently mimics the Euplæine butterfly *Penoa Alcathoë*.

FOURTH FORM (Plate 204, figs. 1, 1a). Upperside brown, the basal area blackish. *Forewing* with very faint traces of a whitish-speckled elongated streak between the basal interspace of the middle and lower veinlets, beyond which are three lower submarginal whitish-speckled lunate spots situated between the upper median and submedian, below which is a similar elongated streak before the posterior angle, and beyond a complete marginal series of small distinct white spots. *Hindwing* with a lower discal series of white-speckled spots which partially coalesce with a submarginal row of more distinct spots, beyond which is a marginal row of prominent small white spots. Underside with an ill-defined discal series of whitish spots merging into more distinct white rounded submarginal spots, beyond which is a marginal row of prominent white spots. Underside uniformly brown, with all the spots as on upperside more distinctly defined.

Expanse,  $3\frac{2}{10}$  inches.

FIFTH FORM.—*Nyctelius*, Doubleday (Plate 204, fig. 1, b). Upperside purplish brownish-black. *Forewing* with the apical area broadly suffused with blue; a marginal series of small narrow oval purpurescent-whitish spots, disposed in pairs between the veins, and a less defined series of similar-coloured posteriorly-disposed submarginal rounded spots. *Hindwing* with the discal and outer interspaces broadly between the veins pale purpurescent-whitish, crossed by a submarginal shade and broken by a marginal series of dentate marks of the dark ground colour. Underside paler than above, with all the markings more clearly defined. A mimic of the Euplæine butterfly (?) *Penoa Alcathoë* or (?) *Trepsichrois Linnæi*.

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

SIXTH FORM.—*Cinnamomeus*, W. M. (Plate 204, fig. 1, c, d). “Upperside. *Forewing* purplish black-brown, darkest at the base and along the edges; glossed with steel-blue on the disc; a conspicuous suboval or subtriangular patch of changeable lilac-blue divided by the dark veins, commencing broadly just in front of the ultimate



subcostal fork, and rapidly narrowing to the inner angle, and with an indistinct submarginal series of small roundish white spots placed upon the inner edge of the narrow black-brown outer border, and extending from the inner angle up to the third median nervule. *Hindwing* black-brown of a richer tint, broadly and interdigitatingly bordered externally with clear cinnamon-brown, which is traversed by the dark brown veins, and bears, midway between the black base and the wavy purplish-black narrow outer border, a series of four impressed white specks all encircled internally with black-brown, one in each interspace from the first median to the second subcostal nervule, and, at its junction with the wavy black outer border, a similar but more complete series of white specks, two to each interspace (except the second, in which there are four, the middle one of the three being divided) from the internal nervule to the first subcostal nervule, and all roundish, except the first two, which present the form of linear marks parallel to the outer margin. Underside. Both wings cinnamon-brown, narrowly bordered externally with purplish black-brown, with the veins rich dark brown, and the submarginal spots more numerous and distinct than above. *Forewing* slightly darker for the basal two-thirds, with a short streak of pale lilac between the first and second median nervules near the base of the cell, and an ill-defined roundish clump of scales of the same colour beyond it, an externally forked streak of dark violet-blue occupying the basal two-thirds of the interno-median area, and followed by an indistinct clump of violet-grey scales, a grey streak in the apical half of the inner margin, and a submarginal series of violet-white spots situated upon the inner edge of the black outer border, and extending from the inner margin to the apex, with all the spots round, except the first six (which have the form of linear streaks) and the last, which is elongate, and arranged two in each interspace except the eighth from the apex, in which there are three, and the last, in which there is only one. *Hindwing* uniformly coloured, with a discal series of seven violet-white spots and dots, arranged in two series, an anterior curved one of three, and a posterior straight one of four, the three foremost of which latter, with the last of the anterior series, coincide with the four impressed spots of the upperside; and with a submarginal series of spots of the same colour, situation, and extent as in the forewing, but differing somewhat in shape, the last three being linear streaks parallel to the outer margin, and the rest more or less elongate, and those of each pair divergent externally as if they were the remaining outer ends or horns of lost lunules" (W. Mason, l.c.). Mimics the Euplæine butterfly *Peñoa Alcatheö*.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{1}{10}$ , ♀ 3 to  $3\frac{1}{2}$  inches.

HABITAT.—E. Himalayas; Assam; Silhet; Cachar; Manipur; Burma.

DISTRIBUTION.—"This species, with both female forms, *Isa* and *Cinnamomeus*, occur in Sikkim; there are males in the Indian Museum, Calcutta, from Silhet,

Cachar, Naga Hills and Sibsagar ; Mr. J. L. Sherwill has taken the female form *Isa* at Jorehat, Assam, in June ; Shillong, also type of *Cinnamomeus* taken in November by Mr. J. P. Cock ; and Upper Burma, taken by the Yunan Expedition. Mr. E. T. Atkinson records it from the outer ranges of the Himalayas of the N.W. Provinces" (de Nicéville, Butt. Ind. ii. 20). According to Mr. Elves (Tr. Ent. Soc. 1888, 336) "the female forms *Isa* and *Nyctelius*, are both found in the Sikkim valleys up to about 3000 feet, with the male, from April until the end of the year, but are not abundant at any season." In the Sikkim Gazetteer, 1894, 132, Mr. de Nicéville says : "In Sikkim the males are common, the females rarer. It occurs in the low valleys from March to November."

We possess males from Sikkim, from Burma taken in the Thoungyeen forests, Tenasserim, by Capt. Bingham, and from the Karen Hills taken by Signor Leonardo Fea, who also took it at Cheba in November. Of females we possess the *form 1* (*Isa*) from Sikkim, *form 2* also from Sikkim, and *form 6* from Sikkim and Rajpore. Specimens of the female (*form 2*) from Shillong are in Mr. P. Crowley's collection, Cherra Punji and Sikkim in Col. C. Swinhoe's collection. Of the female (*form 3*, *Alcathoëoides*), the typical specimen was taken in the Thoungyeen forests in Upper Tenasserim, in April, by Capt. C. T. Bingham. Of the *form 4*, a specimen from Cherra Punji is in Col. Swinhoe's collection. Of *form 5* (*Nyctelius*) the type, from Silhet, is in the British Museum collection. Specimens of this form, from Darjiling, were in Mr. W. S. Atkinson's collection. Col. C. H. E. Adamson (List Butt. Burm. p. 11) records it from "Arakan, Tenasserim and Bhamo, the males being very common on the lower ranges of hills from August to December. One female only seen and captured in Arakan, resembling *E. Rhadamanthus*." Burmese males, taken by Col. Adamson, on the underside of the hindwings, have the broad pale area of a dull pale testaceous colour, not yellow as in Sikkim specimens. A female, of the form *Isa*, is recorded from Tavoy (J. A. S. Beng. 1887, 422). Lieut. D. Thomson (J. Bombay N. H. Soc. 1890, 295), records its capture in the Chin-Lushai country during the Expedition, from the Chittagong side, in the winter of 1889-90.

**EURIPUS CONSIMILIS** (Plate 205, figs. 1, 1a, b, c, d, ♂ ♀).

*Hestina consimilis*, Westwood, Gen. of D. Lep. p. 281 (1850), ♀. Moore, Catal. Lep. Mus. E. I. C. i. p. 161 (1857).

*Euripus consimilis*, Wood-Mason, Journ. Asiatic Soc. Bengal, 1881, p. 85, pl. 4, fig. 3, ♀. Butler, Ann. Nat. Hist. 1882, p. 405. de Nicéville, Butt. of India, etc., ii. p. 17 (1886).

*Euripus Hallirotorius*, Westwood, Gen. D. Lep. p. 293 (1850), ♂. Moore, Catal. Lep. Mus. E. I. C. i. p. 199 (1857).

*Euripus meridionalis*, Wood-Mason, Journ. Asiat. Soc. Bengal, 1881, p. 86, pl. 4, fig. 2, ♀ (variety).

IMAGO.—Male. Upperside blue-black, with pale yellowish-white markings, as in



*E. Halitherses*, except that, in the *forewing*, the oblique spot at end of the cell is angulated, and of equal width across the cell, but is sometimes slightly broken in its middle; the transverse discal, submarginal, and marginal markings formed of slender short streaks disposed in pairs between the veins, the lower discal spot smaller, the lengthened streak between the median and submedian is bluish-white, entire in its length, and of nearly equal width throughout. On the *hindwing* the basal and discal yellowish-white interspaces are much broader and entirely, or partially, include the upper submarginal elongated marks, the lower submarginal spots being large and bright carmine. Underside. Ground colour blue-black, with markings as on upperside, those on the forewing being bluish-white, and those on the hindwing yellowish-white (but in a Burmese specimen in the collection of Colonel C. H. E. Adamson, the markings on the underside of the hindwing are dull pale testaceous), the hindwing also having the basal interspaces bright carmine.

Female. Upperside. Ground colour paler blue-black than in the male, with similarly disposed markings of a pale yellowish-white colour, or, in some specimens, of a pale pink-flushed bluish-white. *Forewing* with all the markings larger and broader, the two basal streaks conjoined, the upper discal and submarginal duplex streaks between the veins also conjoined, the streak below the median and that also below the submedian occupying the entire interspace and being blue-tinted at their base. *Hindwing* also with broader pale yellowish-white or bluish-white interspaces than in the male, the submarginal spots larger, broader, and all white. Underside as on the upperside, except that the basal interspaces of the hindwing are bright carmine.

VARIETIES.—Female. Some specimens have still broader markings on both wings, these markings being either pale-yellowish or bluish-white; on the hindwings, in some, also the markings are almost all obsolete, the black veins, a separated or connected cluster of speckles on the middle of the three medians and a marginal macular band being the only markings.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

HABITAT.—Himalayas; Assam; S. India; Burma; Siam.

DISTRIBUTION.—Of this species we possess males from Deyra Dhoon and Nepal, and females (with pale yellowish-white markings) from Deyra Dhoon and N. W. Himalayas; other females (with bluish-white markings) from Nepal, taken by the late General G. Ramsay, and also from Nowgong, Assam, taken by Mrs. Span. "The Indian Museum, Calcutta, possesses a pair of females taken by Col. Buckley at Masuri, two males from Buxa, Bhotan, one male from Sikkim, a female from Sikkim being in Mr. Otto Möller's collection; one female from the Thoungyeen forests, Upper Tenasserim, taken by Capt. Bingham, and a female from Trevandrum, Travancore. In Mr. W. Doherty's collection there are a pair taken in



December on a Peak 5000 feet near Potingi, Jaipur State, Eastern Ghats; a female without locality in Col. A. M. Lang's collection, and another from Cannanore, South India, in Col. J. H. McLeod's collection, and Mr. E. T. Atkinson records it as rare from the Outer Himalayas of the North-West Provinces" (Butt. Ind. ii. p. 18). Mr. W. Doherty (J. A. S. Beng. 1886, 124) records "two females from Jhulaghat, East Kumaon." Mr. H. J. Elwes (Tr. Ent. Soc. 1888, 335) says "this species rarely occurs in the Sikkim Hills, but in the Terai, and as far out in The Plains as Jalpaiguri, it has been taken by Mr. A. V. Knyvett and Mr. Otto Möller, in July, August, and September." Mr. L. de Nicéville (Sikkim Gazetteer, 1894, 132) says "this is one of the rarest of the butterflies of Sikkim. The male is always rarer than the female." Major C. H. E. Adamson (List Butt. Burm. p. 11) records "the capture of four males and one female in the Bhamo District; males taken in October and November, on the Sinkan River, and female in May." Mons. G. A. Poujade (Nouv. Arch. du Mus. 3rd ser. iii. p. 263, pl. ii. fig. 3) records and figures a female taken near Bangkok, Siam.

MIMICRY.—The males probably mimic the Limnaine butterfly *Tirumala Limniace*, and it is suggested by Mr. L. de Nicéville (Butt. Ind. ii. 18) that the females probably mimic species of the protected Pierine genus *Thyca*.

INDO-MALAYAN AND CHINESE SPECIES OF EURIPUS, ETC.—*Euripus Pfeifferæ*, Felder, Wien. Ent. Monats. 1860, p. 235, pl. 3, fig. 1, ♀. Distant, Rhop. Malay. p. 135, fig. ♀. *Syn.* E. Euplæoides, Felder, Reise Novara, Lep. iii. p. 415 (1866). Butler, Trans. Linn. Soc. Zool. 1877, p. 541. Distant, Rhop. Mal. p. 134, pl. 13, fig. 6, 7, ♂ ♀ (1883). *Habitat.* Malay Peninsula, Singapore, Sumatra.—*Euripus Borneensis*, Distant, Annals of Nat. Hist. 1887, p. 54, ♂ ♀. Mimics the Bornean Euplæine butterfly *Danisepa Lowei*. *Habitat.* Borneo.—*Euripus Clytia*, Felder, Reise Novara, Lep. iii. p. 415, pl. 55, fig. 7, ♀ (1866). Semper, Reisen Philip. Lep. p. 83, pl. 15, fig. 8, 9, ♂ ♀ (1887). *Habitat.* E. Mindanao.—*Euripus Ankæus*, Semper, l.c. p. 83, pl. 15, fig. 6, 7, ♂ (1887). *Habitat.* Philippines.—*Euripus Lucasoides*, Semper, l.c. p. 84, pl. 15, fig. 4, 5, ♀ (1887). *Habitat.* Mindanao.—*Euripus Nysia*, Semper, l.c. p. 84, pl. 15, fig. 11, 12, 13, ♂ ♀ (1887). *Habitat.* S. Mindanao.—*Euripus funebris*, Leech, Entom. 1891, Suppl. p. 27; Butt. of China, etc., p. 150, pl. 16, fig. 1, ♂ (1893). *Habitat.* W. China.

Genus ALDANIA. Male. *Forewing* elongated, narrow; costa slightly arched at the base, apex rounded; exterior margin oblique, slightly uneven; posterior margin much recurved from the base; first subcostal branch emitted at one-fifth before end of the cell, second branch at one-fifth beyond the cell, third at two-fifths; discocellulars short, curved outward; cell broad, open. *Hindwing* short, anterior margin convex, apex and exterior margin very convex, slightly uneven; precostal vein short and straight; subcostals and radial emitted from near costal vein; cell narrow, open.

*Body* very hairy ; palpi slender, clothed with very long slender hairs ; antennæ with a well-formed lengthened club ; eyes naked.—TYPE. A. Raddei.—*Aldania Raddei* (Diadema Raddei, Bremer, Bull. Acad. Petr. 1861, p. 467. Neptis Raddei, Bremer, Lep. Ost-Siberia, p. 18, pl. 1, fig. 9 (1864). *Habitat.* E. Siberia, Amurland.

### Group III. EUTHALIINA.

*Nymphalina* (part), Herr. Schæffer, Prod. Syst. Lep. p. 17 (1864). Distant, Rhop. Malayana, p. 83 (1882).

*Adoliades*, Butler, Catal. Fabrician Lep. Brit. Mus. p. 86 (1869).

*Nymphalidæ* (part), Doherty, Journ. As. Soc. Bengal, 1886, p. 110.

*Nymphalidæ* (Euthalia group), Staudinger and Schätts, Exot. Schmett. p. 163 (1887).

*Euthaliina*, Moore, Lep. Indica, ii. p. 225 (1895).

#### CHARACTERS OF THE GROUP EUTHALIINA.

IMAGO.—Robust. *Forewings* broad, triangular ; apex either obtusely pointed or rounded, or somewhat falcate ; exterior margin either slightly, but obtusely, scalloped, or nearly even. The costal vein either free in both sexes, or anastomosed to the first subcostal branch in both sexes, very rarely free in the male and anastomosed in the female. Cell in male either closed or open in both fore and hindwings, or rarely closed in the forewing and open in the hindwing. *Hindwings* short, broad, triangular or obovate, or sometimes subquadrate. Eyes naked ; very rarely hairy.

CATERPILLAR.—Head slightly cleft and spiny or minutely hairy. Body armed with either an erect subdorsal and a lateral row of branched-spines, or with only a lateral row of very long horizontally-projecting branched-spines.

CHRYSALIS.—Elongate and boat-shaped, with arched dorsum and bifid head, or short and stout, with conically triangulate medio-dorsal keeled prominence, and bifid head.

EGG.—Unknown.

HABITS OF THE IMAGO.—“The Euthalias have a bold flight, and settle with wings both closed and open, the former more especially when alarmed. They are particularly partial to the juices of over-ripe fruit” (de Nicéville, J. A. S. Beng. 1893, 45). “The commonest and most widely spread species of the group, *Euth. Garuda*, frequents mangoe trees, and usually settles with wings widely spread open, and, I think, is less common in the jungle than it is about human dwellings. It loves to bask on old grey walls, and may be found making itself happy in the dirtiest part of the Native Town. I am quite sure it prefers the liquids which it sips from the roadside gutter to the nectar of any flower” (Aitken, J. Bombay N. H. S. 1886, 134). “The species of Parthenos have a very beautiful and characteristic

flight, unlike any other butterfly known to me. It is very strong on the wing, and flies over high bushes and trees, and alights on the upperside of the leaves with open wide-spread wings. When flying it keeps the wings very level and parallel with the ground, the tips or apices of the forewings slightly depressed, it flaps the wings but seldom, and is much given to soaring" (de Nicéville, J. A. S. Beng. 1895, 414).

MIMICRY, AND PROTECTIVE RESEMBLANCE, IN IMAGO.—Mr. W. Doherty notes (J. A. S. Bengal, 1889, 122) *Kirontisa Telchinia* as being a "mimic." In general coloration and pattern of markings there is a similarity to species of *Cynitia*, which is an allied and apparently a "protected" genus of the present group. According to the observations of Mr. L. de Nicéville, "the *Tasinga anosia*, which is generally found in river beds, where it is fond of resting with outspread wings on the face of large boulders, and from which [owing to its greenish-grey and mottled appearance] it is then scarcely distinguishable" (Sikkim Gazetteer, 1894, 144).

In addition to the genus *Cynitia*, as above noted, the species of the genus *Nora* are also, apparently, "protected"; the males, in both these genera, possessing a conspicuous *patch of glandular scales* at the base of the upperside of the hindwing.

HABITS, AND PROTECTIVE RESEMBLANCE, OF LARVA.—"The larvæ of the genera *Euthalia* and *Symphædra* are amongst the most remarkable in butterflies. Projecting from the body all round are long widely-branched spines somewhat resembling fern fronds. These spines spring in a single row from the sides, and when at rest on the surface of a leaf lie flat upon the leaf. The larvæ are usually green, and though so conspicuous-looking when separated from their natural surroundings, are exceedingly well-hid and difficult to see when at rest in their usual position in the middle of a leaf. I have often found the larvæ of *Euth. Garuda* at rest on the middle of a mangoe leaf, in which position it is very difficult to see, its body with the pale dorsal line answering to the midrib of the leaf, while the lateral branched spines pass for the other veins of the leaf on which it is resting, forming a remarkable instance of protective coloration, structure, and habit combined" (de Nicéville, Butt. India, ii. pp. 3, 192).

KEY TO THE INDIAN (AND INDO-MALAYAN) GENERA OF EUTHALIINA.

A. *Costal vein of forewing free, in male and female.*

a. *Cell of forewing and of hindwing closed.*

. a. *Eyes naked* . . . . . PARTHENOS. BASSARONA.<sup>1</sup> RANGASA.<sup>2</sup>  
NEUROSIGMA. DOPHILA.<sup>3</sup> LIMBUSA.<sup>4</sup>  
MAHALDIA.<sup>5</sup>

b. *Eyes hairy* . . . . . STIBOCHIONA. DICHORRAGIA.



- b. *Cell of forewing closed, of hindwing open.*
  - a. *Eyes naked* . . . . . ABROTA.
- c. *Cell of forewing and of hindwing open.*
  - a. *Eyes naked* . . . . . SYMPHEDRA.<sup>6</sup> KIRONTISA.<sup>7</sup> SONEPISA.<sup>9</sup>  
EUTHALIA.<sup>10</sup> CHUCAPA.<sup>12</sup>
- B. *Costal vein of forewing free in male, anastomosed to first subcostal branch in female.*
  - a. *Cell of forewing and of hindwing open.*
    - a. *Eyes naked* . . . . . NORA.<sup>8</sup> TASINGA.<sup>11</sup>
- C. *Costal vein and first subcostal branch of forewing anastomosed, in male and female.*
  - a. *Cell of forewing and of hindwing closed.*
    - a. *Eyes naked* . . . . . ZALAPIA.<sup>13</sup> LABRANGA.<sup>14</sup>
  - b. *Cell of forewing closed, of hindwing open.*
    - a. *Eyes naked* . . . . . LEXIAS.<sup>15</sup> ADOLIAS.<sup>16</sup> MARTHISA.<sup>17</sup>  
SENADIPA.<sup>18</sup> CAMARAGA.<sup>19</sup> CYNITIA.<sup>20</sup>
  - c. *Cell of forewing and of hindwing open.*
    - a. *Eyes naked* . . . . . TANAECIA.<sup>21</sup> PASSIRONA.<sup>22</sup> SAPARONA.<sup>23</sup>  
HARAMBA.<sup>24</sup> BUCASIA.<sup>25</sup>

1 Type <i>Teuta</i> .	6 Type <i>Nais</i> .	11 Type <i>Anosia</i> .	16 Type <i>Dirtea</i> .	21 Type <i>Pulasara</i> .
2 „ <i>Dunya</i> .	7 „ <i>Telchinia</i> .	12 „ <i>Franciæ</i> .	17 „ <i>Canescens</i> .	22 „ <i>Amisa</i> .
3 „ <i>Evelina</i> .	8 „ <i>Kesava</i> .	13 „ <i>Patala</i> .	18 „ <i>Satrapes</i> .	23 „ <i>Cibaritis</i> .
4 „ <i>Nara</i> .	9 „ <i>Kanda</i> .	14 „ <i>Durga</i> .	19 „ <i>Damalis</i> .	24 „ <i>Appiades</i> .
5 „ <i>Sahadeva</i> .	10 „ <i>Lubentina</i> .	15 „ <i>Æropus</i> .	20 „ <i>Phlegethon</i> .	25 „ <i>Calliphorus</i> .

Genus PARTHENOS.

*Parthenos*, Hübner, Verz. bek. Schmett. p. 38 (1816). Moore, Lep. of Ceylon, i. p. 46 (1881).  
Distant, Rhop. Malayana, p. 143 (1883). de Nicéville, Butt. of India, etc., ii. p. 147 (1886).  
Semper, Reisen, Phil. Lep. p. 97.  
*Minetra*, Boisduval, Voy. Astrolabe, Lep. p. 126 (1832). Westwood, Gen. D. Lep. p. 265 (1850).

IMAGO.—Male. Wings large, broad. *Forewing* triangular; costa very slightly curved, apex rounded, exterior margin oblique and slightly scalloped, posterior margin short, angle convex; costal vein extending to two-thirds of the costal margin, free from the subcostal in both sexes; first and second subcostal branches somewhat undulated, the first subcostal emitted before one-half length of the cell, second at one-sixth before the end, third at half length beyond the cell and curved upward, running close along second for some distance and ending at the apex, fourth and fifth on a short footstalk starting from near base of the third; cell long, narrow; upper discocellular extremely short, bent immediately below the subcostal, middle discocellular inwardly oblique and straight, lower discocellular concave and directed inward, radials from the upper and lower angles; upper median veinlet bent convexly upward beyond the cell and then extending parallel and at equal distance 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 scalloped, produced outward below the middle; costal vein much arched from the base and extending to the apex; precostal vein distinct, extending parallel with and joined to the costal—thus forming a closed precostal cell—and there throwing off a short bifid spur, towards the costa, immediately before its junction with the costal vein; cell very short; first and second subcostal branches emitted at about equal distances from upper base of cell; upper and lower discocellulars outwardly-oblique, each slightly concave, lower discocellular slender, radial from their middle; two upper median branches emitted 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 vein straight, short. *Body* stout, abdomen short; palpi ascending, pilose beneath and above at tip 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. Eyes naked. Sexes alike.

CATERPILLAR.—Cylindrical. Head and anal segment minutely spined, other segments with minute sublateral spines; third to twelfth segment each armed with erect subdorsal rather long branched-spines.

CHRYsalis.—Boat-shaped; dorsum and thorax arched and somewhat sharply keeled; wing cases also keeled in front; head ending in two obtuse points. Suspended perpendicularly.

TYPE.—*P. Sylvia*.

HABITS OF IMAGO.—“All the species of this genus have a very beautiful and characteristic flight, unlike any other butterfly known to me. It is very strong on the wing, and flies over high bushes and trees, and alights on the upper side of the leaves with open wide-spread wings. When flying it keeps the wings very level and parallel with the ground, the tips or apices of the forewings slightly depressed, it flaps the wings but seldom, and is much given to soaring. The Sumatran form (*P. liacinus*), Dr. Martin says, ‘occurs all the year round at low elevations; it is rare, but is not easy to capture. It is found not only in high forest, but also in small strips of forest and jungle always accompanying the smaller streams. It is very fond of, and is only found, near water. It was noticed settling in considerable numbers on the flowers of a snow-white lily, covering the banks of the Bedageri River, and a fine series of specimens were captured on the flowers of some male Papaya trees planted at the Batoe Mandi Estate, on the high bank of the Wampoe River’” (L. de Nicéville, Journ. As. Soc. Bengal, 1895, p. 414). Mr. W. B. Pryer records the following observations on the N. Bornean species—“Parthenos sails by a flowering bush, on down-pointed nearly stationary wings, or keeps flying from and to the flowers in small circles, and indulges in frequent flights with its own species” (Ann. Nat. Hist. 1887, 42).



**PARTHENOS VIRENS** (Plate 206, figs. 1, 1a; larva and pupa, 1b, c, ♂ ♀).

*Parthenos virens*, Moore, Annals of Nat. Hist. 1877, p. 47. de Nicéville, Butt. of India, etc., ii. p. 149 (1886). Davidson, Journ. Bombay N. H. Soc. 1890, p. 274, pl. B, figs. 3, 3a, larva and pupa.

IMAGO.—Male and female. Upperside with the ground colour uniformly ænescent-green. *Forewing* with the two outer cell-marks nearly opaque and greenish-white, the transverse discal semidiaphanous white macular band interrupted, broadly separated by black veins, the portions smaller and shorter than in *P. Gambrisius*, the two median spots rounded, the submedian very small and round; the marginal black bands broad. *Hindwing* with the black basal bands narrower, the inner discal spots prominent, the outer discal duplex-marks shorter and broader, the submarginal spots broadly conical, and the marginal band broad, these three latter series thus showing narrower interspaces. Underside somewhat darker than in *P. Gambrisius*. *Forewing* with the markings more broadly black-bordered, the marginal bands broader, macular, and black. *Hindwing* with the markings blacker and more broadly defined.

Expanse, ♂ 4 to  $4\frac{4}{10}$ , ♀  $4\frac{5}{10}$  inches.

CATERPILLAR.—Cylindrical. Head and anal segment minutely spined, other segments with minute sublateral spines; third to twelfth segment each armed with erect subdorsal rather long branched-spines. Colour olive-green, with a sublateral pale yellow band; head and spines purplish; feet brownish. (Taken from the original drawing made in Kanara by the late S. N. Ward, and from the published figure by Mr. J. Davidson.) Mr. Ward, in MS. Notes, fully describes the larva, probably taken just previous to pupation, as the colours given differ from his original drawing, which also includes the pupa and imago, as follows:—"August 6th. Larva. Head dull yellow-brown; back ditto, but more brown; sides brownish-purple, upper part yellow, middle all through lighter, purple below; back and sides covered with minute white spots. A ridge of four-branched spines purple at top with others below are inserted just along top of the back, those on 3rd, 4th, 10th and 11th segments being longer than the others, those on the 3rd longest of all. A single spine (forked) on the 3rd and 4th segments, and single on rest of the other segments just above the yellow mark, and a line of plain white spines at the bottom of it, four on each joint, of which the 4th is far the longest, and a shorter row just above the feet of which the two middle are longest. The anal segment thickly set with single spines; head ditto, some black, some white. Feet light brown, except anal, which are black and shining. Changed to pupa August 9th. Imago emerged August 12th."

CHRYSA LIS.—Boat-shaped; dorsum and thorax arched and somewhat sharply keeled; wing cases also keeled in front; head ending in two obtuse points. Colour uniformly brown. Suspended perpendicularly.



HABITAT.—South India.

DISTRIBUTION.—“This is not by any means a rare butterfly in forest country in the North Kanara District, especially towards the end of the rainy season” (J. Davidson, J. Bombay N. H. S. 1896). Mr. S. N. Ward records it as “tolerably common above the Ghâts, at Mangalore, Sircy, and Calicut, where I have found the larva not unfrequently about August or a little later” (MS. Notes). Also “common on the lower slopes of the Travancore Hills up to 1000 to 2000 feet” (H. S. Ferguson, J. Bombay N. H. S. 1891, p. 9). It is common on the Western slopes of the Nilgiris, and occurs throughout the District as a rare straggler” (G. Hampson, J. A. S. Beng. 1888, 354). “There are numerous specimens in the Indian Museum, Calcutta, from Calicut, and Trevandrum. It also occurs in the Wynaad and North Kanara” (Butt. India, ii. 149).

HABITS OF IMAGO.—“Its grand spread of wing and bold flight always arrests attention. The manner of its flight is the same as that of *Limenitis*, *Athyma*, and some other genera,—a jerky stroke at short intervals between which the wings are held stiffly outstretched and pointing a little downwards, but those genera lack the power of *Parthenos*. Sometimes a solitary one is met with travelling across open plains, but we do not know that it migrates” (Davidson, l.c.).

FOOD-PLANT.—Mr. Davidson says (J. Bomb. N. H. S. 1890, 274), “We got only a few larvæ in September and October, and had difficulty in rearing them owing to the scarcity, in the vicinity of Karwar, of its food-plant, a creeper, with large thick elliptic leaves, belonging, we believe, to the Cucurbitaceæ.”

Of our illustrations of this species on Plate 206, fig. 1 is a reproduction of Mr. Davidson's drawings of the larva and pupa in the Bombay Nat. Hist. Society's Journal; fig. 1a is a copy of the late Mr. Ward's Calicut drawing of the larva and pupa, and fig. 1b, c, that of the male upperside and female underside.

**PARTHENOS GAMBRISIUS** (Plate 207, figs. 1, 1a, ♂ ♀).

*Papilio Gambrisius*, Fabricius, Mant. Ins. p. 12 (1787); Ent. Syst. iii. 1, p. 85 (1793), ♀.

*Minetra Gambrisius*, Doubleday, Catal. Lep. Brit. Mus. pt. 1, p. 86 (1844). Butler, Catal. Fabr. Lep. B. M. p. 101 (1869).

*Parthenos Gambrisius*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 148 (1857). de Nicéville, Butt. of India, etc., ii. p. 147 (1886).

*Parthenos apicalis*, Moore, Proc. Zool. Soc. 1878, p. 829.

IMAGO.—Male and female. Upperside dark olive-green; cilia alternately black and white. *Forewing* with two short black streaks from the base, the upper one extending along both sides of the median vein to its first branch and giving off within the cell a curved fine line to the subcostal veinlet, followed across the cell by

two outwardly-oblique lines, which are joined posteriorly, then by a semihyaline bluish-white band, a black triangular space, and then another triangular semihyaline triangulate mark, the latter outwardly defined by a fine black line following the discocellular veinlets; beyond the cell is an outwardly-triangular semihyaline bluish-white spot situated between the base of the lower radial and upper median veinlet; the disc is crossed by an inwardly-oblique semihyaline bluish-white band, composed of irregular shaped continuous spots disposed between the veinlets, and all defined by the black slender veins and outer edges, those spots above the lower radial being elongated, the three lower shorter and broader, the lowest small and constricted; in some specimens, of both sexes, the narrow upper white portion extends, opaquely, along the costal border to the apex (*as in the Fabrician type female specimen of Gambrisius*), and there is a more or less incipient white small spot in front of the lower subcostal one. Beyond this bluish-white macular band is a submarginal and a marginal black band, both bands being somewhat macular, the former with an inner additional slender sinuous portion at its lower end; the lower discal interspace between the median and posterior margin being slightly suffused with pale lilac. *Hindwing* crossed by a short black basal, a narrow inner subbasal, followed by a broader outer subbasal band, then by a discal band of small dentate spots increasing in size posteriorly, an outer discal series of slender double-pronged marks, the intervening veins being black-bordered; a submarginal row of acutely-pointed dentate spots and a marginal lunulated band; from the middle of the costa, between the outer subbasal and discal band, are two short white lunular spots; the upper discal interspaces slightly suffused with pale blue. Underside much paler olive-green. *Forewing* with all the markings similar, but less prominent. *Hindwing* crossed by a slender black irregular wavy discal line, and a subbasal short line between the costal and subcostal vein, followed by an inner discal series of very ill-defined black-speckled lunules, then an outer discal series of pale bordered black-speckled duplex-marks, the upper one of which latter is the largest and most prominent, afterwards is a submarginal series of lunules and marginal spots, the latter being disposed at end of the veins. *Body* above dark olive-green; thorax and abdomen crossed by black bands; body beneath, palpi and legs olivescient-white; apex of palpi above olivescient-brown; antennæ blackish-brown; eyes red-brown.

Expanse, ♂  $3\frac{8}{10}$  to  $4\frac{2}{10}$ , ♀  $4\frac{6}{10}$  inches.

HABITAT.—Eastern Bengal; Assam; Silhet; Cachar; Burma; Tenasserim.

DISTRIBUTION.—The late Captain Mortimer J. Slater (MS. Notes, p. 244) remarks, "I met with this insect (*P. Gambrisius*) at Dacca, in the deepest jungle. Its flight is rapid and dodgy, and in consequence is very difficult to capture on the wing." Mr. L. de Nicéville (Butt. Ind. ii. 147) records it from Eastern Bengal, Shillong, Assam, Silhet, Cachar, and Upper Tenasserim. Mr. Wood-Mason obtained

numerous specimens at "Silcuri in Cachar in the summer months." Major C. H. E. Adamson (List of Burmese Butt. 16, 1889) says, "It is common throughout Burma, appearing at all seasons of the year, and is a very rapid flyer from tree to tree." It has been taken in Chittagong in October. Dr. Manders (Tr. Ent. Soc. 1890, 523) records it as "common in the Shan States, Burma, at the end of the rains, and occurs from 3000 to 8000 feet elevation." Signor Leonardo Fea took it in Rangoon, in December, and in the Karen Hills in November. Mr. O. Limborg took it "above Ahsown; Taoo, at 3000 to 5000 feet in Upper Tenasserim" (P. Z. S. 1878, 829). Capt. E. Y. Watson also found it not uncommon at Rangoon and Beeling. Capt. Bingham obtained it at Minthantoung in December, and also in the Donat Range and Thoungyeen forests in Upper Tenasserim. Dr. J. Anderson obtained it at "Minthantoung in December, and on Sullivan Island, Mergui Archipelago, in January" (Journ. Linn. Soc. Zool. 1886, 35).

**PARTHENOS ROEPSTORFFII** (Plate 207, fig. 2, ♂).

Male and female. Differs from typical Burmese *P. Gambrisius*, on the upper-side of both sexes, in the ground-colour of both wings being of a more uniformly yellowish olive-green colour, without any trace of the lilacine or greyish blue; the transverse bluish-white spots on the forewing are comparatively smaller, and the submarginal black fascia more macular.

Expanse, ♂  $3\frac{4}{10}$  to 4, ♀  $4\frac{2}{10}$  inches.

HABITAT.—S. Andamans; Nicobars.

Numerous specimens were taken at Port Blair, S. Andamans, by the late Mr. F. de Roepstorff, from whom we personally received several specimens of both sexes. Mr. W. Doherty (J. A. S. Bengal, 1886, 260) records it, as *P. lilacinus*, from the Great Nicobars. Scarce.

**PARTHENOS CYANEUS** (Plate 208, figs. 1, 1a; larva and pupa, 1b, c, ♂ ♀).

*Parthenos cyaneus*, Moore, Annals of Nat. Hist. 1887, p. 46; Lep. of Ceylon, i. p. 46, pl. 24, figs. 1, 1a (1881). de Nicéville, Butt. of India, etc., ii. p. 149, pl. 21, fig. 95, ♂ (1886).

IMAGO.—Male and female. Upperside with the ground-colour uniformly greyish-blue, the black markings prominent and distinct. *Forewing* with the bluish-white markings very prominent, the transverse discal series interrupted and broadly separated by black veins, the posterior spot small; marginal band broad, confluent anteriorly. *Hindwing* with the two black subbasal bands and inner-discal band macular, the discal duplex linear-marks narrow, the submarginal series narrowly lunular, and the marginal band narrow. Underside pale greyish-green, markings similar to *P. virens* but somewhat less prominent.



Expanse, ♂ 4, ♀  $4\frac{5}{10}$  inches.

CATERPILLAR.—Cylindrical; pale yellowish purplish-brown, darker beneath, with dark brown longitudinal dorsal lines, and transverse white-dotted segmental lines; head and legs dark brown; head and anal segment spined; other segments slightly hairy; third to twelfth segments armed with erect rather long subdorsal dark purplish branched-spines, which are longest on the 3rd, 4th, 11th and 12th segments. "Feeds on Modecca" (Thwaites).

CHRYSLIS.—Boat-shaped; pale purplish-brown; head pointed and cleft.

HABITAT.—Ceylon.

DISTRIBUTION AND HABITS.—"Occurs everywhere. Plains and up to 6000 feet elevation, in forest land, I believe all the year round. A slow flyer, rather shy; sits on large leaves with wings expanded" (Hutchison). Common at Galle and Kandy (Capt. Wade). Very swift of flight and difficult to capture (Mackwood).

INDO-MALAYAN SPECIES.—*Parthenos Sylla* (Papilio Sylla, Donovan, Ins. of China, pl. 38 (1798). *Syn.* Minetra Gambrisius, Doubleday and Hewitson, Gen. D. Lep. pl. 51, f. 2 (*nec* Fabricius). Parth. lilacinus, Butler, Trans. Linn. Soc. Zool. 1877, p. 544. Distant, Rhop. Malayana, p. 143, pl. xi. fig. 7, ♀. de Nicéville, Journ. As. Soc. Bengal, 1895, p. 414. Male and female. Upperside. Ground-colour darker than in typical *P. Gambrisius*, all the black markings more intensely defined and broader. Forewing with the semidiaphanous bluish-white discal macular band more widely broken and composed of smaller portions, both the subapical, discoidal, and median, and each broadly divided by black-bordered veins; the lower discal interarea of the forewing and between the basal, subbasal, and discal band of the hindwing prominently suffused with deep lilacine-blue. Expanse, ♂ 4, ♀  $4\frac{2}{10}$  inches. *Habitat.* Malay Peninsula, Sumatra.—*Parthenos Sylvia* (Papilio Sylvia, Cramer, Pap. Exot. i. pl. 43, figs. F, G (1776). *Habitat.* Java.—*Parthenos Javaensis*, Staudinger, Lep. List, 1896, p. 31. *Habitat.* Java.—*Parthenos Nella*, Swinhoe, Annals of Nat. Hist. 1894, p. 429. *Syn.* ? *P. Borneensis*, Staudinger, Lep. List (1896), p. 31. *Habitat.* Sarawak, Borneo.—*Parthenos Salentia*, Hopffer, Stett. Ent. Zeit. 1874, p. 35. Snellen, Tijds. Ent. 1878, p. 13. Semper, Reise Phil. Lep. p. 97, pl. 19, fig. 1-4, ♂ ♀. *Habitat.* Philippines.—*Parthenos Philippensis*, Staudinger, Lep. List (1896), p. 31. *Habitat.* Philippines.—*Parthenos Aruana*. Differs from typical *P. Sylvia* on the upperside in the ground-colour of the forewing being dark olive-green, except a well-defined area below the median vein, which is, as well as the hindwing, of a cuprescent brown colour; the transverse series of discal bluish-white spots are also much smaller and wider separated, the posterior spot being very small. On the hindwing the submarginal black band is formed by a continuous series of broad lunules. On the underside the ground-colour is

uniformly pale olive-green, the basal area of the hindwing being also of that colour. Expanse, 4 inches. *Habitat.* Aru (Wallace). Coll. Moore.

### Genus SYMPHÆDRA.

*Symphædra*, Hübner, Verz. bek. Schmett. p. 39 (1816); Zuträge, List, p. 7, f. 1, 2 (1818).

Doubleday, List Lep. B. M. i. p. 105 (1844). Moore, Lep. of Ceylon, i. p. 34 (1881).

*Symphædra* (part),\* Westwood, Gen. D. Lep. ii. p. 294 (1850). Butler, P. Z. S. 1868, p. 612.

Distant, Rhop. Malay. p. 112 (1883). de Nicéville, Butt. of India, etc., ii. p. 135 (1886).

*Adolias* (sect. 10), Felder, Neues Lep. p. 35 (1861).

**IMAGO.** Wings short, broad. *Forewing* triangular; costa regularly arched, apex obtuse, exterior margin very slightly scalloped; cell short, open, upper end extending to one-third the length of wings, broad; first subcostal branch free in both sexes; first and second subcostals emitted before end of the cell, first at one-third before the end, the third at one-fifth and fourth and fifth at two-thirds beyond; upper discocellulars very short, convexly angular, lower entirely absent, the cell being perfectly open, the radials from the angles of upper discocellulars; lower median branch emitted opposite the discocellulars, the two upper medians at some distance beyond; submedian straight. *Hindwing* rather short, broadly triangularly-oval, apex and exterior margin very convex, slightly scalloped, abdominal margin short; costal vein very concave at the base and with a short curved precostal spur; cell short, open; lower subcostal emitted at one-seventh from the base of upper; the discocellular from near base of lower subcostal; lower median emitted from beyond opposite to discocellular. *Body* small; palpi porrect, small, compactly pilose, apex short, pointed; legs squamose; forelegs slender; antennæ long, with a rather stout club. Eyes naked. Sexes alike.

**CATERPILLAR.**—Slightly tapering towards both ends; the sides armed with a row of ten horizontally projected very long fleshy spines numerous covered with fine hairs of a non-irritating character.

**CHRYsalis.**—Short, broad; dorsum keeled; broadly triangular across the middle; head bifid.

**EGG.**—Unknown.

**TYPE.**—S. Nais.

**SYMPHÆDRA NAIS** (Plate 209, figs. 1, 1a; larva and pupa, 1, b, c, d, e, f, g, ♂ ♀).

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

*Symphædra Nais*, Kirby, Syn. Catal. D. Lep. p. 746 (1877). Moore, Lep. of Ceylon, i. p. 35 (1881).

de Nicéville, Butt. of India, ii. p. 186 (1886).

\* The Malayan butterfly described as *Argynnis Emalea*, Guérin, Deless. Voy. l'Inde, ii. 72 (1843), and referred to the genus *Symphædra* by Kirby (Catal. p. 259), by Distant (Rhop. Malay. p. 114), and by de Nicéville (Butt. India, ii. p. 187), is unquestionably a species of *Cirrochroa*.



*Papilio Thyelia*, Fabricius, Ent. Syst. iii. 1, p. 142 (1793). Jones, Icones, v. pl. 83, fig. 2. Donovan, Ins. India, pl. 31, fig. 3 (1800).

*Argynnis Thyelia*, Godart, Encycl. Méth. ix. p. 257 (1819).

*Symphædra Alcandra*, Hübner, Verz. bek. Schmett. p. 40 (1816); Zuträge, Exot. Schmett. i. p. 7, figs. 1, 2 (1818).

*Symphædra Thyelia*, Doubleday, List Lep. B. M. i. p. 105 (1844). Westwood, Gen. D. Lep. ii. p. 295, pl. 42, fig. 6 (1850). Butler, Catal. Fabr. Lep. B. M. p. 87. Forsayeth, Trans. Ent. Soc. Lond. 1884, p. 384, pl. 14, fig. 3, 3a, larva and pupa.

IMAGO.—Male and female. Upperside fulvous-red; cilia black, alternated with white. *Forewing* with a large oblique broad black discocellular spot, a contiguous discal spot, an oblique subapical streak, a transverse narrow submarginal and a lunular band, the two latter joined by black streaks on the veins. *Hindwing* with a large black medial costal spot, a submarginal curved row of small round spots, and broad marginal band, the black slightly ascending the veins; sometimes a black dot is present within the cell area. Underside, brownish-ochreous. *Forewing* with the discal area pale ochreous-red, two discoidal black ringlet-marks bordered between by white, a large black contiguous discal spot, an oblique short subapical yellowish-white macular band bordered inwardly with dark brown, followed by lower submarginal black lunules. *Hindwing* with a yellowish-white medial transverse discal band, which varies in width and is sometimes more or less broken, or consists of a costal and lower spots, or a costal spot only, and is sometimes entirely absent; two small discoidal red-centred black rings, and a submarginal row of small black points. *Body* fulvous-red; palpi above brown, red beneath; legs fulvous-grey; antennæ black, tip with red.

Expanse, ♂  $2\frac{5}{10}$ , ♀  $2\frac{8}{10}$  inches.

CATERPILLAR.—Slightly tapering towards both ends; colour light green, with a dorsal row of purple spots, the sides armed with a row of ten very long horizontally projected fleshy spines numerous covered with fine green hairs of a non-irritating character.

CHRYSLIS.—Short, broad; dorsum keeled; broadly triangular across the middle; head bifid; colour green, with dark and gold spots and lines.

HABITAT.—Lower Himalayas; Plains of India, except North-West; Ceylon.

DISTRIBUTION.—“This is a butterfly found commonly in the Plains of India, except the north-west, but very rarely in the Hills. It occurs very sparingly in Sikkim, but Mr. G. C. Dudgeon has taken it on the outer spurs of Daling facing the Western Duars” (de Nicéville, Sikkim Gazetteer, 1894, 142). We possess a specimen labelled Kausali, N.W. Himalaya. Rev. J. Hocking “found it in the Kangra District, generally; banks of the Beas, about 2000 feet elevation” (P.Z.S. 1882, 239). Mr. W. Doherty obtained it “at Haldwani in the Terai, 1000 feet, Kumaon” (J. A. S. Beng. 1886, 124). It occurs in Oudh, and plentifully in the



Rajmahal Hills" (de Nicéville, Butt. Ind. ii. 187). It has been taken at Barrackpore by Mr. J. Rothney and at Balasore, near Calcutta, by Mr. A. Grote, and also in Calcutta; in Sahibgunj by W. B. Farr, and in Maungbhoom, Lower Bengal, by the late Capt. R. C. Bevan. "It occurs in Orissa, and thence throughout the South of the Peninsula to Ceylon, and up the West Coast as far as Bombay, but not apparently in the Punjab. It apparently thrives best in open and moderately dry country" (de Nicéville, l.c. 187). Mr. W. C. Taylor records it as "common at Khorda, in Orissa" (List, p. 6). The late Sir Walter Elliot obtained it in the Madras District, and found the larva feeding on *Diospyros*, in October, 1850. Capt. E. Y. Watson found it "common in Mysore at Kolar in October and January" (J. Bomb. N. H. S. 1890, 5). Mr. G. F. Hampson took it in "the Nilgiris, in bamboo jungle, from 1000 to 3000 feet elevation" (J. A. S. Beng. 1888, 354). Mr. Lindsay took it in Koonoor. Messrs. Davidson, Bell, and Aitken (J. Bombay N. H. S. 1895, p. ?) say, "this is almost unknown on the West Coast, but common enough above the Ghauts. The larva feeds on *Diospyros melanoxylon*—the 'Ebony' tree (Ebenaceæ)." The late Mr. S. N. Ward obtained it in Kanara. Mr. E. H. Aitken (J. Bombay N. H. S. 1886, 134) also says, "I have not met with it in Bombay, but it is not uncommon at Uran, only five miles from Bombay, and may be found, I dare say, throughout the low jungles of the Tanna District. I think its chief season is the close of the Monsoon, but I have found it in May. There is some difference in the depth of colour in specimens from the same region." Colonel C. Swinhoe "found it common in Mhow, Central India, from October to July" (P. Z. S. 1886, 425); and in "Belgaum and Poona in April" (*id.* 1885, 130); also found in Wangui, Thanah District, in December (Swinhoe). It is also found in Ceylon.

LIFE HISTORY.—Dr. R. W. Forsayeth (Trans. Ent. Soc. Lond. 1884, p. 384, pl. 14, figs. 3, 3a) figures, and describes the larva and pupa as follows:—"Mhow, November 5th, 1879. Larva brought in by a native, who stated that it fed on the 'Tendu' tree, a large tree somewhat resembling the Ash. General colour a light grass-green; a row of purple spots along centre of back; margins of body armed with long, horizontal, fleshy processes covered with fine green hairs of a non-irritating character. Movements regular. November 12th. Changed to chrysalis last night. Chrysalis angular, green, with dark and gold spots and lines. Suspended head downwards, no thoracic band. Subsequently, in November, I obtained several more larvæ and pupæ, and on December 1st, note that another larva has become a pupa during the night. January 6th, 1880. Imago of last noted pupa came out this afternoon. The pupa was not kept in the sun or exposed to its influence."

The late Sir Walter Elliot, in his MS. Notes on Madras Lepidoptera, made in 1850, writes of this species: "Pupa, October 2nd. Imago emerged on the 17th.

Larva found on *Diospyros montanus*. The dorsal row of ocellate spots, ten in number, were formed of a narrow outer circle of indigo-blue, within which was a lilac or plum-coloured shade passing into a deeper sienna-red in the centre; the first and last spots were very small and the colours not distinct."

HABITS OF IMAGO.—Mr. E. H. Aitken says, "in habits this is a *Junonia*, or perhaps, I should rather say, a *Pyrameis*. It flies low and alights generally on the ground, where it basks with wings expanded" (J. Bombay N. H. S. 1886, 134). Mr. J. Betham observes, "this sprightly little butterfly looks something like a *Fritillaria* in colour. It has a quick and jerky flight, something like that of the *Junonia*. Its habits are very much the same as *J. Orithyia* and *O. Lemonias*, and it is very fond of sugar and Mhowa refuse" (J. Bombay N. H. S. 1890, 284).

Of the illustrations of this species on our Plate 209, fig. 1 is from the late Sir W. Elliot's drawing of the larva; fig. 1b, a copy of Dr. Forsayeth's drawing of the pupa (l.c.); fig. 1, b, c, upperside of male and female, and fig. 1 d, e, f, g, undersides of males.

MALAYAN ALLIED GENUS.—GENUS LEXIAS, Boisduval, Voy. Astrolabe, Ins. p. 125 (1832). Male. *Forewing* triangular; costa arched towards the end, apex rounded, exterior margin almost even and slightly concave in the middle; first subcostal veinlet emitted at one-half before end of the cell and anastomosed to the costal for a short distance before end of the latter; second subcostal emitted at one-fifth before end of the cell, third emitted at one-sixth beyond the cell and anastomosed to the second for a short distance before the end of the latter; cell closed; middle discocellular concave, lower nearly straight; middle median emitted at some distance before lower end of the cell. *Hindwing* broadly ovate, exterior margin almost even, convex posteriorly; cell open. Eyes naked. TYPE. L. *Æropus*.—*Lexias Æropus* (Pap. *Æropus*, Linn. Syst. Nat. 1758, p. 475. Cramer, ii. pl. iii. figs. F. G.), Doubleday and Hewits. D. Lep. pl. 43, fig. 6, ♂ (1850). Staudinger, Iris, 1895, pl. 3, figs. 12, 13, larva and pupa. *Habitat*. Batchian; Ceram.—*Lexias Panopus* (*Lexias Panopus*, Felder, Wien. Ent. Mon. 1861, p. 302; *Adolias Panopus*, Feld. Reise Nov. Lep. iii. pl. 58, figs. 2, 3 (1867). Semper, Reisen Phil. Lep. p. 95, pl. 17, fig. 1, ♀ (1888). *Habitat*. Philippines.—*Lexias Æetes* (*Adolias Æetes*, Hewitson, Exot. Butt. ii. *Adol.* pl. 1, figs. 1, 2. *Habitat*. Celebes.—*Lexias Phasiana* (*Symphædra Phasiana*, Butler, Ann: Nat. Hist. 1884, p. 60. *Habitat*. Macassar.

#### Genus BASSARONA.

*Adolias* (sect. 8, part), Felder, Neues Lep. p. 35 (1861).

*Symphædra* (part), de Nicéville, Butt. of India, ii. p. 185 (1886).

*Euthalia* (*Dophla*) (part), de Nicéville, J. A. Soc. Bengal, 1894, p. 17.

IMAGO.—Forewing triangular; costa slightly arched, apex obtusely pointed,

exterior margin somewhat erect, concave in the middle, and slightly scalloped; costal vein free in both sexes; first subcostal branch emitted at three-sixths before end of the cell, second at one-sixth before the end, third at about one-eighth beyond the cell, fourth at about one-third before the apex; cell closed; discocellulars inwardly oblique, upper very short, second bent inward, straight, lower slender, deeply concave; middle median veinlet emitted before lower end of the cell. *Hind-wing* triangular; costa longer, less arched, apex obtusely pointed, exterior margin very oblique, scalloped, anal angle somewhat produced; precostal spur long, curved; cell short, broad, closed by a slender vein; middle median veinlet emitted before lower end of the cell. *Body* robust; antennæ with a lengthened well-formed club. Eyes naked. Sexes somewhat similar.

TYPE.—B. Teuta.

**BASSARONA TEUTA** (Plate 210, pl. 1, 1a, b, ♂ ♀).

*Adolias Teuta*, Doubleday and Westwood, Gen. D. Lep. ii. p. 291, pl. 44, fig. 2, ♂ (1850). Moore, Trans. Ent. Soc. Lond. 1857, p. 81.

*Symphædra Teuta*, de Nicéville, Butt. of India, etc., ii. p. 187 (1886).

*Euthalia (Dophla) Teuta*, de Nicéville, Journ. A. Soc. Bengal, 1894, p. 17.

IMAGO.—Male. Upperside purpurescent blackish-brown. Cilia brown. Both wings with a transverse sharply-defined discal pale olivescent-yellow macular band, the spots on the forewing being broadly interrupted by the black veins and decreasing in size anteriorly, and with a small subapical spot beyond; the band on the hindwing is continuous, the crossing veins being also yellow; a minute yellow dot preceded by a black spot close to the subcostal within the cell of forewing; an indistinctly-defined submarginal black lunular fascia externally-bordered by very apparent slightly pale points. Underside very pale purpurescent-brown, the basal area and the external border, in patches, being suffused with dusky-brown; the transverse macular band and subapical spot as above, pale olivescent-yellow; a submarginal row of small short black points; a black ringlet-spot in middle of the cell, and a lunular mark at its end, both being centred with crimson, in the forewing; and in the cell of the hindwing is a black dot and a short mark at its end; base of costal margins of both wings tinged with crimson.

FEMALE.—Upperside paler, the transverse macular band and apical spot broader and olivescent-white, and with two slender additional streaks on the costa; the submarginal dentate black fascia broader and more defined; the cell spot and discocellular streak in the forewing black. Underside brighter pale purpurescent-brown than in the male; markings as in male; the transverse band olivescent-white. *Body* and palpi above blackish-brown, beneath pale purpurescent-brown; antennæ dark brown above, reddish beneath.



Expanse, ♂  $2\frac{8}{10}$  to  $3\frac{2}{10}$ , ♀  $3\frac{4}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—Assam; Silhet; Khasia Hills; Arakan.

DISTRIBUTION.—Numerous specimens in Indian Museum, Calcutta, from Silhet. It was taken by Dr. A. Watt on the “Barak River in the ascent to Manipur from Cachar in December” (Ann. N. H. 1885, 305). “Shillong; common” (Swinhoe, Tr. Ent. Soc. 1893, 284). Mr. de Nicéville (J. A. S. Bengal, 1894, 17) records it from the Arakan Hills. Major C. H. E. Adamson (List, p. 17, 1889) says, “I have only caught two specimens of this insect in Arakan in the cold season.”

**BASSARONA TEUTOIDES** (Plate 210, figs. 2, 2a, b, ♂ ♀).

*Symphedra Teutoides*, Moore, Proc. Zool. Soc. 1877, p. 586. de Nicéville, Butt. of India, ii. p. 188 (1886).

*Euthalia (Dophla) Teutoides*, de Nicéville, J. As. Soc. Bengal, 1894, p. 17.

IMAGO.—Male. Similar to *B. Teuta*. Upperside differing in the macular band on the forewing being slightly more erect, owing to the three anterior spots being shorter; the band on the hindwing is also slightly straighter and more evenly bordered on its inner edge and more sinuously on its outer edge. Underside similar to *Teuta*, but the ground-colour paler and of an olivescient tint; the red-centred cell marks on forewing less defined. Female. Upperside somewhat paler than in *Teuta*; the transverse white band less interrupted and broader anteriorly, on the forewing, the band on the hindwing is also more evenly edged within and regularly sinuous without; the submarginal black fascia is narrower and more sinuous. Underside much paler than in *Teuta*, and suffused with lilac externally, the red-centred cell marks on forewing less defined.

Expanse, ♂  $2\frac{2}{10}$ , ♀  $3\frac{2}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—South Andamans.

DISTRIBUTION.—“This seems to be a fairly common species in the S. Andaman Isles” (de Nicéville, l.c.).

**BASSARONA IRA** (Plate 211, figs. 1, 1a, ♂).

IMAGO.—Male. Nearest to *B. Teuta*. Smaller. Upperside with the transverse discal yellow macular band composed of small narrower spots, of similar shape, but with the lower four of the spots on the forewing having an even inner edge, and the entire series on the hindwing also having an even inner edge. Underside of a uniform pale purpurescent-ochreous, the band on both wings narrower than in *B. Teuta*, and with even inner edge.

Expanse, ♂  $2\frac{3}{10}$  inches.

HABITAT.—Moulmein, Burma.

The type specimen, from Moulmein, taken in August, is in our own collection. A male, from the Salween Valley, taken in July, by Capt. C. T. Bingham, is in the British Museum collection.

**BASSARONA GUPTA** (Plate 211, figs. 2, 2a, b, c, ♂ ♀).

*Symphædra Gupta*, de Nicéville, Butt. of India, etc., ii. p. 189, ♀ (1886); Journ. As. Soc. Bengal, 1894, p. 18, pl. 2, fig. 5, ♀.

IMAGO.—Male. Upperside blackish-brown. Both wings with a faintly-defined darker black submarginal sinuous fascia. *Forewing* crossed by a discal series of irregular-shaped pale olivescens-yellow spots, and a very small subapical spot; the spots disposed as in *B. Teutoides*, but smaller in size, those between the medians being more rounded, the one below the median narrower. *Hindwing* with a similar discal olivescens-yellow macular band, narrower than in *Teutoides*, which is more uneven on its inner edge, and less sinuous on its outer edge. Underside pale purpurescent-brownish-grey. *Forewing* with the discal area suffused pale brown. Both wings with submarginal series of black short streaks, transverse discal series of pale olivescens-yellow spots, which are much smaller (being about half the size of those of the upperside), and all sharply-defined with brown on their outer edge, and also showing the outer portion of those of the upperside by a pale semi-diaphanous sinus. Cell marks as in *Teutoides*.

Female. “Differs from the same sex of *Teuta* in its smaller size. Upperside paler. *Forewing* with the discal macular white band reduced to five decreasing triangular spots, of which the largest is beneath the subcostal nervure. The two subapical spots obsolete, and the submarginal diffused black spots very small. *Hindwing* with *no* trace whatever of the broad white band present in *Teuta*, the submarginal black dentated band reduced to a fine dentated line with the diffused obsolescent whitish spots above and below it in each interspace. Underside. *Forewing* with the same differences as above. *Hindwing* with a small white spot on the middle of the costa below the costal nervure, followed by five discal small indistinct blackish spots, one in each interspace, with a white linear mark in continuation from the middle of the submedian interspace of the inner margin, and the dentate lines of the upperside obsolescent, being represented by an obscure diffused dentate mark on the middle of each interspace.”

Expanse, ♂  $2\frac{5}{10}$ , ♀  $3\frac{2}{10}$  inches.

HABITAT.—Upper Tenasserim.

The above description of the male of this species is taken from a specimen labelled *type*, kindly sent to us for this purpose by Mr. L. de Nicéville.

DISTRIBUTION.—The male type above referred to, taken in the Atara Valley, Tenasserim, is in Mr. L. de Nicéville's collection. "A single female (the type), in Major Marshall's collection, was taken by Capt. C. T. Bingham at Tanaoo Choung, Thoungyeen, in September" (de Nicéville, l.c. p. 189).

Of our illustrations of this species on Plate 211, fig. 2, 2a is from Mr. de Nicéville's type specimen, and fig. 2 b, c, is copied from his figure of the female.

**BASSARONA GOODRICHI** (Plate 212, figs. 1, 1a, ♂ ♀).

*Euthalia Goodrichi*, Distant, Entomologist, 1886, p. 11, ♀.

*Euthalia (Dophla) Goodrichi*, de Nicéville, Journ. As. Soc. Bengal, 1894, p. 17.

*Euthalia Bellata*, Distant, Rhop. Malay. p. 436, pl. 37, fig. 4, ♂; pl. 43, fig. 12, ♀ (1886).

IMAGO.—Male. Upperside. Differs from *B. Gupta* on the *forewing*, in having the four lower pale yellow spots of the discal macular band placed in a more linear series, these spots also having a nearly even inner edge. On the *hindwing* the discal macular band is quite even along its inner edge and regularly sinuous on its outer edge. Underside also differs from *Gupta*, in the ground-colour being of a pale olivescient-grey, instead of a purplish brownish-grey; the discal macular band, on both wings, is composed of broader spots and their inner edge is also even, as on the upperside.

Female. "Upperside much paler than the male. *Forewing* with the transverse pale spots slightly blue-tinged, the lowest spot broken and duplex, the dark submarginal fascia, as in male, broken into a series of spots and placed in a more or less bluish-grey area. *Hindwing* with the pale spots very small and not extending beneath the upper median veinlet; a small dark spot at end of the cell, and a waved submarginal dark fascia placed on a somewhat paler area. Underside much paler than above. *Forewing* with the spots in the cell larger and brighter; greyish-white spots as above, followed by a series of dark purplish spots much smaller than those above. *Hindwing* with a small spot in the cell, as above, and a discocellular spot at end of the cell; the series of pale spots as above, but continued to the abdominal margin a little above the anal angle, the last spot being longest, the waved fascia above being replaced by a series of small dark spots as on anterior wings."

Expanse, ♂  $2\frac{8}{10}$ , ♀  $3\frac{2}{10}$  inches.

HABITAT.—South Tenasserim; Malay Peninsula.

DISTRIBUTION.—A single male, from Malawoom, Southern Tenasserim, taken by the late A. O. Hume, is in Mr. F. Godman's collection. Mr. Distant records the type (l.c.) from Perak, Malay Peninsula.

Our illustrations of this species on Plate 212 are copied from Mr. Distant's published figures.



**BASSARONA MONILIS** (Plate 212, figs. 2, 2a, ♂).

IMAGO.—Male. Nearest allied to *B. recta*. Upperside. *Forewing* with the transverse pale olivescient-yellow macular band having the three anterior spots disposed in a slightly incurved series, the spots generally more transversely rounded; the subapical spot minute. *Hindwing* with the outer border showing faint traces of an inner and an outer row of pale spaces of the ground-colour bordering the darker submarginal fascia; the pale transverse macular band broadening posteriorly, its inner edge almost even; a crimson spot at the anal angle. Underside dull olivescient brownish-grey; transverse pale band as above; basal and submarginal markings as in *B. Gupta*.

Expanse, ♂  $2\frac{6}{10}$  inches.

HABITAT.—Siam.

Described from three male specimens in the collection of Mr. P. Crowley.

Nearest allied to *B. recta*, the upperside differing in the macular band being much paler yellow, the band on the forewing being slightly recurved in its course across the wing, and its component spots being also more uniformly rounded. On the underside the ground-colour is totally different, being of an olivescient-grey, whereas in *B. recta*, it is bright purpurescent-brown.

A specimen, from Perak, taken in January, 1890, by Mr. W. Doherty, now in Mr. F. Godman's collection, is of the same species, and also, probably the specimens from Perak, in the collection of Mr. G. Semper, referred to (under *recta*) by de Nicéville in J. A. S. Beng. 1894, p. 17.

**BASSARONA RECTA** (Plate 212, figs. 3, 3a, ♂ ♀).

*Symphædra recta*, de Nicéville, Butt. of India, ii. p. 188 (1886).

*Euthalia (Dophla) recta*, de Nicéville, Journ. As. Soc. Bengal, 1894, p. 17.

IMAGO.—Male. Upperside dark purpurescent blackish-brown, the outer border slightly paler, and with a submarginal obscure diffused black macular fascia. *Forewing* with a perfectly straight, evenly-margined transverse discal olivescient-yellow macular band, interrupted by the black veins, and composed of seven spots increasing in size posteriorly, the upper three being small and rounded; a small yellow subapical spot. *Hindwing* with a pale olivescient-yellow discal band slightly widening from the costa and ending in a point above the anal angle, its edges even; a small crimson spot at the anal angle. Underside bright purpurescent cinnamon-brown; the discal pale olivescient-yellow band and subapical spot, as above, defined with black, the submarginal fascia represented by a black linear point in each interspace surrounded by a diffused patch. *Forewing* with a black ring-spot in the

middle of the cell and a lunate mark at its end, both centred with crimson; a crimson streak also at base of the costa. *Hindwing* with a small black cell-spot and a small upper discocellular lunate mark, and a crimson spot at the anal angle.

Female. Upperside. Both wings with the transverse discal olivescient-white band and subapical spot as in male, but paler and broader, and with two small slender streaks on the costa; the submarginal diffused macular black fascia broader and more prominent; the crimson spot at anal angle larger and sometimes duplex. Underside pale purpurescent-brown; the basal and outer markings as in the male; the transverse olivescient-white band, and spot, as on upperside. *Body* and palpi above purpurescent-brown, beneath and legs paler; antennæ black above, reddish-beneath.

Expanse, ♂  $2\frac{8}{10}$  to 3, ♀  $3\frac{6}{10}$  to  $3\frac{8}{10}$  inches.

HABITAT.—Khasia Hills; (? Upper Tenasserim).

DISTRIBUTION.—“A large series of both sexes from Shillong, Khasias, received from Rev. W. A. Hamilton” (Swinhoe, Tr. Ent. Soc. 1893, 284). “Specimens of both sexes from Silhet are in the Indian Museum, Calcutta” (Butt. Ind. ii. 188). A female, taken by Captain C. T. Bingham, in March, in the “Thoungyeen Forests in Upper Tenasserim, in Major Marshall’s collection,” is also referred to under this species by Mr. de Nicéville (l.c. 188), but which probably belongs to *B. Ira*.

INDO-MALAYAN ALLIED SPECIES.—*Bassarona Eurus* (Euth. (Dophla) Eurus, de Nicéville, Journ. As. Soc. Bengal, 1894, p. 15, pl. 2, figs. 3, 4, ♂ ♀; *id.* 1895, p. 420. *Habitat.* N.E. Sumatra.—*Bassarona externa* (Euth. (Dophla) externa, de Nicéville, l.c. p. 13, pl. 2, figs. 1, 2, ♂ ♀. *Habitat.* Nias.—*Bassarona Eion* (Euth. (Dophla) Eion, de Nicéville, l.c. p. 11, pl. 3, figs. 6, 8, ♂ ♀. *Habitat.* Java.—*Bassarona Bellata* (*Adolias Bellata*, Druce, P. Z. S. 1873, p. 344, pl. 32, fig. 3, ♂. *Syn.* *Adolias Cænæspolis*, Hewitson, Ent. M. Mag. 1875, 183; Exot. Butt. v. *Ad.* pl. 4, fig. 14 (1875). de Nicéville, J. A. S. Beng. 1894, p. 18. *Habitat.* Borneo.—*Bassarona Eson* (Euth. (Dophla) Eson, de Nicéville, l.c. p. 12, pl. 1, figs. 3, 5, ♂ ♀. *Habitat.* Palawan, Philippines.—*Bassarona Piratica* (Symph. Piratica, Semper, Reise Phil. Lep. p. 93, pl. 17, fig. 3, ♂ (1888). *Habitat.* Luzon, Mindoro, Mindanao.—*Bassarona Labotas* (*Limenitis Labotas*, Hewitson, Tr. Ent. Soc. 1864, p. 245, pl. 15, fig. 2, ♀. *Habitat.* Menado.

#### Genus RANGASA.

IMAGO.—Male. *Forewing* subtriangular; costa regularly arched, apex pointed, exterior margin slightly waved and slightly angulate below the apex, concave in the middle; first subcostal branch free in both sexes; first subcostal emitted at one-

as specified by Westwood (Gen. D. Lep. p. 289) ; and, as both *Dirtea* and *Nesimachus* are generically distinct from them, as well as from each other, and, moreover, as *Nesimachus* was made the type of Butler's genus *Dichorragia* in 1868, the second species, *Dirtea*, becomes the type of *Adolias*.

**ADOLIAS DIRTEA** (Plate 213, figs. 2, 2a, ♂ ♀).

*Papilio Dirtea*, Fabricius, Ent. Syst. iii. pt. 1, p. 59, ♀ (1793). Jones, Icones, iv. pl. 65, fig. 1.

*Adolias Dirtea*, Gray, Lep. Ins. of Nepal, p. 12, pl. 10, figs. 1, 2, ♂ ♀ (1846). Moore, Tr. Ent. Soc. 1859, p. 84.

*Lexias Dirtea*, Felder, Wien. Ent. Monats. 1860, p. 400.

*Symphædra Dirtea*, Doubleday and Westwood, Gen. D. Lep. p. 294 (1850). Butler, P. Z. S. 1868, p. 613 ; *id.* Catal. Fabr. Lep. Brit. Mus. p. 88 (1869). Distant, Rhop. Malay. p. 112, pl. 12, figs. 7, 8, ♂ ♀ (1883). de Nicéville, Butt. of India, etc., ii. p. 189 (1886).

*Adolias Boisduvalii*, Gray, Boisduval, Spec. Gén. Lep. i. pl. 8, fig. 2, ♂ (1836).

*Symphædra Canescens*, Staudinger, Exot. Schmett. pl. 54, ♂ ♀ (*nec* Butler).

*Symphædra Sandakana*, Fruhstorf, Ent. Nach. 1896, p. 39.

IMAGO.—Male. Upperside velvety brownish-black. Cilia alternated with white. *Forewing* with a broad marginal olivescens-greenish band decreasing in width towards the apex, its inner edge being sinuous ; two very small white obliquely-superposed subapical spots, one (or sometimes two) similar-disposed pale ochreous spots midway between them and two other less-defined spots outside end of the cell ; two (sometimes three) brighter ochreous spots within the cell ; sometimes also there are faint traces of a series of smaller inner-discal ochreous spots and three or four very small greenish-ochreous discal spots parallel with the outer band. *Hindwing* with a broad pale ultramarine-blue outer-discal fascia, which is suffused with olivescens-greenish posteriorly, and bears a submarginal series of black somewhat-cordate spots, the outer edge of the blue band being acutely sinuous, and the marginal border posteriorly suffused with olivescens-green. Underside reddish-ochreous ; posterior area of the forewing suffused with bluish-black. *Forewing* with a cluster of pale ochreous-yellow irregular-shaped spots within the cell, two connected spots beyond the cell, and an obliquely-curved inner-discal series of four small spots, followed by an outer-discal lower series of four and two subapical larger whitish spots, and then by a lower submarginal series of pale bluish lunate spots. *Hindwing* with three pale yellow rounded spots in the cell, one below the base of the lower subcostal, and a curved discal series of six (sometimes seven) pale yellow spots, followed by a more or less slightly-defined series of submarginal blackish points. *Body* above blackish-brown, beneath ochreous ; palpi beneath and legs ochreous ; antennæ black tipt with ochreous.

Female. Upperside dark ochreous-brown ; cilia pale ochreous-yellow. *Fore-*



*wing* with two pairs of pale ochreous-yellow obliquely-superposed spots within the cell (the lowest of the basal pair being sometimes absent), two similar spots beyond end of the cell, an inner-discal series of four spots, the two upper being disposed obliquely outward on each side of the upper radial, and the two lower between the base of the medians, beyond which is an outer-discal parallel row of seven somewhat larger slightly-quadrangle spots, followed by a submarginal row of anteriorly-decreasing spots, the lowest being somewhat lunate, and the upper rounded; from the lowest of the outer-discal series beneath the median veinlet extends a short streak followed by two superposed small spots and then by two spots. *Hindwing* with a linear series of four pale ochreous-yellow subbasal spots extending from below base of the median to the lower subcostal, followed by an inner-discal series of seven somewhat larger and slightly-quadrangle spots, of which the five lower spots extend parallel with the subbasal series, and the two upper to middle of the costa, beyond which is an outer-discal series of partly pale olivescient-ochreous-yellow lunules, and a submarginal lunular line with brighter ochreous points; in both the latter series the anterior portions are separated and macular, and the lower portions intersected by olivescient veins; abdominal margin pale brown. Underside pale olivescient-ochreous. *Forewing* with the posterior half suffused with pale bluish-black; marked generally as on upperside, but the spots somewhat larger and brownish-grey, those within the cell coalesced, and the cluster below the median obsolescent. *Hindwing* somewhat pale brownish-grey basally; with very pale ochreous-yellow markings as on upperside, the outer series being ill-defined. *Body* above dark ochreous-brown; thorax and base of abdomen with pale ochreous-yellow spots, and tip of abdomen with slender bands; palpi pale ochreous; body beneath, and legs pale olivescient-ochreous, middle and hind femora beneath white; antennæ tipped with ochreous.

Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{6}{10}$ , ♀  $3\frac{8}{10}$  to  $4\frac{2}{10}$  inches.

HABITAT.—Upper Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION AND HABITS.—“This insect is very common in many parts of Burma. It feeds on all sorts of decaying fruit which has fallen from the trees. Is most plentiful in October” (Major C. H. E. Adamson, List, p. 17). Capt. E. Y. Watson took it at Tiling Yaw in February and March, at Pougadoun, Thyetmyo, in October and November, and in the Karen Hills in November. Signor L. Fea obtained it in Bhamo in September. “Capt. C. T. Bingham took both sexes in Upper Tenasserim in the Thoungyeen Valley and Mepley Valley in January, in the Donat range in December, and in the Thoungyeen Forests in March and September” (de Nicéville, Butt. Ind. 190). Dr. J. Anderson took it in “Mergui in December and March” (J. Linn. Soc. Zool. 1886, 38). Dr. N. Manders records it as “extending throughout the Shan States, Burma, at elevations of 800 to 3000 feet; being found commonly in the Legya and Maingkain Districts; also at Thebaw; I also took it at Sawlon on the banks of the

as specified by Westwood (Gen. D. Lep. p. 289) ; and, as both *Dirtea* and *Nesimachus* are generically distinct from them, as well as from each other, and, moreover, as *Nesimachus* was made the type of Butler's genus *Dichorragia* in 1868, the second species, *Dirtea*, becomes the type of *Adolias*.

**ADOLIAS DIRTEA** (Plate 213, figs. 2, 2a, ♂ ♀).

- Papilio Dirtea*, Fabricius, Ent. Syst. iii. pt. 1, p. 59, ♀ (1793). Jones, Icones, iv. pl. 65, fig. 1.  
*Adolias Dirtea*, Gray, Lep. Ins. of Nepal, p. 12, pl. 10, figs. 1, 2, ♂ ♀ (1846). Moore, Tr. Ent. Soc. 1859, p. 84.  
*Lexias Dirtea*, Felder, Wien. Ent. Monats. 1860, p. 400.  
*Symphædra Dirtea*, Doubleday and Westwood, Gen. D. Lep. p. 294 (1850). Butler, P. Z. S. 1868, p. 613; *id.* Catal. Fabr. Lep. Brit. Mus. p. 88 (1869). Distant, Rhop. Malay. p. 112, pl. 12, figs. 7, 8, ♂ ♀ (1883). de Nicéville, Butt. of India, etc., ii. p. 189 (1886).  
*Adolias Boisduvalii*, Gray, Boisduval, Spec. Gén. Lep. i. pl. 8, fig. 2, ♂ (1836).  
*Symphædra Canescens*, Staudinger, Exot. Schmett. pl. 54, ♂ ♀ (*nec* Butler).  
*Symphædra Sandakana*, Fruhstorf, Ent. Nach. 1896, p. 39.

IMAGO.—Male. Upperside velvety brownish-black. Cilia alternated with white. *Forewing* with a broad marginal olivescens-greenish band decreasing in width towards the apex, its inner edge being sinuous; two very small white obliquely-superposed subapical spots, one (or sometimes two) similar-disposed pale ochreous spots midway between them and two other less-defined spots outside end of the cell; two (sometimes three) brighter ochreous spots within the cell; sometimes also there are faint traces of a series of smaller inner-discal ochreous spots and three or four very small greenish-ochreous discal spots parallel with the outer band. *Hindwing* with a broad pale ultramarine-blue outer-discal fascia, which is suffused with olivescens-greenish posteriorly, and bears a submarginal series of black somewhat-cordate spots, the outer edge of the blue band being acutely sinuous, and the marginal border posteriorly suffused with olivescens-green. Underside reddish-ochreous; posterior area of the forewing suffused with bluish-black. *Forewing* with a cluster of pale ochreous-yellow irregular-shaped spots within the cell, two connected spots beyond the cell, and an obliquely-curved inner-discal series of four small spots, followed by an outer-discal lower series of four and two subapical larger whitish spots, and then by a lower submarginal series of pale bluish lunate spots. *Hindwing* with three pale yellow rounded spots in the cell, one below the base of the lower subcostal, and a curved discal series of six (sometimes seven) pale yellow spots, followed by a more or less slightly-defined series of submarginal blackish points. *Body* above blackish-brown, beneath ochreous; palpi beneath and legs ochreous; antennæ black tipt with ochreous.

Female. Upperside dark ochreous-brown; cilia pale ochreous-yellow. *Fore-*

*wing* with two pairs of pale ochreous-yellow obliquely-superposed spots within the cell (the lowest of the basal pair being sometimes absent), two similar spots beyond end of the cell, an inner-discal series of four spots, the two upper being disposed obliquely outward on each side of the upper radial, and the two lower between the base of the medians, beyond which is an outer-discal parallel row of seven somewhat larger slightly-quadrate spots, followed by a submarginal row of anteriorly-decreasing spots, the lowest being somewhat lunate, and the upper rounded; from the lowest of the outer-discal series beneath the median veinlet extends a short streak followed by two superposed small spots and then by two spots. *Hindwing* with a linear series of four pale ochreous-yellow subbasal spots extending from below base of the median to the lower subcostal, followed by an inner-discal series of seven somewhat larger and slightly-quadrate spots, of which the five lower spots extend parallel with the subbasal series, and the two upper to middle of the costa, beyond which is an outer-discal series of partly pale olivescens-ochreous-yellow lunules, and a submarginal lunular line with brighter ochreous points; in both the latter series the anterior portions are separated and macular, and the lower portions intersected by olivescens veins; abdominal margin pale brown. Underside pale olivescens-ochreous. *Forewing* with the posterior half suffused with pale bluish-black; marked generally as on upperside, but the spots somewhat larger and brownish-grey, those within the cell coalesced, and the cluster below the median obsolescent. *Hindwing* somewhat pale brownish-grey basally; with very pale ochreous-yellow markings as on upperside, the outer series being ill-defined. *Body* above dark ochreous-brown; thorax and base of abdomen with pale ochreous-yellow spots, and tip of abdomen with slender bands; palpi pale ochreous; body beneath, and legs pale olivescens-ochreous, middle and hind femora beneath white; antennæ tipped with ochreous.

Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{6}{10}$ , ♀  $3\frac{3}{10}$  to  $4\frac{2}{10}$  inches.

HABITAT.—Upper Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION AND HABITS.—“This insect is very common in many parts of Burma. It feeds on all sorts of decaying fruit which has fallen from the trees. Is most plentiful in October” (Major C. H. E. Adamson, List, p. 17). Capt. E. Y. Watson took it at Tiling Yaw in February and March, at Pougadoun, Thyetmyo, in October and November, and in the Karen Hills in November. Signor L. Fea obtained it in Bhamo in September. “Capt. C. T. Bingham took both sexes in Upper Tenasserim in the Thoungyeen Valley and Mepley Valley in January, in the Donat range in December, and in the Thoungyeen Forests in March and September” (de Nicéville, Butt. Ind. 190). Dr. J. Anderson took it in “Mergui in December and March” (J. Linn. Soc. Zool. 1886, 38). Dr. N. Manders records it as “extending throughout the Shan States, Burma, at elevations of 800 to 3000 feet; being found commonly in the Legya and Maingkain Districts; also at Thebaw; I also took it at Sawlon on the banks of the



Pun River, in January" (Tr. Ent. Soc. 1890, 524). "Three males and two females recorded from Tavoy and Ponekai, by Mr. Wood-Mason" (J. A. S. Beng. 1887, 425).

It also occurs at "Perak, Malacca, and Province Wellesley in the Malay Peninsula, and Penang, where I found that old fallen fruit was an attraction to this species, and sliced pineapple placed at the proper season in a road which these butterflies frequented was generally sure to be visited by a good supply of both sexes" (Distant, Rhop. Malay. 114). Mr. A. R. Wallace also took it in Malacca, and the late Dr. Theodore Cantor took it in Penang. Colonel C. Swinhoe (Tr. Ent. Soc. 1893, 284) records it from Nias, Sumatra, and Borneo. Mr. H. O. Forbes obtained it in Sumatra. Dr. L. Martin says it "was a very common species in Deli, N.E. Sumatra, before the extension of the tobacco cultivation destroyed nearly the whole of the forests. It occurred round nearly every house, and both sexes were easily captured on the kitchen-midden, especially on discarded fragments of fruit thrown out by the Chinese cook. It is still very common behind the house of the manager of the Tandjong Djatti Estate, where there is still left a small forest of teak ('djatti' in Malay) trees. It occurs from November to March, never in high virgin forest, not at a greater elevation than Bekantschan. The female is called the 'golden-spot butterfly' by Europeans in the Straits Settlements. It settles with wide open spread wings, at least when feeding. Dr. Dohrn has bred it at Soekaranda. Males from the mountains are on the underside of both wings far darker than specimens from the plains, and a little bluish in hue" (de Nicéville, J. A. S. Beng. 1895, 421). It is also recorded from Java. It has been taken at Banjermasin, Borneo; and Mr. W. B. Pryer (Ann. N. H. 1887, 52) records it as "abundant in Sandakan, N. Borneo; frequenting forest paths, where the tree-tops have closed overhead, or other somewhat open places in the forest. Masticated sugar-cane left in such places attracts it by dozens." Mr. D. Cator possesses specimens from Sandakan taken in January, February, June, and July. We have specimens from Sarawak. It is also recorded from Mindora, Philippines, in Semper's *Reisen Phil. Lep.* p. 94.

**ADOLIAS KHASIANA** (Plate 214, figs. 1, 1a, b, c, ♂ ♀).

*Symphædra Khasiana*, Swinhoe, Trans. Ent. Soc. Lond. 1893, p. 284.

*Symphædra Dirtea* (part), de Nicéville, Butt. of India, etc., ii. p. 189.

IMAGO.—Male. Upperside dark purpurescent blue-black; cilia alternated with white. *Forewing* with a submarginal slender lunular blue-speckled band decreasing from the base and vanishing before the apex, the blue speckles also extending very slightly along the edges of the submedian and median veins to their tips; a very small bluish-white speckled spot before the apex; occasionally the lower cell

ochreous spots are slightly apparent. *Hindwing* with a broad violaceous-blue outer-discal fascia, bluest posteriorly, bearing a submarginal row of black conical spots, the outer marginal black band of the wing being complete and entire. Underside more or less dusky, deep reddish-ochreous and black-speckled. *Forewing* with the posterior half almost black, basal and discal spots paler ochreous, the outer discal and lower marginal spots sometimes slightly pale blue, the subapical spot and its superposed dot bluish-white. *Hindwing* with the cell and discal spots paler ochreous; submarginal points black. Body beneath, palpi and legs deep reddish-ochreous; antennæ entirely black to the tip.

Female. Upperside paler purpurescent-black. Both wings with the cell, basal, and discal spots bluish-white (in some slightly ochreous white), the marginal lunate spots on the forewing and the submarginal and marginal markings bordering the black spots are speckled with pale greyish-blue. Underside brownish-ochreous. *Forewing* blackish posteriorly, the spots white. *Hindwing* with the spots pale ochreous.

Expanse, ♂  $3\frac{4}{10}$  to  $3\frac{6}{10}$ , ♀  $3\frac{8}{10}$  to  $4\frac{2}{10}$  inches.

HABITAT.—Sikkim; Bhotan; Assam; Khasia and Naga Hills.

DISTRIBUTION.—A male taken in Sikkim in September, by Mr. G. C. Dudgeon, is in the British Museum collection. We also possess a male, taken by Mr. Dudgeon in Bhotan. Mr. L. de Nicéville (*Sikkim Gazetteer*, 1894, 142) states that "it has been recorded from Nepal, and is common in Bhotan, but is very rare in Sikkim." Moller's Sikkim Collection possessed both sexes. "It is very common in Upper Assam, according to Mr. S. E. Peal" (*Butt. Ind.* ii. 190). Col. C. Swinhoe gives "Shillong and Cherra Punji. Very constant in its characteristics, in both sexes, in all the specimens of a long series received" (*Tr. Ent. Soc.* 1893, 284). Mr. P. Crowley possesses it from the Naga Hills. Several specimens of both sexes were obtained by Mr. J. Wood-Mason in Cachar, in July and August, in the forests around Silcuri, and others on Nemotha Peak in October" (*J. A. S. Beng.* 1887, 360).

**ADOLIAS CYANIPARDUS** (Plate 215, figs. 1, 1a, b, ♂ ♀).

*Symphædra cyanipardus*, Butler, *Proc. Zool. Soc.* 1868, p. 613. de Nicéville, *Butt. of India*, etc., ii. p. 190, pl. 21, fig. 96, ♂ ♀ (1886).

*Adolias Dirteu*, Doubleday and Hewitson, *Gen. D. Lep.* pl. 44, fig. 1, ♀.

IMAGO.—Male. Upperside velvety purpurescent-black; cilia alternated with white. *Forewing* with small olive-green ordinary disposed cell and upper discal spots, bluish-white subapical spots—the upper one minute, and a submarginal anteriorly-decreasing row of olivescent- (or bluish)- green lunate spots with inter-

vening less-defined green-speckles to the vein points. *Hindwing* with a very broad outer-discal sinuous-edged band, which is virescent-blue anteriorly merging into greenish-blue posteriorly, crossed by black veins, and bearing a submarginal row of small black spots, which are either conical or somewhat quadrate, the outer black margin being intersected with blue points between the veins; abdominal margin very dark brown, the anal angle greyish. Underside very dark greenish or sap-brown. *Forewing* with the basal and posterior area bluish-black; with two pairs of large prominent bluish-white cell-spots, discocellular spots, two inner lower discal spots, outer-discal and apical spots, and lower submarginal spots. *Hindwing* with small greenish-white cell-spots and a curved discal series of seven spots; submarginal blackish points very indistinct.

Female. Upperside olivescient-black. Both wings with prominent olivescient-white spots disposed as in *A. Khasiana*, with the submarginal black spots more broadly greenish-blue bordered. Underside dark sap-green. *Forewing* with the posterior area greenish-black; all the spots large and all olivescient-white. *Hindwing* with the cell and inner-discal spots olivescient-white. *Body* of male above entirely black, of female, white spotted and with white anal bands; antennæ entirely black.

Expanse, ♂  $4\frac{2}{10}$  to  $4\frac{4}{10}$ , ♀ 5 to  $5\frac{6}{10}$  inches.

HABITAT.—Assam; Khasias; Silhet; Cachar.

DISTRIBUTION.—“Mr. S. E. Peal has obtained it at Sibsagar in Upper Assam, and Mr. J. L. Sherwill at Jorehat, also in Assam. There are specimens in the Indian Museum, Calcutta, from Silhet and the Khasia Hills” (de Nicéville, *l.c.* 191). Colonel C. Swinhoe records it as “common in the Khasias” (Tr. Ent. Soc. 1893, 284). Mr. J. Wood-Mason took “two males in Cachar, in forests around Silcuri, in August” (J. A. S. Beng. 1887, 360). Major Godwin-Austen obtained it at Jatinga, North Cachar. The specimen in the British Museum, labelled “Borneo,” is undoubtedly an incorrect locality.

#### ADOLIAS ALBOPUNCTATA (Plate 216, figs. 1, 1a, b, c, ♂ ♀).

*Symphædra albopunctata*, Crowley, Annals of Nat. Hist. 1895, p. 437, ♂ ♀.

IMAGO.—Male. Upperside purpurescent-black. *Forewing* with two very small pale ochreous upper cell-spots, a less distinct ochreous discocellular spot, and a similar discal spot between the upper and middle medians; above the latter is a prominent small bluish-white triangular spot, situated below the subcostal, and beyond are two larger bluish-white lobovate subapical spots. *Hindwing* with an outer-discal curved row of not very prominent small blue-scaled spots, and a slightly-apparent submarginal row of smaller blue spots; a very small slightly-apparent inner-discal blue spot is also present between the upper and middle medians, and a



similar-disposed pale ochreous spot between the middle and lower medians. Underside dark sap-brown. *Forewing* with the basal area bluish-black; with four bluish-white small cell-spots; a somewhat larger discocellular spot, two oblique inner-discal spots, four outer-discal spots, and less-defined lower submarginal spots. *Hindwing* with a bluish-white discocellular spot and an inner-discal row of small bluish-white spots.

Female. Upperside bluish-black. Both wings with normally-disposed bluish-white spots, as in *A. Cyanipardus*, except that the basal and discal spots are comparatively larger, the two subapical and the subcostal (or the upper one of the inner-discal series) being also respectively larger. Underside dark sap-green, with bluish-white spots as in *A. Cyanipardus*, except that the subapical and subcostal on the forewing are respectively larger, and those on the hindwing somewhat smaller.

Expanse, ♂  $4\frac{4}{10}$ , ♀  $4\frac{6}{10}$  to  $4\frac{8}{10}$  inches.

HABITAT.—Siam.

Note.—The above description is taken from type specimens in Mr. P. Crowley's collection.

INDO-MALAYAN SPECIES.—*Adolias pardalis* (Symph. *pardalis*, Moore, P. Z. S. 1878, p. 698, ♂ ♀). *Habitat.* Hainan—*Adolias Palawana*. Male. Upperside. Differs from Bornean examples of *A. Dirtea*, on the forewing, in the marginal band being only half the width and sparsely scaled on its extreme outer edge. On the hindwing the blue band also is less than the width of the same species, and does not extend above the subcostal, bearing only five black spots; the outer border of this wing is entirely black. Expanse, 3 inches. *Habitat.* Palawan. In Coll. F. Godman.—*Adolias Dirtæoides* (Symph. *Dirtæoides*, Staudinger, Lep. List (1896) p. 32). *Habitat.*—?

INDO-MALAYAN ALLIED GENERA.—GENUS MARTHISA. Male. *Forewing* comparatively shorter than in *Adolias* (*Dirtea*), the costa more arched and the apex more obtuse; first subcostal branch anastomosed to the costal; cell narrower, closed. *Hindwing* shorter, broader, exterior margin very convex posteriorly, and strongly scalloped; cell open. Antennæ somewhat shorter in both sexes, and with a shorter stouter club. Eyes naked. Sexes similar. *Type*, *M. canescens*.—*Marthisa canescens* (Symphædra *canescens*, Butler, P. Z. S. 1868, p. 612, pl. 45, fig. 5, ♀). *Habitat.* Sandakan, N. Borneo.—*Marthisa Perdix* (Symphædra *Perdix*, Butler, Ann. Nat. Hist. 1884, p. 59, ♀. Kheil, Rhop. Nias, p. 26, pl. 2, fig. 10 (1884). Van de Poll, Tijd. v. Ent. 1895, p. 8, ♂. *Habitat.* Nias Island.—*Marthisa Elna* (Symph. *Elna*, Van de Poll, Tijd. voor Ent. 1895, p. 7, ♂ ♀). *Habitat.* Nias.—*Marthisa pardalina* (Symphædra *pardalina*, Staudinger, Exot. Schmett. p. 154, pl. 44, ♂ (*pardalis*), 1885. Sym. *pardalis*, Distant, Rhop. Malay. p. 435, pl. 40, fig. 7, ♀ (1886). *Habitat.* Malay Peninsula; N.E. Sumatra.

Genus SENADIPA.—Male. *Forewing* somewhat elongated-triangular, costa well arched, apex rounded, exterior margin oblique, waved; first subcostal anastomosed to the costal; cell closed. *Hindwing* short, broad, somewhat quadrate, exterior margin broadly scalloped; cell open. Sexes similar. *Type*, *S. Satrapes*.—*Senadipa Satrapes* (Lexias Satrapes, Felder, Wien. Ent. Monats. 1861, p. 302. Symph. Satrapes, Semper, Reis. Phil. Lep. p. 95, pl. xvii. figs. 4, 5, ♂. *Syn.* *Adolias imperator*, Hewitson, Exot. Butt. iii., *Adol.* pl., fig. 10, ♀. Symph. trapesa, Semper, l.c. p. 96, pl. xvii., figs. 2, 3, ♀ (1886). *Habitat.* Philippines.

Genus CAMARAGA.—Male. *Forewing* short, subtriangular; costa arched, apex obtuse, exterior margin slightly scalloped, posterior margin straight; first subcostal branch anastomosed to the costal for some distance before its end; first subcostal emitted at fully two-fifths before end of the cell, second at one-fifth, third at one-third beyond the cell; discocellulars outwardly-oblique, upper very short, second concave, lower undulated; cell closed; middle median emitted at some distance before lower end of the cell. *Hindwing* short; exterior margin obliquely convex, scalloped; precostal spur excurved; second subcostal branch and radial at equal distances from the costal vein; cell open. *Body* moderately stout; palpi somewhat slender, ascending to vertex; roughly squamous beneath; second joint hairy above; apex short, stout, pointed; antennæ with an elongated club. Eyes naked. *Type*, *C. Damalis*.—*Camaraga Damalis* (Cynthia Damalis, Erichson, Nova Acta Acad. Nat. Cur. 1834, p. 404, pl. 50, fig. 4. Symphædra Damalis, Semper, Reisen Phil. Lep. pl. 16, figs. 1, 2, ♂ ♀. *Habitat.* Luzon, Philippines.

#### Genus DICHORRAGIA.

*Dichorragia*, Butler, Proc. Zool. Soc. 1868, p. 614. de Nicéville, Butt. of India, etc., ii. p. 141 (1886).

Semper, Reisen Phil. Lep. p. 85 (1887).

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

IMAGO.—Male. *Forewing* triangular; costa slightly arched, apex obtuse, exterior margin slightly waved, uneven, posterior margin straight; cell one-third the length of wing, broad, closed; first subcostal branch free in both sexes, emitted at one-fourth before end of the cell, second close to the end; upper discocellular very short, bent close to subcostal, middle discocellular deeply concave, lower slender; radials from the upper angles; middle median emitted immediately before lower end of the cell, lower median at fully one-half before the end. *Hindwing* short; apex and exterior margin convex, slightly scalloped; precostal spur straight; cell rather broad, closed by a slender recurved lower discocellular veinlet; the two upper median veinlets emitted together from lower end of the cell; submedian area

densely hairy on both the upper and underside of the wing. *Body* robust; palpi porrect, compactly clothed; antennæ with a gradually thickened club; eyes slightly hairy in front. Sexes alike.

TYPE.—*D. Nesimachus*.

**DICHORRAGIA NESIMACHUS** (Plate 217, figs. 1, 1a, ♂ ♀).

*Adolias Nesimachus*, Boisduval, Crochard's Edit. Cuv. Rég. Animi. Ins. ii. pl. 139, bis, fig. 1 (1836).

Moore, Trans. Ent. Soc. Lond. 1859, p. 83.

*Dichorragia Nesimachus*, Butler, Proc. Zool. Soc. 1868, p. 614. Druce, P. Z. S. 1873, p. 346. de

Nicéville, Butt. of India, etc., ii. p. 141, pl. 19, fig. 82, ♂ (1886). Leech, Butt. of China, etc.,

i. p. 132 (1892).

*Argynnis Hippomenes*, Herr. Schæffer, Exot. Schmett. pp. 54, 77, figs. 11, 12 (1850).

IMAGO.—Male. Upperside dark sap-green, with alternate bluish-black and white markings between the veins. Cilia alternately black and white. *Forewing* with two short upper and two lower bluish-white streaks within the cell, two less-defined at its end; an inner and an outer discal series of small round spots, the inner series anteriorly dilating into longitudinal streaks, and the outer series into longitudinally-disposed submarginal more or less complete duplex sinuous very slender marks, followed by a marginal row of small lunate spots; all the above markings with black intervening spaces. *Hindwing* with bluish-white cell-spots, a discal series of spots, the upper being largest, followed by a prominent outer-discal row of round black spots, a submarginal series of very slender white partially-duplex sinuous marks and marginal lunular line. Underside. *Forewing* purplish-black, with markings as above, but more prominently defined and wider, the cell and lower basal forming blue streaks. *Hindwing* dark purpurescent sap-brown with black intervening spaces; markings as on the upperside.

Female. Upperside somewhat paler; marked as in the male. Underside as in the male, but of a brighter tinge throughout. *Body*, palpi, and legs blackish-brown, palpi at side and forelegs above streaked with white; antennæ black; eyes red.

Expanse, ♂  $2\frac{8}{10}$  to  $3\frac{2}{10}$ , ♀  $3\frac{6}{10}$  inches.

HABITAT.—Western and Eastern Himalayas; Assam; Khasias; Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION.—“This species has a wide range, from Kulu, Kumaon, Nepal, Sikkim, Bhotan, Assam, and Burma. In Sikkim, it occurs somewhat rarely throughout the year at low elevations” (de Nicéville, Sikkim Gaz. 140). “One female was taken by Mr. W. Doherty in the Kali Valley, near Jhulaghat, Nepal” (J. A. S. Beng. 1886, 123). Mr. Elwes (Tr. Ent. Soc. 1888, 350) says “it is not uncommon in Sikkim at low elevations between April and November.” Mr. G. C. Dudgeon has



taken it in Bhotan. "It occurs at Sibsagar in Upper Assam" (de Nicéville, Butt. Ind. 142). Colonel C. Swinhoe records it from the Khasias (Tr. Ent. Soc. 1893, 282). Major C. H. E. Adamson obtained it in "Bhamo and Upper Tenasserim. Rare. One specimen taken in Bhamo in August; it returned three times to the spot where it was first disturbed before it was captured" (List, p. 16).

It also occurs in the Malay Peninsula and Sumatra—where, as observed by Dr. L. Martin (J. A. S. Bengal, 1895, 414), "it is fond of settling on forest roads with wings only half open, and has a very rapid flight, as its robust nature shows." Found also in Java, Borneo, Mindanao, Philippines (Semper, Reisen Phil. Lep. p. 85), and according to Mr. Leech (P. Z. S. 1887, 417), is "fairly common in Central Japan."

INDO-MALAYAN ALLIED SPECIES.—*Dichorragia Nesseus* (Grose-Smith, Ann. Nat. Hist. 1893, p. 217. Leech, Butt. of China, etc., ii. p. 653). *Habitat.* N.W. China.—*Dichorragia Ninus* (*Adolias* Ninus, Felder, W. Ent. Mon. 1859, p. 185; Reise Novara, Lep. iii. pl. 58, figs. 4, 5. *Habitat.* Amboina.—*Dichorragia distincta*, Röber, Ent. Nachr. 1894, p. 365. *Habitat.* Ceram.

#### Genus STIBOCHIONA.

*Stibochiona*, Butler, Proc. Zool. Soc. 1868, p. 614. de Nicéville, Butt. of India, etc., ii. p. 120 (1886). *Adolias* (sect. vii.), Felder, Neues Lep. p. 35 (1861).

IMAGO.—Wings short, rather broad. *Forewing* triangular; costa very slightly arched, apex obtuse, exterior margin slightly scalloped, posterior margin almost straight; cell extending to more than one-third of the wing, closed; first subcostal branch free in both sexes, emitted at one-fifth before end of the cell, second from end of the cell; upper discocellular very short, bent close to subcostal, middle inwardly-oblique and deeply concave, lower slightly concave, radials from the upper angles; middle median veinlet emitted immediately before lower end of the cell, lower median at half length of the cell; submedian almost straight. *Hindwing* obconical; exterior margin slightly convex and slightly scalloped; precostal spur straight, simple; cell short, broad across the middle, closed; discocellulars outwardly recurved; middle and upper medians emitted from lower end of the cell, lower median at one-third before the end; submedian area densely clothed with hair on both upper and underside of the wing. *Body* moderately robust; abdomen short; palpi porrect, compactly clothed, second joint extending before the front, third joint somewhat lengthened; antennæ with a moderately thickened club. Eyes hairy. Sexes similar.

TYPE.—S. Coresia.

**STIBOCHIONA NICEA** (Plate 217, figs. 2, 2a, b, ♂ ♀).

*Adolias Nicea*, Gray, Lep. Ins. of Nepal, p. 13, pl. 12, fig. 1 (1833-46). Doubleday, List Lep. Brit. Mus. pt. i. p. 105 (1844). Westwood, Gen. D. Lep. p. 291 (1851). Moore, Trans. Ent. Soc. (1859), p. 83.

*Stibochiona Nicea*, Butler, Proc. Zool. Soc. 1868, p. 614. de Nicéville, Butt. of India, etc., ii. p. 120, pl. 19, fig. 81, ♂ (1886). Leech, Butt. of China, etc., i. p. 133 (1892).

*Adolias Dolope*, Felder, Wien. Ent. Monats. iii. p. 184 (1859).

IMAGO.—Male. Upperside velvety purpurescent-black. Cilia of forewing alternated with white, of the hindwing entirely white. *Forewing* with a marginal, a shorter excurved upper submarginal and a still shorter upper discal row of small white spots, the marginal row the largest and somewhat lunate; between the two outer rows is a parallel series of blue points, forming a sinuous band; three slightly-defined blue transverse marks within the cell. *Hindwing* with a marginal row of black spots ringed with blue inwardly and white outwardly, followed by a contiguous inner submarginal more or less defined slender blue sinuous line, both the latter being brightest and most defined in Eastern Himalayan and Burmese specimens. Underside. Ground-colour slightly paler brown-black. *Forewing* marked as above, but with all the spots bluish-white, more distinct, the discal row being entire and blue. *Hindwing* with a marginal row of more or less narrow bluish-white lunules, sometimes a submarginal row of bluish-white dots, and a discal series of blue dots, and two, or three, blue dots at end of the cell.

Female. Upperside olivescient-black; markings as in the male, but all somewhat larger, more defined, the submarginal sinuous line and inner half of the ring bordering the marginal black spots on the hindwing of a greenish-blue. Underside as in the male, but with all the markings slightly larger. Body, palpi, and legs black; collar, sides of palpi and forelegs white; antennæ black, tip with red.

Expanse, ♂  $2\frac{3}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{4}{10}$  to 3 inches.

HABITAT.—Western and Eastern Himalayas; Assam; Khasia and Naga Hills; Silhet.

DISTRIBUTION.—“Occurs throughout the Himalayas, from Kulu to Assam” (de Nicéville, Butt. India, 121). We possess a male from Kashmir, taken by the late Capt. R. Bayne Reed, also specimens from Masuri, 7000 feet elevation, taken in May by Capt. A. M. Lang, from Nepal, taken by the late General G. Ramsay, and from Sikkim, taken in March by Mr. G. C. Dudgeon. The Rev. J. Hocking obtained it in the Kangra Valley, and states that it “flies like *Papilio Pammon*, following the line of hedge, and passing in and out between the bushes” (P. Z. S. 1882, 239). Mr. W. Doherty records it from “Sarju, Gori, and Kali Valleys, 2000 to 5000 feet elevation, in Kumaon” (J. A. S. Beng. 1886, 123). “Mr. Graham Young has taken it in the Kulu Valley, and I met with it in August below Kotgarh, fifty miles

north of Simla. Mr. Templeton has taken it in Masuri. It is common in Sikkim, and the Indian Museum, Calcutta, has specimens from Silhet, Cherra Punji, Naga Hills, Sibsagar in Upper Assam, and examples brought by the Daffla Expedition." (de Nicéville, Butt. India, ii. 121). In Sikkim it "occurs throughout the warm weather, at low elevations" (de Nicéville, Sikkim Gaz. 1894, 139). Colonel C. Swinhoe records it from the Khasia Hills (Tr. Ent. Soc. 1893, 281). Major C. H. E. Adamson obtained it in the "Arakan Hills in November and December" (List, p. 15). Mr. W. Doherty took four males and one female in the "Karen Hills, Burma, at about 4000 feet elevation" (P. Z. S. 1891, 273). Signor Leonardo Fea also obtained it in the Karen Hills in October.

Specimens from Western China, identical with this species, are in Mr. J. H. Leech's collection.

HABITS OF IMAGO.—Mr. de Nicéville observes that "it is a very pretty insect on the wing, having a quick flight, but settles often on trees and bushes, always with wings widely distended, and frequently on the underside of a leaf, and is easy to capture" (Butt. India, ii. 121). The Rev. J. Hocking states that it "flies like *Papilio Pammon*, following the line of hedge, and passing in and out between the bushes" (P. Z. S. 1882, 239).

INDO-MALAYAN ALLIED SPECIES.—*Stibochiona Coresia* (*Hypolimnas Coresia*, Hübner, Samml. Exot. Schmett. ii. pl. 46, figs. 3, 4 (1806). *Syn. Aconthea apaturina*, Horsfield, Zool. Journ. v. p. 68, pl. 4, figs. 1, 1a (1830). *Habitat.* Java.—*Stibochiona Kannegieteri*, Fruhst. Ent. Nachr. 1894, p. 305. de Nicéville, J. A. Soc. Bengal, 1895, p. 415. *Habitat.* Sumatra.—*Stibochiona Rothschildii*, Fruhst. Ent. Nachr. 1894, p. 306. *Habitat.* Nias.—*Stibochiona Schonbergi*, Honrath, Berl. Ent. Zeit. 1889, p. 165, pl. 2, fig. 4. *Habitat.* Borneo.—*Stibochiona Persephone*, Staudinger, Iris, 1892, p. 451. *Habitat.* Borneo.

#### Genus NEUROSIGMA.

*Neurosigma*, Butler, Proc. Zool. Soc. 1868, p. 615. de Nicéville, Butt. of India, etc., ii. p. 150 (1886).

*Acontia*, Westwood, Cabinet of Oriental Entomology, p. 76 (1848)—*preoccupied*.

IMAGO.—Male. *Forewing* somewhat elongate, subtriangular; costa well arched, apex convex, exterior margin oblique, even, posterior margin recurved from the base; cell fully half length of the wing, closed; first subcostal branch free in both sexes, emitted at one-third before end of the cell, second at a little distance before the end; upper discocellular very short, angled close to subcostal, middle concave, lower recurved, radials from the upper angles; middle median veinlet emitted at a short distance before lower end of the cell; submedian recurved.



*Hindwing* broadly ovate, apex and exterior margin convex, very slightly scalloped; precostal spur long, excurved, emitted opposite base of subcostal; cell broad across the middle, closed; discocellulars long, outwardly recurved, radial from above the middle; the middle median emitted before lower end of the cell. *Body* moderately slender; palpi porrect, compactly scaled beneath, slightly hairy above; antennæ long and slender, club slender; eyes naked. Sexes alike.

TYPE.—N. Doubledayi.

**NEUROSIGMA DOUBLEDAYI** (Plate 218, figs. 1, 1a, b, ♂ ♀).

*Acontia Doubledayi*, Westwood, Cabinet of Oriental Entom. p. 76, pl. 37, fig. 4, ♀ (1848).

*Neurosigma Doubledayi*, Elwes, Proc. Zool. Soc. 1891, p. 277, pl. 27, fig. 7, ♂.

*Adolias Siva*, Westwood, Gen. D. Lep. p. 291 (1850).

*Neurosigma Siva*, Butler, Proc. Zool. Soc. 1868, p. 615. de Nicéville, Butt. of India, etc., ii. p. 151, pl. 19, fig. 80, ♂ (1886).

IMAGO.—Male. Upperside. *Forewing* reddish-ochreous at the base, with basal spots and margins of black; the outer portion of the wing also broadly black, and crossed by an inner and an outer discal series of olivescence-white broad irregularly-lunate marks, and a submarginal row of oval spots. *Hindwing* with the veins and basal streaks broadly black, the outer margin also broadly black; basal interspaces, an inner and an outer discal series of irregular-shaped spots, and a submarginal row of smaller rounded spots olivescence-white; the white interspace between the discocellular black streak and the two black discal spots sometimes tinged with pale ochreous. Underside paler; the colour and markings as above, except that the basal black markings are smaller, and the white broader, and tinged with blue. *Body* and palpi above black; thorax and base of abdomen spotted with reddish-ochreous; sides of abdomen with paler ochreous; body and palpi beneath, and legs pale ochreous; middle and hind femur and tibia blackish above.

Female. Upperside as in the male; the markings being broader, and the discocellular interspace on the hindwing of the same reddish-ochreous tint as on base of the forewing. Underside as on the upperside.

Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{4}{10}$ , ♀  $3\frac{6}{10}$  to  $4\frac{2}{10}$  inches.

HABITAT.—Sikkim; Assam; Khasia and Naga Hills; Burma.

DISTRIBUTION.—Of this species we have examined and verified specimens of both sexes taken in Sikkim in April and May by Mr. Otto Möller, now in Mr. Walter Rothschild's collection; females from the Khasia Hills, in the same collection, and also in our own, the latter taken by Major Godwin-Austen. Mr. P. Crowley possesses a female from Shillong, and a male from the Naga Hills. Dr. J. Anderson obtained it during the Western Yunan Expedition of 1868–75. Mr. L.

de Nicéville (Butt. Ind. ii. 151 (1886) says "it appears to be a rare species. Mr. Möller obtained it in Sikkim in the spring, Mr. Wood-Mason took three males in September on Nemotha, Cachar, and Mr. J. L. Sherwill has taken it at Jorehat in Assam, in April. It also occurs at Cherra Punji, the Naga Hills, and in Silhet." In the "Sikkim Gazetteer," 1894, 140, Mr. de Nicéville also remarks that it is "rare in Sikkim and Bhotan at low elevations, and is apparently double-brooded [probably here referring to the other species], occurring in April and May, and again in October." Mr. H. J. Elwes records it as "rare in Sikkim, where I have never seen it. Mr. Möller, who has the female in his collection, gives the elevation as from 2000 to 3000 feet, in April and May and October. I have seen it in the end of September near Cherra Punji in the Khasias" (Tr. Ent. Soc. 1888, 351). Colonel C. Swinhoe (Tr. Ent. Soc. 1893, 282) records it from the Khasias. Mr. H. J. Elwes (P. Z. S. 1891, 277) records, and figures, the male, taken by Mr. W. Doherty in the "Karen Hills, Burma, at 4000 to 5000 feet elevation, where it seemed common, but only males were taken." Signor Leonardo Fea obtained it at Meteleo, in the Karen Hills, in September.

**NEUROSIGMA FRATERNA** (Plate 218, figs. 2, 2a, ♂).

*Adolias Siva*, Moore, Trans. Ent. Soc. 1859, p. 85. Staudinger, Exot. Schmett. pl. 52, ♂ (*nec* Westwood).

Male. Upperside. *Forewing* differs from *N. Doubledayi* in all the interspaces between the black markings being reddish-ochreous, except the upper of the outer-discal and submarginal spots, which are ochreous-white; the outer-discal series of lunate marks are comparatively narrower, and the submarginal spots larger. *Hindwing* with the cell and discal interspaces reddish-ochreous, and the outer-discal curved row and submarginal row of white spots smaller. Underside with both wings as on upperside.

Female. Unknown.

Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{8}{10}$  inches.

HABITAT.—Bhotan; Khasia Hills; Chittagong Hills.

DISTRIBUTION.—There are males of this species taken in Sikkim in April and May, and in Bhotan in August, by Mr. Otto Möller, in Mr. Walter Rothschild's collection. We possess males from the Khasia Hills, taken by Major Godwin-Austen. Mr. Elwes records (P. Z. S. 1891, 277) specimens (with the rufous colour spreading over the greater part of the forewing and inner half of the hindwing), which were taken by Mr. W. Doherty in the Chittagong Hills—where dozens of specimens were taken by him.

Genus ABROTA.

*Abrota*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 176 (1857). de Nicéville, Butt. of India, ii. p. 182 (1886).

IMAGO.—Male. *Forewing* subtriangular; costa much arched, apex slightly rounded, exterior margin almost straight and slightly uneven; posterior margin slightly recurved; first subcostal branch free in both sexes, emitted at fully one-third before end of the cell, second at one-sixth before the end; upper discocellular very short, middle acutely bent in its middle, lower long and obliquely concave, radials from angle close to subcostal and end of middle discocellular; cell closed; middle median veinlet emitted at a short distance before end of the cell. *Hindwing* triangular; anterior margin well arched from the base, exterior margin oblique, convex, and evenly scalloped; precostal spur long, excurved; cell open. *Body* robust; palpi obliquely porrect, apical joint short; antennæ with an elongated slender club. Eyes naked. Sexes dissimilar.

TYPE.—A. Ganga.

HABITS.—“ In the habit of resting with wide outspread wings on leaves in dense forest, these butterflies closely resemble many species of *Euthalia* ” (de Nicéville, l.c. 183).

**ABROTA GANGA** (Plate 219, figs. 1, 1a, ♂ ♀).

*Abrota Ganga*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 178, pl. 6, a, fig. 1, ♂ only (1857).

*Adolias confinis*, Felder, Wien. Ent. Monats. 1859, p. 183, pl. 4, fig. 3, ♀.

(?) *Papilio Mirus*, Fabr. Ent. Syst. iii. 1, p. 48.

*Adolias Mirus*, Butler, Catal. Fabr. Lep. B. M. p. 61 (1869). de Nicéville, Butt. of India, etc., ii. p. 183, pl. 24, fig. 110 (♀ only).

*Abrota Jumna*, Moore, P. Z. S. 1865, p. 764 (♀ only).

IMAGO.—Male. Upperside rich ochreous. Cilia blackish, alternated with white. *Forewing* with black costal edge, the veins, a small middle spot and contiguous clustered speckles on upperside of cell, a recurved discocellular streak, a transverse diffused angulated lunulate discal band extending obliquely outward from the costal vein to the upper median and then bent inward to below the submedian vein, followed by a submarginal narrow lunular band and then by a marginal band; the discal and submarginal bands being confluent at their angles on the upper and middle median veinlet, the interspaces between the middle median and posterior margin being more or less marked with a central black-speckled lunular spot, and the broader costal interspaces by an outwardly-oblique broad black-speckled patch; the interspace between the discal band and the median vein also black-speckled, and the



base of the median veins broadly black-bordered. *Hindwing* with a transverse black subbasal, discal, submarginal, and marginal band, the discal band being somewhat macular, and the submarginal lunular. Underside yellowish-ochreous. Both wings with obscurely-defined ochreous-brown similarly-disposed transverse bands as on upperside, the inner one being the most distinct and broadest, the two middle lunularly-dentate, and the marginal obsolescent. *Forewing* also with two superposed ochreous-brown spots within the cell, a recurved discocellular streak, a series of pale yellowish dentate lunules traversing the inner band of which that above the upper median and the two between the middle median and submedian are lilacine-white; a series of lilacine-white spots also extending from the apex and centring the upper submarginal dentated-lunules. *Hindwing* also with an ochreous-brown ringlet and a lower white-centred lunule within the cell, and a smaller ringlet above it; the inner band also traversed by a series of pale yellow decreasing spots. *Body* and palpi above brownish-ochreous; paler beneath; legs yellowish-ochreous; antennæ black above, ochreous beneath.

Female. Upperside dark olivescient brownish-black. *Forewing* with a pale olivescient-ochreous broad streak extending along lower part of the cell to the middle of the wing and interrupted by the black discocellular streak; beyond is an outwardly-oblique upper discal macular band and three lower discal inwardly-oblique spots, followed by a submarginal narrow lunular band, which latter decreases anteriorly and terminates apically in two small whitish dentate spots. *Hindwing* with an olivescient-ochreous transverse subbasal and a submarginal band. Underside paler yellow, but with darker reddish-ochreous markings disposed as in the male. *Forewing* with the discal dentate-lunules, the lower costal larger lunule, and the apical series of spots lilacine-white, but more prominent, the basal area also suffused with lilacine-blue. *Hindwing* with the middle dentate-lunules centred with lilacine-blue, the basal area also suffused with the same tint. *Body* and palpi above olivescient-black; abdomen above crossed by a pale band; body and legs beneath pale yellowish; palpi beneath and legs above pale ochreous.

Expanse, ♂  $2\frac{8}{10}$  to 3, ♀  $3\frac{6}{10}$  to  $3\frac{8}{10}$  inches.

HABITAT.—Sikkim.

DISTRIBUTION.—“This is not a common species in Sikkim; it seems peculiar to the lower elevations, where it is found at from 2000 to 3000 feet elevation from May to August. Möller and de Nicéville consider *Ganga* and *Jumna* distinct species. Möller found both at the same season” (Elwes, Tr. Ent. Soc. 1888, 356). “Dr. J. G. Pilcher once had brought to him in Sikkim a pair of this species which had been taken *in copulâ*. The female was olive-green on the upperside. Both sexes are much rarer than *A. Jumna*” (de Nicéville, Sikkim Gazetteer, 1894, 142).

**ABROTA JUMNA** (Plate 219, figs. 2, 2a, ♂ ♀).

*Abrota Jumna*, Moore, Proc. Zool. Soc. 1865, p. 764 (♂ only). de Nicéville, Butt. of India, etc., ii. p. 148, pl. 24, fig. 110 (♂ only).

*Abrota Ganga*, Moore, Catal. Lep. Mus. E. I. C. i. p. 178, pl. 6, a, fig. 1 (♀ only).

IMAGO.—Male. Upperside paler ochreous than in *A. Ganga*, with similar markings, except that on the forewing the pale interspaces are more defined and unsullied, and on the hindwing having the discal and submarginal black band contiguous, the submarginal also being disposed further from the marginal, and the discal is somewhat narrower and disposed further from the subbasal. Underside also paler than in *A. Ganga*; markings similar, except that on the hindwing the two median lunular bands are more contiguous and are more distinctly dentate.

Female. Upperside ochreous brownish-black; markings similar to female *A. Ganga*, but of a yellowish-ochreous colour and comparatively broader. Underside similar, except that on the forewing the two large costal pale lunules are both yellow, and on the hindwing the two medial bands are more contiguous and also more distinctly dentate.

Expanse, ♂  $3\frac{2}{10}$ , ♀  $3\frac{5}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—Sikkim; Bhotan.

DISTRIBUTION.—“Both this species and the preceding occur together in Sikkim at low elevations from May to August, but are by no means common, and appear to be confined to Sikkim” (de Nicéville, Sikkim Gazetteer, 1894, 142). Mr. G. C. Dudgeon has taken it in Bhotan.

HABITS.—“In the habit of resting with wide outspread wings on leaves in dense forest, they closely resemble many species of *Euthalia*” (de Nicéville, Butt. India, ii. p. 183).

INDO-MALAYAN ALLIED GENERA.—GENUS TANAECIA.—*Tanaecia*, Butler, Proc. Zool. Soc. 1868, p. 610. Distant, Rhop. Malay. p. 128 (1883). de Nicéville, Butt. of India, etc., ii. p. 222 (1886); Journ. Bombay N. H. Soc. 1893, p. 48. Male. *Forewing* subtriangular; costa slightly arched, apex obtuse, pointed, exterior margin slightly oblique, posterior margin straight; first subcostal branch anastomosed to the costal (in both sexes), second subcostal touching the first, and the third also touching the second before reaching the margin; first subcostal emitted at about one-third before end of the cell, second at one-eighth before the end, third at one-third beyond the cell; discocellulars very short, inwardly oblique, angled close to subcostal. Cell rather narrow, open. *Hindwing* broadly ovate; exterior margin convex, anal angle broadly rounded; submedian thickly clothed with fine longish hairs along its edge; precostal spur bifid at half its length; base of second subcostal and radial at nearly half the distance of the former from the costal; cell



open. *Thorax* woolly; palpi laxly clothed, second joint ascending nearly to vertex, third joint long, fully half length of second, slender and bristle-like; antennæ slender; eyes naked. Sexes similar. *Type*, T. Pulasara.—*Tanaecia Pulasara* (Adolias Pulasara, Moore, Tr. Ent. Soc. 1859, p. 71, pl. 6, fig. 3, ♂. Butler, P. Z. S. 1868, p. 611. Distant, Rhop. Malay. p. 130, pl. 19, fig. 6, ♂; pl. 14, fig. 13, ♀; pl. 18, fig. 9, ♀. *Habitat*. Malay Peninsula.—*Tanaecia consanguinea*, Distant, Entom. 1866, p. 11; Rhop. Malay. p. 440, pl. 43, fig. 4, ♂ (1836). *Habitat*. Malay Peninsula.—*Tanaecia supercilia*, Butler, P. Z. S. 1868, p. 610, pl. 45, fig. 7, ♂. Distant, Rhop. Malay. p. 130, pl. 15, fig. 8, ♂. *Habitat*. Penang.—*Tanaecia Robertsii*, Butler, Cist. Ent. i. p. 235, ♂ (1874). Distant, Rhop. Malay. p. 132 (1883). *Habitat*. Malay Peninsula.—*Tanaecia Vikrama* (Adolias Vikrama, Felder, Reise Novara, Lep. iii. p. 433, ♂ (1867). *Habitat*. Sumatra.—*Tanaecia violuria*, Butler, P. Z. S. 1868, p. 612, pl. 15, fig. 8, ♀. Distant, Rhop. Malay. p. 130, pl. 15, fig. 9, ♀ (1883). *Habitat*. Malay Peninsula.—*Tanaecia Martigena* (Euth. Martigena, Weymer, Stett. Ent. Zeit. 1887, p. 8, pl. 1, fig. 7, ♀). *Habitat*. Sumatra.—*Tanaecia Pelea* (Pap. Pelea, Fabr. Mant. Ins. p. 53 (1787). Butler, P. Z. S. 1868, p. 611. *Syn.* Adolias Palguna, Moore, Tr. Ent. Soc. 1859, p. 70, pl. 6, fig. 1, ♂. *Habitat*. Java.—*Tanaecia Varuna* (Adolias Varuna, Voll. Tijd. Ent. 1862, pl. 10, fig. 6, ♀. *Habitat*. Java.—*Tanaecia Indras* (Adolias Indras, Voll. Tijd. Ent. 1862, p. 194, pl. 11, fig. 2, ♀. *Habitat*. Borneo.—*Tanaecia Palawana* (Euth. Palawana, Staudinger, Deuts. Ent. Zeit. 1889, p. 78. *Habitat*. Palawan.—*Tanaecia Sakii* (Euth. Sakii, de Nicéville, J. Bombay N. H. S. 1894, p. 9, pl. 2, fig. 3, ♀. *Habitat*. N.E. Sumatra.—*Tanaecia Lutala*, Moore, Tr. Ent. Soc. 1859, p. 71, pl. 6, fig. 3, ♂. *Habitat*. Borneo.—*Tanaecia Aruna* (Adolias Aruna, Felder, Wien. Ent. Mon. 1860, v. 400. Distant, Rhop. Malay. p. 132, pl. 15, fig. 7, ♂ (1883). *Habitat*. Malay Peninsula.—*Tanaecia pardalis* (Adolias pardalis, Voll. Tijd. Ent. 1862, p. 197, pl. 11, fig. 5, ♂. *Habitat*. Malay Peninsula.—*Tanaecia Vordermani*, Snellen, Tijd. Ent. 1890, p. 293, pl. 12, fig. 1. *Habitat*. Billiton.—*Tanaecia Valmikiis* (Adolias Valmikiis, Felder, Reise Nov. Lep. iii. p. 434 (1867). *Habitat*. Borneo.—*Tanaecia Orphne*, Butler, Ann. Nat. Hist. 1870, p. 362. *Habitat*. Borneo.—*Tanaecia Apsarasa* (Adolias Apsarasa, Voll. Tijd. Ent. 1862, p. 198, pl. 11, fig. 3. *Habitat*. Borneo.

Genus PASSIRONA.—Male. Wings shorter and broader than in *Tanaecia*. *Forewing* triangular, apex obtusely rounded, exterior margin even; first subcostal branch slightly anastomosed to the costal near its end, emitted at one-third before end of the cell, second at one-sixth and slightly touching the first near its end; cell open. *Hindwing* short, broad; exterior margin oblique and convex posteriorly; cell open. Third joint of palpi long and slender, bristle-like; antennæ long, with a lengthened slender club; eyes naked. *Type*, P. Amisa.—*Passirona Amisa*



(*Euthalia Amisa*, Grose-Smith, Ann. Nat. Hist. 1889, p. 315; Rhop. Exot. Tan. pl. 1, figs. 4, 5, ♀ (1889). *Habitat.* Kinabalu, N. Borneo.

Genus SAPARONA.

*Forewing* rather long, subtriangular; costa well arched, apex very obtuse, exterior margin even, posterior margin long; first subcostal branch anastomosed to the costal in both sexes, first subcostal emitted at two-fifths before end of the cell, second at one-fifth, third at one-sixth beyond the end; cell broad, short, open. *Hindwing* ovate; apex rounded, exterior margin obliquely convex, slightly waved; precostal spur bifid; costal vein much arched; base of second subcostal and radial at equal distance from the costal vein; cell open. Thorax robust; palpi rather compactly clothed, apical joint one-fourth length of the second, pointed. Eyes naked. Sexes similar.

TYPE.—*S. Cibaritis*.

**SAPARONA CIBARITIS** (Plate 220, figs. 1, 1a, b, c, d, ♂ ♀).

*Adolias Cibaritis*, Hewitson, Annals of Nat. Hist. 1874, p. 358; Exot. Butt. v. *Ad.* pl. 4, fig. 13, ♂, figs. 12, 15, ♀ (1875).

*Tanæcia Cibaritis*, Kirby, Catal. D. Lep. p. 746 (1877). de Nicéville, Butt. of India, etc., ii. p. 223, pl. xix., fig. 77, ♂ (1886).

IMAGO.—Male. Upperside dark purple-brown; cilia blackish alternated with brownish-grey. Both wings with prominent black-lined cell and basal marks; crossed by a broad pale purpurescent-white discal sinuous band, extending from the costal vein of the forewing to above anal angle of the hindwing, the band deeply sinuated with a black inner edge, which latter is also angulated above the upper median on the forewing, the outer edge of the band being more or less slenderly defined and followed by a submarginal series of black hastate spots, these spots also having, generally, more or less defined pale brownish-white inner-edged points, and these points, in some specimens, are purplish-white; those on the forewing extending in some and are merged in the discal band, in others these points are blue-scaled on the hindwing, and in these latter specimens the outer border of the hindwing is also thickly speckled with bluish scales between the veins; abdominal margin pale greyish-brown. Underside pale pulverulescent olive-green; discal area of forewing tinged with ochreous; basal black-lined marks prominent; the discal transverse sinuous white band, as on the upperside, more prominently and broader edged with black lunules, the submarginal black hastate spots also more prominent, their pale inner-edged points being only slightly present on the forewing. *Body* and palpi, and legs, above brown, pale greyish-ochreous beneath; antennæ brown above, reddish beneath.

Female. Upperside as in the male, except that the outer border of the hindwing is never blue-scaled. Underside darker olive-green, otherwise as in the male.

Expanse, ♂  $2\frac{8}{10}$  to  $3\frac{2}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

HABITAT.—S. Andamans ; Nicobars.

DISTRIBUTION.—The late Mr. F. de Roepstorff found this to be a common species in the South Andamans. In 1884 Mrs. de Roepstorff sent me several specimens, stated to be from Nankouri, in the Nicobars.

INDO-MALAYAN SPECIES.—*Saparona Elone* (Euthalia Elone, de Nicéville, Journ. Bombay N. H. Soc. 1893, p. 47, pl. L, fig. 3, ♂ ; J. A. S. Beng. 1895, p. 424, ♀. *Habitat.* N.E. Sumatra.—*Saparona Trigerta* (Adolias Trigerta, Moore, Catal. Lep. Mus. E. I. Company i. p. 191 (1857). Trans. Ent. Soc. 1859, p. 72, pl. 5, fig. 2. *Habitat.* Java.

INDO MALAYAN ALLIED GENUS.—GENUS BUCASIA.—(*Tanæcia*, Semper, Reisen Phil. Lep. p. 90 (*nec* Butler).—Male. Wings rather large. *Forewing* subtriangular ; costa well arched, apex slightly rounded, subfalcate ; exterior margin oblique and slightly uneven ; first subcostal anastomosed to the costal ; first and second subcostals emitted before end of the cell, third at about one-fourth beyond the end ; cell open. *Hindwing* broadly conical ; apex rounded, exterior margin convexly oblique, waved ; anal angle rounded ; cell open ; precostal vein bifid. Apical joint of palpi extremely long and slender, longer than in typical *Tanæcia* ; eyes naked. Sexes similar. *Type*, B. Calliphorus.—*Bucasia Calliphorus* (Adolias Calliphorus, Felder, Wien. Ent. Monats. 1861, p. 302). Hewitson, Exot. Butt. iii. *Ad.* pl. 3, fig. 9, ♂ (1863). Semper, Reisen Phil. Lep. p. 91, pl. 16, fig. 9, ♂ (1886). *Syn.* Adolias Loebania, Boisd. Bull. Ent. Soc. Fr. 1861, p. 39. *Habitat.* Luzon, Mindoro.—*Bucasia leucotænia* (*Tanæcia leucotænia*, Semper, Verh. Nat. Hamb. 1878, p. 13, ♂ ♀ ; Reisen Phil. Lep. p. 92, pl. 16, figs. 10, 11, ♂ ♀ (1886). Staudinger, Exot. Schmett. p. 153, pl. 54, ♂ (1886). *Habitat.* Mindanao.—*Bucasia lupina* (Adolias lupina, Druce, Tr. Ent. Soc. 1874, p. 158, ♀. *Habitat.* Philippines.

#### Genus HARAMBA.

*Adolias* (sect. iii.), Felder, Neues Lep. p. 34 (1861).

IMAGO.—Male. *Forewing* subtriangular ; costa well arched towards the end, apex obtuse, exterior margin very slightly concave in the middle, posterior margin nearly straight, angle obtuse ; first subcostal branch anastomosed to the costal for some distance before its end in both sexes ; cell open ; first subcostal emitted at two-fifths, and second at one-fifth before the end of the cell. *Hindwing* broad, triangularly-ovate, apex rounded, exterior margin oblique and slightly convex, anal angle narrowly rounded ; precostal spur bifid ; cell open. *Body* rather stout ; palpi



not reaching to vertex, compactly clothed, third joint short, pointed; eyes naked. Sexes dissimilar.

TYPE.—H. Appiades.

NOTE.—The two species—*Appiades* and *Adima*—are, though closely allied, quite distinct from *Sedeva* and *Julii*; the two former, apart from their characteristic differences, being confined to a different habitat.

**HARAMBA JAHNU** (Plate 221, figs. 1, 1a, b, c, ♂ ♀).

*Adolias Jahnu*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 192 (1857); Trans. Ent. Soc. Lond. 1859, p. 74, pl. 7, fig. 1, ♀; P. Z. S. 1878, p. 831.

*Euthalia Jahnu*, de Nicéville, Butt. of India, etc., ii. p. 211 (1886); J. As. Soc. Bengal, 1887, p. 360, pl. 16, fig. 5, ♀. Swinhoe, Trans. Ent. Soc. 1893, p. 286.

*Adolias Sananda*, Moore, Trans. Ent. Soc. 1859, p. 76, pl. 7, fig. 3, ♂. Butler, P. Z. S. 1868, p. 609.

IMAGO.—Male. Upperside vinaceous-brown; cilia brown. Both wings with slender black-lined basal marks, their area broad, the interspace between the middle and discocellular mark in the forewing being narrow; a transverse discal and a submarginal slender black sinuous band, the inner band angulated at the upper median; a slightly-defined dusky blackish lunate shade between the upper discal interspaces and longitudinal streaks in the interspace between the discocellular mark and upper end of the discal line. Underside yellowish-ochreous, the disc of forewing being slightly deeper; basal black-lined marks slender, the discal and submarginal lines formed by disconnected portions, those of the forewing lunulate, the discal of the hindwing denticulate, and the submarginal maculate. *Body*, palpi, and antennæ above vinaceous-brown, beneath and legs yellowish-ochreous.

Female. Upperside olivescient ochreous-brown, the area of the basal black-lined marks broad; the discal and submarginal slender sinuous bands dusky brown, the discal broadest and slightly diffused; the upper discal interspaces on the forewing slightly paler and with a dusky-brown lunate shade. In some females, the ground-colour is paler and of a more greyish-brown colour, the transverse dusky-brown sinuous bands showing more prominently, their interspaces being also paler, and on the forewing, anteriorly more or less sullied whitish with the central shade darker. Underside brownish-ochreous, the basal black-lined marks slender, and the discal and submarginal sinuous bands as on upperside. *Forewing* also with the anterior interspaces slightly whitish-speckled, and the submarginal band there inwardly lunated with white; a white patch also at the apex. *Hindwing* also with the basal and posterior two-thirds washed with bluish-grey, the submarginal sinuous band also anteriorly bordered with bluish-grey lunules.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

HABITAT.—Sikkim; Assam; Silhet; Chittagong; Burma; Tenasserim.



DISTRIBUTION.—“ This species does not appear to be very rare. Mr. de Nicéville has taken both sexes in Sikkim in October. It also occurs in Assam, Silhet, Cachar, Chittagong, and Mr. Limborg obtained it at Hatseiga and Taoo, 3000 to 5000 feet, in Upper Tenasserim. In Major Marshall's collection are males taken in March and in the autumn in the Thoungyeen forests, and females in the Donat Range in April, in the Thoungyeen forests in March and April, and at Mepley in January, by Capt. C. T. Bingham ” (Butt. India, ii. 212). “ Rare in Sikkim at low elevations; probably found throughout the warm months ” (de Nicéville, Sikkim Gazetteer, 1894, 143). “ Common in the Khasia Hills and Cherra Punji ” (Col. Swinhoe, Tr. Ent. Soc. 1893, 284). Mr. J. Wood-Mason records specimens from “ Cachar, taken at Irangmara in August, and at Durgakuna in April ” (J. A. S. Beng. 1888, 361). “ One male and three females from the Naga and Karen Hills, of which those from the latter are rather smaller and paler than those from Sikkim and Khasias ” (H. J. Elwes, P. Z. S. 1891, 281). A male from the Chin-Lushai Hills is in the collection of Mr. P. Crowley. Capt. E. Y. Watson records seven males and two females “ from Tilin, taken from December to March during the Chin-Lushai expedition of 1889-90 ” (J. A. S. Beng. 1891, 40). Major C. H. E. Adamson took it at “ Tathon near the Chindwin in September; Upper Tenasserim and Bhamo. Occasionally met with, but not common ” (List, p. 18). A male from the Hills near Papun taken in November, and a female from foot of Donat Range taken in September, 1891, by Capt. Bingham, are in the British Museum collection. Signor Leonardo Fea took specimens in Bhamo in November. It is recorded from “ Tavoy ” (J. A. S. Soc. Beng. 1887, 426). A single female was taken by Dr. J. Anderson on “ Kisseraing Island, Mergui, in January ” (J. Linn. Soc. Zool. 1886, 37).

**HARAMBA APPIADES** (Plate 221, figs. 2, 2a, b, ♂ ♀).

*Adolias Appiades*, Ménétries, Catal. Mus. Petr. Lep. ii. p. 120, pl. 9, fig. 4, ♂ (1857). Moore, Trans.

Ent. Soc. 1859, p. 77 P. Z. S. 1865, p. 77. Butler, P. Z. S. 1868, p. 609.

*Euthalia Appiades*, de Nicéville, Butt. of India, etc., ii. p. 207 (1886); J. Bombay N. H. S. 1891, p. 350.

IMAGO.—Male. Upperside dark olivaceous ochreous-brown; abdominal margin pale ochreous-brown; cilia brown. *Forewing* crossed by a discal obscurely-defined narrow diffused blackish lunulated fascia, and a similar submarginal denticulated fascia, these fasciæ being widest apart and most obscure towards the costa; black-lined cell-marks wide apart, a short line also below base of the cell, a large broad ringlet mark and then a small ring. *Hindwing* crossed by a discal and submarginal slender sinuous fascia, followed by a contiguous marginal smalt-blue band broadening from below the apex to the anal angle; two black-lined cell-marks, a basal small oval ring below the costal vein, two narrow oval marks between sub-

costal and radial, and two lunate marks between the medians. Underside reddish-ochreous, suffused with powdery ænescent greyish-green at apex of forewing, and on the hindwing except more or less apically; basal marks disposed as on upperside, very distinct, and with an additional small mark below the cell of hindwing; transverse discal and submarginal narrow black sinuous bands prominent, the discal being sinuous, the submarginal on the hindwing being macular, and the latter edged on both sides by pale bluish-grey scales; and the upper portion of the submarginal band on the forewing is preceded by a small slightly-perceptible whitish dentate spot. *Body* and palpi above dark brown, below and legs pale ochreous; antennæ black above, reddish beneath.

Female. Upperside dark olivescient ochreous-brown, as in the male; basal markings the same but less distinct; transverse discal and submarginal bands somewhat less prominent, the submarginal being more distinctly denticulate, and on the forewing the two interspaces between the subcostal and lower radial both show a sullied-whitish point on the submarginal and a lunule on the discal band. Underside reddish-ochreous; basal marks slender. *Forewing* with a small bluish-grey patch at the apex; the transverse discal and submarginal bands, as on upperside, blackish-brown, prominent; the discal band edged inwardly on the two upper interspaces by a white lunule, and the lower interspaces edged by a much less-defined lunule; the submarginal band also similarly inwardly-edged by a white point. *Hindwing* with the basal and posterior area suffused with bluish-grey, the discal band lunular, the submarginal band dentate and more or less obsolescent posteriorly.

Expanse, ♂ 3 to  $3\frac{2}{10}$ , ♀ 3 to  $3\frac{6}{10}$  inches.

HABITAT.—Kumaon; Sikkim; Bhotan.

NOTE.—Both *H. Appiades* and *Adima* are comparatively larger and more robust insects, in both sexes, than the allied Cachar species *Sedeva*, and the Burmese *Julii*, the two latter being easily distinguishable, in both sexes, from the former, by the nearer approximation of the discal transverse-sinuous blackish band with the submarginal band.

DISTRIBUTION.—Typical *Appiades* appears to be confined to the Middle and Eastern Himalayas. According to Mr. de Nicéville (Butt. Ind. ii. 207) it “occurs in Nepal, Sikkim and Bhotan,” and that “it is the commonest species of Euthalia occurring in Sikkim, and is found throughout the year at lower elevations” (Sikkim Gazetteer, 1894, 143). Mr. H. J. Elwes records it as “common in Sikkim up to 3000 feet elevation from March to December” (Tr. Ent. Soc. 1888, 361). Mr. W. Doherty (J. A. S. Beng. 1886, 124) records *Appiades* from the “Lower Gori, Jhulaghat on the Kali, Kumaon, from 2000 to 3000 feet elevation. Scarce.”



**HARAMBA ADIMA** (Plate 222, figs. 1, 1a, b, c, d, e, ♂ ♀).

*Adolias Adima*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 194 (1857); Trans. Ent. Soc. Lond. 1859, p. 76, ♂.

*Euthalia Adima*, de Nicéville, Butt. of India, etc., ii. p. 210 (1886); J. A. S. Beng. 1888, p. 278. Swinhoe, Tr. Ent. Soc. 1893, p. 286.

*Euthalia Appiades* (local race *Adima*), de Nicéville, J. Bombay N. H. Soc. 1891, p. 352.

*Euthalia Khasiana*, Swinhoe, Annals of Nat. Hist. 1890, p. 354, ♂.

IMAGO.—Male. Upperside darker olivescence-brown than in Sikkim and Bhotan specimens of *Appiades*; basal black-lined markings and transverse fasciæ similar. *Hindwing* either without any trace of a marginal blue band, or with a few sparsely-scattered blue scales at the anal angle, or in some specimens a more or less increasing cluster of scales, forming either small double patches or a single patch between the veins. Underside darker and of a more purpurescent-ochreous tint than in Sikkim and Bhotan *Appiades*, the posterior half of hindwing also of a deeper ænescent greyish-green.

Female. Upperside similar to *Appiades*, the two upper interspaces between the bands with less-defined sullied-whitish points at their ends. Underside similar to *Appiades*, except that on the forewing the two upper interspaces between the bands are less pointed at their ends.

Expanse, ♂  $2\frac{6}{10}$  to  $3\frac{2}{10}$ , ♀  $3\frac{2}{10}$  to  $3\frac{4}{10}$  inches.

HABITAT.—Upper Assam; Khasia Hills.

VARIETY (Plate 222, fig. 1, c).—Male. Upperside with the basal markings thicker, the transverse discal lunular band obsolescent on both wings, the submarginal band on the hindwing broadly diffused and comparatively nearer the obscure discal; no traces whatever of marginal blue scales. Underside with the basal marks thicker, those in the cell of forewing interspaced with black scales; discal band on forewing entirely absent, the submarginal band on both wings being nearer the disc and composed of broader black spots.

Expanse,  $2\frac{8}{10}$  inches. Shillong. In collection Colonel C. Swinhoe.

DISTRIBUTION.—Mr. L. de Nicéville (J. A. S. Bengal, 1891, 352) says "*Adima*, according to his opinion, is nothing but a local race of *Appiades*, confined to the Khasia Hills and Upper Assam." Mr. W. Doherty (J. A. S. Beng. 1889, 127) records its capture at "Margherita in Upper Assam, on the border of the Naga Country." Mr. de Nicéville (J. A. S. Beng. 1888, 278) records a considerable series received from Mr. W. A. Hamilton, all taken below Shillong in Assam, where, according to Mr. Hamilton, "*Appiades* does not occur at the spot where he finds *Adima*. It is a little strange that it should be replaced at the foot of the Shillong Hills by so variable a local race." Colonel Swinhoe has also received numerous specimens from Mr. Hamilton, taken at Shillong and Cherra Punji. Mr. P. Crowley



has specimens of male *Adima* from Lushai, and other specimens are recorded (as *Appiades*) by Lieut. D. Thompson (J. Bombay N. H. S. 1890, p. 2), "taken in the Chin-Lushai country during the Expedition from the Chittagong side, in the cold weather of 1889-90,"

**HARAMBA SEDEVA** (Plate 223, figs. 1, 1a, b, c, ♂ ♀).

*Adolias Sedeva*, Moore, Trans. Ent. Soc. Lond. 1859, p. 68, pl. 4, fig. 3, ♀.

*Euthalia Sedeva*, Swinhoe, Proc. Ent. Soc. 1890, p. xi.

*Adolias Balarama*, Moore, Proc. Zool. Soc. 1865, p. 766, pl. 41, fig. 3, ♂.

*Euthalia Balarama*, de Nicéville, Butt. of India, etc., ii. p. 208 (1886).

*Euthalia Appiades*, Wood-Mason and de Nicéville, J. A. Soc. Bengal, 1887, 360.

IMAGO.—Male. Upperside paler olivaceous ochreous-brown than in *Appiades*; basal marks similar, but differs in the transverse discal fascia on both wings being more distinctly lunulate and less diffused. On the forewing both the discal and submarginal fascia is distinctly defined at their anterior end, and are, moreover, placed nearer together in their entire course, the discal fascia also being more acutely angular at the lower radial; the two upper interspaces between the bands are either slightly paler brown than the ground-colour, and with a small more or less paler brownish-white outer point—or the two entire spaces are pale sullied brownish-white; the blue marginal band on the hindwing is comparatively broader than in *Appiades*. Underside. *Forewing* paler, the ochreous ground-colour being more restricted to middle of the wing, the apex and borders suffused with paler greyish-green, the transverse fasciæ near together as on upperside, the 3rd, 4th, and 5th portion of the discal fascia being composed of half-circles—like a capital letter C or G, or the 3rd, and sometimes also the 4th, are quite circular; the two upper interspaces have a white outer point, or are sometimes wholly whitish. *Hindwing* entirely suffused with pale powdery greyish-green.

Female. Upperside pale olivaceous ochreous-brown as in male, paler than in the same sex of *Appiades*; basal marks less distinct than in male. *Forewing* with the transverse bands also near together, the two upper interspaces entirely sullied-white, the four lower either discally-bordered with a whitish lunule or a broad sullied-white rounded spot. Underside similar to *Appiades*, except that, in the forewing, the transverse bands are nearer together as on upperside, the two upper interspaces entirely and the lower discally-bordered lunules pure white.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{2}{10}$  inches.

HABITAT.—Assam; Silhet; Cachar.

NOTE.—Both sexes of *H. Sedeva* are distinguishable from the Sikkim *Appiades*, in being comparatively smaller, and uniformly paler on the upperside, the nearer approximation of the two transverse fasciæ on the forewing, and in the two upper

interspaces in the male being either whitish-pointed externally or entirely sullied brownish-white, and in the female these two upper interspaces are entirely white and the lower discally-bordered with white lunules; in the male, the blue band on the hindwing is also comparatively broader.

With reference to Colonel Swinhoe's Note in Proc. Ent. Society, 1890, p. xi., on the identification of this species, I must point out an important error (or *lapsus calami*) regarding the locality, there given, for *Sedeva*—an error which has also led Mr. de Nicéville (see Journ. Asiatic Soc. Bengal, 1891, 350) into fault, as regards the true habitat of *Sedeva*. Col. Swinhoe's "*duplicates from Buxar,*" received by him from the Calcutta Museum, and referred to, as being partly *set up for his own cabinet* and "*the others given to Mr. Moore,*" are now before me, under examination. These so termed "*Buxar*" specimens, above cited, and of which there are about thirty before me—in about equal number of males and females—are really from the Cachar District—not from Buxar, and have the place and date of capture, by Mr. Wood-Mason in 1881, on their paper envelopes, as we here quote them below. All are true *Sedeva*.

DISTRIBUTION.—Of this species we possess both sexes, labelled Silhet, Assam, and several specimens of both male and female, taken, as above noted, by Mr. Wood-Mason "at low elevations in Cachar, this being one of the commonest butterflies, and was met with between May and August in the forests around Silcuri [Silcuri, May; Durgakuna, May; Durmkhal, June; Irangmara, January, July, August], both sexes being equally prevalent" (J. A. S. Bengal, 1887, 360).

#### HARAMBA JULII.

*Nymula Julii*, Bougainville, Voy. Thetis, ii. p. 345, pl. 44, figs. 4, 4a, ♀ (1837).

*Adolias Xiphiones*, Butler, Proc. Zool. Soc. 1868, p. 609, pl. 45, fig. 6, ♂.

*Euthalia Xiphiones*, de Nicéville, Butt. of India, etc., ii. p. 209 (1886). Distant, Rhop. Malay. p. 439, pl. 36, figs. 9, 10, ♂ ♀.

*Adolias Parvata*, Moore, P. Z. S. 1878, p. 831, pl. 52, fig. 3, ♀.

*Euthalia* (local race *Xiphiones*), de Nicéville, Journ. Bombay N. H. S. 1891, p. 352.

IMAGO.—Male. Most like Cachar *Sedeva*. Upperside somewhat darker brown; basal marks and transverse bands similar; the discal and submarginal band on the forewing approximated, the upper portion being of the same tint as the ground-colour, and without any indication of whitish points. Hindwing with the blue band broad. Underside similar to *Sedeva*, but with all the markings generally less defined.

Female. Upperside similar to *Sedeva*; the discal bands on the forewing similarly approximated, but with the two upper interspaces both shorter and either densely clouded with dark brown across the middle, leaving inner sullied-whitish lunules and small outer points, or the two spaces are more uniformly sullied-white;



the four lower interspaces either uniform with the ground-colour, or are slightly inwardly bordered with sullied-whitish lunules. Underside similar to *Sedeva*; bands on forewing with whiter interspaces, as on upperside.

Expanse, ♂  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—Burma; Tenasserim; Malay Peninsula.

NOTE.—We have assigned Bougainville's name (as above cited) to this species. His figure is doubtless taken from a Malayan specimen. His figure agrees exactly with some Burmese and Malay examples under examination. The other species (of various genera) which he figures on the same plate, are also representatives of known Malayan butterflies.

DISTRIBUTION.—“This is a common species throughout Burma” (de Nicéville, J. Bombay N. H. S. 1891, 352). “In Major Marshall's collection are three males of this species, taken by Capt. C. T. Bingham in the Thoungyeen forests, Upper Tenasserim, in December. There are also three females from Mepley, one from Donat, taken in January, two from Upper Thoungyeen forests, taken in April, two taken in March, and one from Sekkan, Thoungyeen, taken in February” (*id.* Butt. India, 209). In the British Museum collection are specimens from Tilin Yaw, taken in May by Capt. E. Y. Watson during the Chin-Lushai Expedition of 1889-90; also both sexes taken in Kollido, Papun, N.E. Tenasserim, November and December, Yunzaleen Valley in December, the Donat Range in February and September, and in Mergui in August, by Capt. C. T. Bingham. A female from the Karen Hills is in Mr. P. Crowley's collection. Major C. H. E. Adamson records it from “Bhamo and Upper Tenasserim. Not uncommon near Moulmein in July” (List, p. 18). Dr. N. Manders (Tr. Ent. Soc. 1890, 524) found it “somewhat local in the Shan States, Burma, but abundant where it occurs. I took it at Nankon, 4000 feet, on the edge of the thick belt of hills and forest extending between the Phwayla Plateau and the Upper Burma plains; also in the neighbourhood of Mone, and commonly in Eastern Karenni. It flies nearly all the year round.” The specimen described as “Parvata” was taken by Mr. O. Limborg at “Meetan, 3000 feet, Upper Tenasserim, in April” (P. Z. S. 1878, 831). Dr. J. Anderson obtained it in “Mergui in March, and on Sullivan Island in January” (J. Linn. Soc. Zool. 1886, 38). Mr. Distant records it from Perak, Malay Peninsula (Rhop. Malay. 439).

#### Genus CYNITIA.

*Aconthea* (part), Horsfield, Zool. Journ. v. p. 65 (1829-30).

*Adolias* (sect. iv.), Felder, Neues Lep. p. 34 (1861).

*Felderia*, Semper, Reisen Phil. Lep. p. 88 (1888)—*preoccupied*.

*Cynitia*, Snellen, Tijds. voor Ent. 1895, p. 9.

IMAGO.—Male. *Forewing* triangular; costa fully arched, apex truncate and



slightly falcate, exterior margin oblique, slightly concave below the angle, posterior margin convex; first subcostal branch slightly anastomosed to the costal near its end in both sexes; first subcostal emitted at one-third before end of the cell, second at one-fifth, third at fully one-third beyond; discocellulars short; cell open. *Hind-wing* obconical; anterior margin much arched from the base, apex obtuse, exterior margin oblique, convex posteriorly; precostal spur excurved; cell open; furnished with a dense oval *glandular patch of shining blackish raised scales*, occupying the basal interspace of the subcostals and radial, and anteriorly bounded by the costal vein; these scales, as seen under the microscope, being flat, somewhat long, with slight convex even tip, mostly being rather wide, several somewhat narrower, and a few slender, but all of them somewhat widest anteriorly. *Body* moderate; palpi porrect, apical joint short, pointed; antennal club well formed; eyes naked. Sexes more or less dissimilar.

CATERPILLAR. }  
 CHRYSALIS. } —Of the usual Euthalia form.

TYPE.—C. Phlegethon.

NOTE.—In this genus, of which the representatives are mostly Indo-Malayan, there are three well-marked groups of species. In the *first* group, the sexes are dissimilar, the males having a *blue* marginal band, and the females a discal series of fusiform markings on both wings (*Phlegethon*, *Ambalika*, *Gundava*, *Gopia*, *Monina*, *Cocytina*, *Blumei*, *Diardii*), or with sinuous markings on both wings (*Puseda*, *Ludekingii*). In the *second* group, the sexes are also dissimilar, the males having a *grey* marginal band, and the females somewhat oval discal markings (*Cocytus* (*Satropaces*), *Vacillaria*, *Asoka*). In the *third* group, the sexes are somewhat similar, the marginal band being present in both the male and female, either of a grey or blue colour (*lepida*, *Japis*, *Bottgeri*, *Flora* (*Macnairi*), *Andersoni*, *Stoliczkana*, *Maclayi*).

#### CYNITIA COCYTUS (Plate 224, figs. 1, 1a, b, c, d, ♂ ♀).

*Papilio Cocytus*, Fabricius, Mant. Ins. p. 29, ♂ (1787); Ent. Syst. iii. p. 55. Jones, Icones, pl. 64, fig. 2.

*Adolias Cocytus*, Butler, Ann. Nat. Hist. 1868, p. 71, ♂; *id.* Proc. Zool. Soc. 1868, p. 607, pl. 45, figs. 3 and 10, ♂ ♀; Catal. Fabrician Lep. Brit. Mus. p. 89 (1869).

*Adolias Satropaces*, Hewitson, Entom. M. Mag. 1876, p. 150, ♂ ♀; Lep. Coll. Atkinson, p. 1, pl. 1, figs. 6, 7, 8, ♂ ♀ (1879); Moore, P. Z. S. 1878, p. 830.

*Euthalia Satropaces*, de Nicéville, Butt. of India, etc., ii. 206 (1886).

IMAGO.—Male. Upperside rich dark purpurescent umber-brown; cilia white. Both wings with an outer marginal pale dull bluish-grey or purpurescent-grey band,

which extends from below the apex of forewing and widening to the abdominal margin of the hindwing to half-way up above anal angle. *Forewing* also with clearly-defined basal black-lined marks, their interspaces being pale greyish-brown, beyond which is an outwardly-oblique upper discal pale greyish-brown patch. *Hindwing* also with basal black-lined indistinct marks. Underside yellowish-ochreous. Both wings with slightly-defined slender blackish-brown basal marks. *Forewing* with a slender blackish lunular submarginal line. *Hindwing* with a very obscurely-defined pale brownish discal and submarginal slender sinuous fascia. *Body* and palpi above dark brown, beneath and legs pale yellowish-ochreous; antennæ dark brown above, ochreous beneath.

Female. Upperside pale purpurescent greyish-brown; cilia grey. *Forewing* with basal black-lined marks, slender and obscure; crossed by an oblique submarginal dark brown diffused narrow band, and an inner-discal angulated series of five sullied-white brown-edged spots, of which the two upper are largest and ovate and disposed obliquely-outward, the three lower much smaller, the third being minute, these latter are disposed obliquely-inward; a small similar white spot also present before the apex, the apical area being slightly speckled with bluish-grey scales; a dusky-brown shade before the upper discal spots. *Hindwing* with indistinct basal marks; crossed by a discal dark brown diffused band, and a less-defined more or less complete submarginal slender lunular band, which latter is sometimes slightly bordered with bluish-grey scales. Underside duller yellowish-ochreous than in male. Basal marks slender, ill-defined. *Forewing* with the discal brown-edged sullied-white spots and subapical spot, the apex also densely white-speckled; submarginal blackish fascia less oblique than on the upper side. *Hindwing* with the discal and submarginal blackish sinuous slender fascia.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{6}{10}$  to  $3\frac{2}{10}$  inches.

HABITAT.—Burma; Tenasserim; W. Siam.

NOTE.—The male type of the Fabrician *P. Cocytus*, in the Banksian Cabinet in the British Museum, has a grey marginal band—not blue, as erroneously stated by Mr. Butler (Ann. N. H. 1868, p. 71)—which we have, personally, both verified, in comparison with specimens of the same sex of Hewitson's *Satropaces*. The Fabrician type specimens of male and female *Cocytus* are undoubtedly the same as those of *Satropaces*.

DISTRIBUTION.—The Fabrician type, both of male and female, is labelled "Siam." The types of *Satropaces* were, according to Mr. W. S. Atkinson's MS. Notes, taken in "Tenasserim near the frontier of Siam." Mr. Otto Limborg (P. Z. S. 1878, 830) took it at "Meetan, 3000 feet elevation, Upper Tenasserim, in April." Capt. C. T. Bingham obtained it in the Thoungyeen forests in December, and in the Donat Range in January; subsequently, Capt. Bingham also took it in the "Hills north of



Papun, in December, 1891, and in the Thoungyeen forests in February, 1892." Major C. H. E. Adamson took "two males and one female in Tenasserim in 1878; none seen since" (List, p. 18, 1889). Signor Leonardo Fea sent me for examination, specimens taken in Bhamo and Cheba, in November. Four males are recorded from Tavoy (P. Z. S. 1887, 436). Dr. J. Anderson obtained it at "Minthantoung in December, and in Mergui in December and March" (Journ. Linn. Soc. Zool. 1886, 38).

**CYNITIA LEPIDEA** (Plate 225, figs. 1, 1a, b, c, d, e, ♂ ♀).

*Adolias lepidea*, Butler, Annals of Nat. Hist. 1868, p. 71. Moore, P. Z. S. 1878, p. 830.

*Euthalia lepidea*, de Nicéville, Butt. of India, etc., ii. p. 203, pl. 19, fig. 78, ♂ (1886). Distant, Rhop. Malayana, p. 439, pl. 36, figs. 4, 5, ♂ ♀ (1886).

*Adolias Cocytus*, Moore, Tr. Ent. Soc. 1859, p. 76.

IMAGO.—Male. Upperside dark purpurescent sepia-brown; cilia white. *Forewing* crossed by a very obscurely-defined slightly paler brown discal fascia widening from the costa, its inner edge being sinuously defined and angulated outward at the upper median. Both wings with black-lined basal marks, and a prominent pale ashy-grey outer marginal band, which extends narrowly from the apex of forewing and widening across the hindwing to above the anal angle. Underside pale brownish-ochreous, palest on the hindwing; the outer borders washed with lilacine-grey. Both wings with slender black-lined basal marks, and crossed by a dusky brown slender sinuous discal band, and a submarginal lunular band, both of which are palest, less defined, and somewhat diffused, on the hindwing.

Female. Upperside paler than in male, and of an umber-brown colour; basal marks, discal pale fascia, and marginal band, as in the male, except that the latter is brownish-grey, and in the Indian and Burmese specimens is slightly brownish-tinged along the outer margin, and the pale discal fascia more apparent. Underside as in the male, except that the ochreous colour is brighter, especially between the bands on the forewing, and the tranverse bands on both wings are more diffused. *Body*, palpi, and antennæ above dark brown, beneath and legs pale ochreous.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{8}{10}$  to  $3\frac{4}{10}$  inches.

CATERPILLAR.—"Of the usual *Euthalia* form; colour green, with a dorsal row of light red ocelli with blue centres; spines tipt with yellow" (Davidson, Journ. Bombay N. H. S. 1890, 276).

CHRYsalis.—"More narrowed at the head than in *E. Garuda*; green; all the points golden-yellow tipt with black, and a few large spots of gold between" (Davidson, l.c.).



EGG.—Unknown.

HABITAT.—North-Eastern and South India; Burma; Tenasserim; Malay Peninsula.

DISTRIBUTION.—“Occurs commonly in North-Eastern India and Burma, appearing again in Orissa, and Southward to Travancore” (de Nicéville, Butt. Ind. ii. 203). We possess a female taken by Capt. A. M. Lang below Naini Tal, East, at 2500 feet elevation; also a male from Nepal, taken by the late General G. Ramsay. Mr. L. de Nicéville says, “I have taken this species in Sikkim, in the hot valleys below Badamtam in October; it is fairly common in the Terai and in Bhotan, and probably flies all through the summer” (Sikkim Gaz. 1894, 144). Specimens from Sikkim, taken in July, and from Bhotan in April, July, and August, by Mr. Otto Möller, are in Mr. Walter Rothschild’s collection. It occurs in Jorehat in June. Col. C. Swinhoe records it as common in the Khasias (Tr. Ent. Soc. 1893, 285). Mr. Wood-Mason found it “very numerous in the forests around Silcuri, in Cachar, between April and August” (J. A. S. Beng. 1887, 360). Mr. W. C. Taylor “found it common in the Mals at Khorda, in Orissa” (List, p. 6, 1888). “A few specimens taken at Kathlekan, Mysore, in November and December, and at the Gersoppa Falls in January” (Capt. E. Y. Watson, J. Bombay N. H. S. 1890, 5). Mr. H. S. Ferguson “found it common in Travancore, in the low country and in the Hills up to 3000 feet. Kowdias 2000 feet in April. It has a habit of flying into the verandah in the low country and settling on the white walls or ceiling cloth” (J. Bombay N. H. S. 1891, 9). In the Nilgiris, Mr. G. F. Hampson says it is “rare, found from 2000 to 6000 feet” (J. A. S. Beng. 1888, 354). The late S. N. Ward took it at “Mangalore, Calicut, and Sircy” (MS. Notes). Mr. J. Davidson found “this species very common throughout the North Kanara District, frequenting the undergrowth of shady forests and seldom coming into the light” (J. Bombay N. H. S. 1896, p. —?). “In the C. Provinces I have only met with this species in Kalahandi, where it seems fairly common” (J. Betham, J. Bombay N. H. S. 1890, 284). Major C. H. E. Adamson “found it throughout Burma. Very common, especially near Akyab, in the dry hot months, when it is abundant in the dry jungles” (List, p. 18, 1889). Also taken in Chittagong in October and November. Signor Leonardo Fea took it at Bhamo, in September, and also in the Karen Hills in September. Dr. N. Manders (Tr. Ent. Soc. 1890, 524) says it is “not uncommon in Eastern Karenni.” Capt. E. Y. Watson took it in “Rangoon, and Beeling, Upper Tenasserim. Common—in March, and at Kyaikto in January and February” (J. Bombay N. H. Soc. 1888, 5). Mr. Otto Limborg “obtained it at Meetan, Upper Tenasserim, 3000 feet in April” (P. Z. S. 1878, 830). It has been taken at Tavoy (J. A. S. Bengal, 1887, 426). It also occurs in the Malay Peninsula.

HABITS OF IMAGO.—According to Mr. J. Betham “it has a very rapid flight, and

is very wary, though it can be caught by baiting with Mhowa refuse" (J. Bombay N. H. S. 1890, 284). Mr. J. Davidson says "its flight is not strong, and it rests much on leaves, with wings open" (J. Bombay N. H. S. 1896, p. —).

FOOD-PLANT OF LARVA.—"We found this larva very abundantly all the latter half of the Monsoon on *Melastoma malabathricum*, a shrub with large and handsome flowers, sometimes called Rhododendron. It also feeds on *Careya arborea*" (Davidson and Aitken, J. Bombay N. H. Soc. 1890, 276).

Of our illustrations of this species on Plate 225, fig. 1, 1a, 1c, is from a South Indian male and female; and fig. 1, b, d, e, from a Burmese male and female.

**CYNITIA COGNATA** (Plate 226, figs. 1, 1a, ♀).

FEMALE.—Upperside purpurescent umber-brown, as in same sex of *C. lepidea*. *Forewing* differs from that species in the outer margin bordering the dusky submarginal fascia being of the same but slightly paler brown colour as the other part of the wing; and in the discal dusky fascia possessing two upper and two lower short sullied-whitish spots. *Hindwing* with the outer margin broadly pale brown, palest along the discal dusky fascia. Underside similar to that of *C. lepida*, except that on the forewing, the discal series of sullied-white spots are present, as on the upperside.

Expanse, ♀ 3 inches.

HABITAT.—Siam.

Described from a single specimen in the collection of Mr. P. Crowley.

**CYNITIA ANDERSONI** (Plate 226, figs. 2, 2a, b, c, ♂ ♀).

*Euthalia Andersoni*, Moore, Journ. As. Soc. Bengal, 1884, p. 18; *id.* Journ. Linn. Soc. Zool. 1886, p. 38, pl. 3, figs. 3, 4, ♂ ♀. de Nicéville, Butt. of India, etc., ii, p. 203 (1886).

IMAGO.—Male. Upperside dark umber-brown. Cilia white. Both wings with basal black-lined marks, and an outer marginal pale cobalt-blue band, which extends from the apex of forewing and widens across the hindwing to above anal angle; a transverse discal very obscurely-defined slightly paler sinuous fascia widening from the costa of forewing. Underside pale brownish-ochreous, the outer borders broadly suffused with pale purplish lilacine-grey; cell marks on forewing distinct, less defined on hindwing; across the disc of both wings are two slender dusky brown lunular fasciæ, these being much less defined, and somewhat diffused, on the hindwing.

Female. Upperside paler than in the male; discal fascia more apparent, the marginal blue-grey band somewhat paler. Underside as in the male.



Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—Tenasserim; Mergui Archipelago.

DISTRIBUTION.—Dr. J. Anderson obtained several specimens of both sexes in “Mergui, in December, January, and March; also at Minthantoung, Zediwon, and Pataw Island in December.” Major C. H. E. Adamson took a single specimen on the Tavoy Coast in September (List, p. 18). Col. C. T. Bingham also took it in Tavoy, in September, and in the Tavoy Valley in March, 1893.

INDO-MALAYAN SPECIES OF CYNITIA.—*Cynitia Phlegethon* (Felderia Phlegethon, Semper, Reisen Phil. Lep. p. 90, pl. 17, figs. 6-9, ♂ ♀ (1888). *Habitat.* Philippines.—*Cynitia Monina* (Pap. Monina, Fabr. Mant. Ins. p. 51 (1787). *Adolias Monina*, Butler, P. Z. S. 1868, p. 608, pl. 45, fig. 4, ♂; Catal. Fabr. Lep. B. M. p. 89. *Euth. Cocytina*, Distant, Rhop. Malay. p. 125, pl. 18, fig. 7, ♀. *Habitat.* Malay Peninsula.—*Cynitia Cocytina* (Aconthea Cocytina, Horsf. Zool. Journ. (1830), p. 67, pl. 4, fig. 3, 3a, ♂ (Pap. Cocyta, Fabr. Ent. Syst. iii. p. 127, ♂). *Adolias Godartii*, Gray, Lep. Ins. Nepal, p. 14, pl. 12, fig. 2, ♂ (1833-46). *Habitat.* Sumatra.—*Cynitia Ambalika* (*Adolias Ambalika*, Moore, Tr. Ent. Soc. 1859, p. 74, pl. 5, fig. 3, ♀. Butler, Ann. N. H. 1868, p. 98, ♂. *Habitat.* Borneo.—*Cynitia Gopia* (*Adolias Gopia*, Moore, Tr. Ent. Soc. 1859, p. 73, pl. 5, fig. 4, ♀. *Habitat.*—?*Cynitia Blumei* (*Adolias Blumei*, Voll. Tijd. Ent. 1862, p. 204, pl. 12, figs. 3, 4, ♂. *Habitat.* Java.—*Cynitia Diardi* (*Adolias Diardi*, Voll. Tijd. Ent. 1862, p. 188, pl. 10, fig. 2, ♀. Butler, Ann. N. H. 1868, p. 98, ♂. *Habitat.* Borneo.—*Cynitia Asoka* (*Adolias Asoka*, Felder, Reise Novara, Lep. iii. p. 433, pl. 58, fig. 1, ♀ (1867). Distant, Rhop. Malay. p. 127, pl. 15, fig. 5, ♂; *id.* pl. 14, fig. 3, ♀. *Habitat.* Malay Peninsula; Penang.—*Cynitia Vacillaria* (*Adolias Vacillaria*, Butler, P. Z. S. 1868, p. 606, pl. 45, fig. 1, ♀. *Habitat.* Borneo.—*Cynitia Gandava* (*Adolias Gandava*, Voll. Tijd. Ent. 1862, p. 199, pl. 11, fig. 4, ♀. *Habitat.*—?*Cynitia Puseda* (*Adolias Puseda*, Moore, Catal. Lep. Mus. E. I. C. i. p. 191 (1857); Tr. Ent. Soc. 1859, p. 71, pl. 6, fig. 5, ♀; Lep. of Ceylon, p. 529. *Euth. Puseda*, Distant, Rhop. Malay. p. 125, pl. 18, fig. 8, ♀; *id.* pl. 15, fig. 3, ♀. *Habitat.* Penang; Malay Peninsula.—*Cynitia Ludekingii* (*Adolias Ludekingii*, Voll. Tijd. Ent. 1862, p. 189, pl. 10, fig. 3, ♀. *Habitat.* Sumatra.—*Cynitia Flora* (*Tanæcia Flora*, Butler, P. Z. S. 1873, p. 235; Aid, pl. 21, ♀. Distant, Rhop. Malay. p. 129, pl. 18, fig. 6, ♀. *Syn. Euth. Macnairi*, Distant, l.c. p. 123, pl. 14, figs. 6, 10, ♂ ♀ (1883). *Habitat.* Malay Peninsula.—*Cynitia Stoliczkana* (*Euth. Stoliczkana*, Distant, l.c. p. 124, pl. 14, fig. 11, ♀ (1883). *Habitat.* Malay Peninsula.—*Cynitia Maclayi* (*Euth. Maclayi*, Distant, l.c. p. 124, pl. 14, fig. 12, ♀ (1883). *Habitat.* Malay Peninsula.—*Cynitia Salangana* (*Euth. Salangana*, Fruhstorf, Ent. Nach. 1896, p. 39. *Habitat.* Salanga Island.—*Cynitia Semperi* (*Felderia Semperi*, Stgr. Iris, 1889, p. 77. *Habitat.* Palawan.—*Cynitia Japis* (*Nymph. Japis*, Godart, Encyc. Méth. ix. p. 382 (1819). Lucas, Lep.



Exot. pl. 69, fig. 1, ♀ (1835). Moore, Tr. Ent. Soc. 1859, p. 73. Fruhst. Berl. Ent. Zeit. 1894, p. 245, pl. 18, fig. 7, ♀. *Habitat.* Java.—*Cynitia Bottgeri* (Felderia Bottgeri, Fruhst. Berl. Ent. Zeit. 1894, p. 244, pl. 18, figs. 5, 6, ♂ ♀. *Habitat.* West Java.—*Cynitia Tanagra* (Felderia Tanagra, Staudinger, Iris, 1889, p. 76. *Habitat.* Palawan.

#### Genus KIRONTISA.

IMAGO.—Male. Wings short, broad. *Forewing* subtriangular; costa well arched, apex slightly produced and obtuse, exterior margin slightly concave in the middle, even, posterior margin almost straight; costal vein free in both sexes; first subcostal branch emitted at one-half before end of cell, second at one-fifth; cell open. *Hindwing* broadly conical; anterior margin well arched, exterior margin convex, even, anal angle pointed; second subcostal branch and radial emitted at equal distance from the costal; cell open; precostal excurved. *Body* very robust; palpi not reaching to vertex, apex short, stout, conical. Eyes naked. Antennal club short, slender. Sexes dissimilar.

TYPE.—K. *Telchinia*.

#### KIRONTISA TELCHINIA (Plate 227, figs. 1, 1a, b, c, ♂ ♀).

*Adolias Telchinia*, Menétries, Catal. Mus. Petr. Lep. ii. p. 120, pl. 9, fig. 5, ♂ (1857). Moore, Tr. Ent. Soc. 1859, p. 77. Butler, P. Z. S. 1868, p. 608.

*Euthalia Telchinia*, de Nicéville, Butt. of India, etc., ii. p. 206 (1886).

*Adolias Aphidas*, Hewitson, Exot. Butt. iii. *Ad.* pl. 2, figs. 8, 9 (1862), ♀.

IMAGO.—Male. Upperside dark purpurescent umber-brown. Cilia white. Both wings with a marginal blue band having a more or less ænescent lustre, which commences narrowly on the lower half of the forewing and widens on the hindwing to the anal angle. *Forewing* also with obscurely-defined black-lined cell and basal marks, their interspaces being paler brown; a triangular pale brown costal space also before the apex. *Hindwing* also with obscurely-defined black-lined cell marks with paler brown interspaces. Underside paler umber-brown; basal black-lined marks not prominent; both wings crossed by a discal and a submarginal sinuous diffused blackish fascia. *Body*, palpi, and antennæ above dark brown, beneath pale brown.

Female. Upperside pale umber-brown; cell and basal marks obscurely defined; crossed by a continuous oblique discal darker brown fascia, which commences at the apex of forewing and widens posteriorly to the middle of the abdominal margin; hindwing also with a narrow dark brown submarginal lunular fascia. Forewing

also crossed by a prominent discal curved upper series of five small semidiaphanous brownish-white more or less dentate spots, which are inwardly-bordered by a slightly-defined dark brown lunular fascia. Underside dull, or more or less brighter, yellowish-ochreous; basal marks slender. *Forewing* crossed by a well-defined submarginal blackish lunular fascia; the transverse discal series of white spots prominent, and each spot defined by a diffused black-speckled edge; apex with a white-speckled patch. *Hindwing* crossed by a narrow, more or less slightly defined, discal and submarginal sinuous diffused line.

Expanse, ♂  $2\frac{8}{10}$  to 3, ♀  $3\frac{4}{10}$  to  $3\frac{8}{10}$  inches.

HABITAT.—Nepal; Sikkim; Khasias; Cachar.

MIMICRY.—Mr. W. Doherty (J. A. S. Beng. 1889, 122) notes this species as being “a mimic.” In general coloration, and pattern of markings, there is a similarity to certain species of *Cynitia*—which is a protected genus of the present group.

DISTRIBUTION.—“In Sikkim, this species occurs in the low valleys, from 2000 to 3000 feet elevation, from April to October, but rather rarely” (de Nicéville, Sikkim Gaz. 1894, 143). We possess specimens of both sexes, taken in Nepal, by the late General G. Ramsay. Mr. J. Wood-Mason obtained “one male on Nemotha Peak, Cachar, at end of September” (J. A. S. Beng. 1887, 360). Colonel C. Swinhoe records it as “common in the Khasias” (Tr. Ent. Soc. 1893, 285).

#### Genus TASINGA.

MALE.—Wings very short. *Forewing* triangular; costa arched, apex prolonged and falcate; exterior margin concave below the apex, slightly uneven; posterior margin recurved; costal vein free in the male, anastomosed to the first subcostal in the female; first subcostal veinlet emitted at one-half before end of the cell, second at one-fifth, and third immediately beyond the end; discocellulars bent inward, straight; cell open. *Hindwing* triangular; anterior margin almost straight, apex pointed, exterior margin very oblique, slightly convex, and slightly uneven, anal angle prolonged; precostal vein bent outward; second subcostal branch emitted at a short distance from the costal, radial at nearly twice the distance; cell open. *Body* very robust; apex of palpi stout, conical. Eyes naked.

TYPE.—T. Anosia.

#### TASINGA ANOSIA (Plate 227, figs. 2, 2a, ♂ ♀).

*Adolias Anosia*, Moore, Catal. Lep. Mus. E. I. Compy. i. p. 187 (1857); Trans. Ent. Soc. Lond. 1859, p. 65, pl. 5, fig. 1, ♂ ♀.

*Euthalia Anosia*, Kirby, Syn. Catal. D. Lep. p. 254 (1871). Distant, Rhop. Malay. p. 117, pl. 14, fig. 5, ♀ (1883). de Nicéville, Butt. of India, etc., ii. p. 222 (1886).

Male. Upperside dark ashy-green, with the anterior margin of hindwing broadly pale pinkish-brown. Cilia of forewing black, of hindwing white. *Forewing* with a broad transverse discal densely grey irrorated-fascia, its inner edge being angulated, its outer edge sinuous, and both edges lunularly slightly black-speckled; black-lined markings within and below the cell edged with grey scales, and a few grey irrorations scattered between these markings. *Hindwing* with a transverse discal black-speckled sinuous fascia, and a submarginal series of black-speckled lunules, the lower portions of both and intervening discal area being thickly irrorated with grey scales; black-lined cell marks and a small black spot above and below the cell edged with grey scales; a prominent small patch of pure white scales extending (in both sexes) from base of precostal to base of subcostal. Underside olivescence-grey, palest on the forewing; outer borders of both wings, broadly, with numerous rather indistinct blackish short transverse slender strigæ; discal and submarginal black-speckled sinuous markings, as on upperside, ill-defined; basal black-lined markings very distinct. *Body* and palpi above dark ashy-green, below and legs greyish-white; antennæ dark brown above, reddish below.

Female. Upperside paler than in the male, the exterior borders brownish; irrorated markings the same. *Forewing* with an inner-discal curved row of prominent white dentate decreasing spots with black edges, extending from middle of the costa to below the middle median veinlet. *Hindwing* with the discal sinuous black fascia and submarginal lunate spots more defined. Underside paler than in the male; markings similar, the forewing also having the discal spots of the upperside.

Expanse, ♂  $2\frac{6}{10}$ , ♀ 3 to  $3\frac{5}{10}$  inches.

HABITAT.—Sikkim; Assam; Cachar; Burma; Tenasserim.

The above description of male and female is taken from N. Indian examples.

DISTRIBUTION WITHIN INDIAN AREA.—“Extremely rare in Sikkim. It has been obtained at Singla in April and October. It is generally found in river-beds, where it is fond of resting with outspread wings on the face of large boulders, from which it is then scarcely distinguishable” (de Nicéville, Sikkim Gazetteer, 1894, p. 144). “Dr. L. Martin caught a specimen in April, 1895, at the lower end of the Sibi Kola, near Darjiling” (J. A. S. Bengal, 1895, 426). “Mr. J. Wood-Mason obtained a female at Irangmara, in Cachar, in July; another seen with outspreading wings resting on the wall of a room in the bungalow at Lalla Mookh, in June, presenting the appearance of a leaf overgrown by a fungus; one male also taken on Nemotha Peak in September” (J. A. S. Beng. 1887, p. 362). “Mr. J. L. Shirwell took a female in the Jorehat district in June, and Mr. S. E. Peal has sent it from



Sibsagar, Assam" (Butt. Ind. ii. 222). Major C. H. E. Adamson records "two specimens, one from Bhamo and one from Lower Burma" (List, p. 18, 1889). It is recorded from Tenasserim, and Dr. J. Anderson obtained a pair in "Mergui in December and March" (J. Linn. Soc. Zool. 1886, p. 37). Capt. Bingham took it in Moulmein in October. Capt. E. Y. Watson took a female at Belung, Upper Tenasserim. A male and female from Tavoy is in Mr. P. Crowley's collection.

DISTRIBUTION OUTSIDE INDIAN AREA.—Mr. W. L. Distant records it as "scarce in the Malay Peninsula, one specimen only of a female, from Province Wellesley, being in his collection. Dr. L. Martin caught a specimen at Ayar Panas, eighteen miles inland from the town of Malacca, and possesses a single specimen from Kampong Singapura, N.E. Sumatra, captured in April, 1891" (J. A. S. Beng. 1895, p. 426). Mr. H. Druce (P. Z. S. 1873, p. 345) records it from Borneo, and Mr. W. P. Pryer (Ann. Nat. Hist. 1887, p. 53) says, "I obtained this in Sandakan, N. Borneo, in one place only, at the back of Elopura, flying in open sunshine in some regrown scrubb." Mons. G. A. Poujade (Nouv. Archiv. du Mus. ser. 3, iii. p. 263) records it from Laos.

#### Genus DOPHLA.

*Dophla*, Moore, Lep. of Ceylon, i. p. 33 (1880). Semper, Reisen Phil. Lep. p. 86 (1887).

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

*Euthalia* (part), de Nicéville, Butt. of India, ii. p. 191 (1886).

IMAGO.—Male. *Forewing* triangular; costa much arched, apex truncately-falcate, exterior margin even, angular below the apex, and very concave in the middle, posterior margin rather long, straight; first subcostal branch free, in both sexes, emitted at two-fifths before end of the cell, second near its end, third at one-fourth beyond the end, and extending to the apex, fourth and fifth at three-fourths; upper discocellular very short, bent inward close to subcostal, middle and lower inwardly-oblique and concave, closing the cell; upper radial from angle close to subcostal, lower radial from above the middle of discocellulars; upper median veinlet emitted from end of the cell, middle median from immediately before end of the cell; submedian slightly recurved. *Hindwing* bluntly oval; costa arched in male (straight in female), apex and exterior margin very convex, almost even; cell closed by a slender discocellular veinlet. *Body* robust. Eyes naked. Sexes similar.

CATERPILLAR.—Chilopodiform; body slightly tapering at both ends; armed on each side with ten long horizontally-projected fleshy branched-spines, these spines being whorled from the base with numerous short fine spines, those at the extremity being stouter, and apparently rigid.

CHRYSA LIS.—Short, thick ; dorsum medially triangular, front tapering, head-piece ending in two short obtuse points.

TYPE.—D. *Evelina*.

**DOPHLA EVELINA** (Plate 228, figs. 1, 1a, b, c, ♂ ♀).

*Papilio Evelina*, Stoll, Cramer, Pap. Exot. v. p. 132, pl. 28, figs. 2, 2B, ♂ (1790).

*Nymphalis Evelina*, Godart, Encycl. Méth. ix. 401 (1819).

*Adolias Evelina*, Westwood, Gen. D. Lep. p. 291 (1850). Butler, Proc. Zool. Soc. 1868, p. 600.

*Dophla Evelina*, Moore, Lep. of Ceylon, i. p. 34, pl. 17, figs. 1, 1a, ♂ (1881).

*Euthalia Evelina*, de Nicéville, Butt. of India, etc., ii. p. 195 (1886), ♂ only.

*Papilio Cicero*, Herbst, Nat. Schmett. vi. p. 130, pl. 146, figs. 3, 4 ♂ (1793).

IMAGO.—Male. Upperside dark ænescent sap-green. Cilia dark brown. Both wings with a transverse curved discal obscurely-defined dusky blue-black lunular fascia, which is broadest and angulated at the upper median on the forewing, followed by a much less distinct narrow submarginal and marginal fascia. *Forewing* also with two discoidal black-lined marks, the upper part of the inner one being centred with vermilion. *Hindwing* also with a smaller discocellular black-lined mark, and an obscure small inner black spot. Underside olivescent-grey ; both wings crossed by a discal, a submarginal and a marginal partly-confluent pale sap-green lunular fascia. *Forewing* also with discoidal black marks as above, and a small ring below the cell. *Hindwing* with two discoidal marks and two rings above them, both of which latter and the inner discoidal are centred with vermilion. *Body* and palpi above dark sap-green ; beneath, and legs olivescent-grey ; antennæ brown above, reddish beneath.

Female. Upperside paler, marked as in the male, the fasciæ broader, the edge of the discal fascia on forewing more defined and sinuous. Underside as in the male.

Expanse, ♂ 3 to  $3\frac{4}{10}$ , ♀ 4 to  $4\frac{2}{10}$  inches.

HABITAT.—Ceylon.

DISTRIBUTION.—“Occurs in the Eastern and Western Provinces of Ceylon, in low country forests, in June. Flight rapid, along forest paths, settling in thick parts of trees, and sometimes on the ground. Shy” (Capt. Hutchinson). “Rather common in the Kottawa forest, but difficult to capture” (Capt. Wade). “Fairly common in the lower middle sections of Ceylon, and generally found near Mango trees” (F. M. Mackwood, MS. Notes). Col. J. W. Yerbury obtained several specimens of both sexes in the district of Trincomalee, in October.

**DOPHLA LAUDABILIS** (Plate 229, fig. 1 ; larva and pupa, 1a, b, ♂ ♀).

*Euthalia laudabilis*, Swinhoe, Annals of Nat. Hist. 1890, p. 355.

IMAGO.—Male. Upperside bright dark ænescent blue-green ; with a broad ill-



defined bluish-grey curved discal fascia across both wings, which is broadest and most clearly-defined on the costal border of the forewing, and gradually attenuates obsolescently hindward across both wings to the abdominal margin, its inner edge being sinuous and the outer edge diffused; beyond is a narrow marginal obscure lunular blackish band. *Forewing* also with two discoidal black-lined marks, the upper part of the inner centred with vermilion. *Hindwing* also with one black-lined mark. Underside bluish-grey, with greyish olive-brown transverse normal sinuous fasciæ. *Forewing* also with discoidal marks as above. *Hindwing* also with two discoidal marks and two rings above them, the upper end of the inner discoidal mark and both rings being centred with vermilion.

Female. Upperside slightly paler in tint than the male; crossed by a bright and distinct curved discal broad bluish-grey fascia; discoidal marks as in the male. Underside as in the male.

Expanse, ♂  $3\frac{4}{10}$  to  $3\frac{6}{10}$ , ♀  $4\frac{2}{10}$  to  $4\frac{6}{10}$  inches.

CATERPILLAR.—Chilopodiform. Body slightly tapering at both ends; armed on each side with ten horizontally-projected long fleshy branched-spines, the long spines being whorled from the base with numerous short delicately fine spines, those at the tip being stouter, and apparently rigid. Colour of body pale green, with a dorsal vinaceous patch on each segment, these patches varying in size, that on the 4th, 7th and 10th segments being usually the largest, and that on the 5th and 6th small or obsolete; the branched-spines also pale green with the tips blackish.

CHRYSLIS.—Short, broad; dorsum medially triangular, tapering in front, head-piece ending in two short obtuse points. Colour green, with silvery thoracic spots and line along dorsal triangle.

HABITAT.—South India.

DISTRIBUTION.—“This is, generally speaking, the least common species of *Euthalia* in the North Kanara District, but some years it has been in great force at Karwar during the rains, and the number of larvæ brought in by native boys is surprising. It is a forest butterfly. Specimens caught or bred in the Monsoon are occasionally smaller and richer in colour than those found in the dry season” (J. Davidson, *J. Bombay N. H. S.* 1896, p. —?). “It occurs in Karwar, Bombay, the Wynaad, North Kanara in January, and at Trevandrum” (de Nicéville, *Butt. India*, ii. 195). The late Mr. S. N. Ward obtained it and reared the larvæ in Calicut. Colonel C. Swinhoe possesses specimens taken in N. Kanara in May, June and July. Mr. G. F. Hampson found it “rare in the Nilgiris and difficult to catch, occurring from 1000 to 4000 feet elevation” (*J. A. S. Beng.* 1888, 354). Mr. H. S. Ferguson says it is “rather rare in Travancore. Taken in June and July near Trevandrum and up to 1800 feet in the Hills” (*J. Bombay N. H. S.* 1891, 9).



Capt. E. Y. Watson took "a single male at Gersoppa Falls, Mysore, in January" (J. Bombay N. H. S. 1890, 5).

FOOD-PLANT, AND HABITS OF LARVA.—Mr. J. Davidson (*l.c.*) states that it "feeds on *Diospyros Candolleana*." It rests along the midrib of the leaf with laterally outspreading spines.

Of our illustrations of this species on Plate 229, fig. 1 is the larva and pupa, copied from Mr. S. N. Ward's original drawing; and figs. 1a, b, the male and female.

**DOPHLA DERMA** (Plate 230, figs. 1, 1a, b, c, ♂ ♀).

*Adolias Derma*, Kollar, Hügel's Kaschmir, iv. 2, p. 436 (1844).

*Euthalia Derma*, Distant, Rhop. Malay. p. 116, pl. 19, fig. 4, ♂ (1883). de Nicéville, Butt. of India, ii. p. 194 (1886).

*Dophla Derma*, Sempër, Reisen Phil. Lep. p. 86 (1887).

*Adolias Eva*, Felder, Reise Nov. Lep. iii. p. 432 (1867). de Nicéville, Butt. of India, etc., ii. p. 195.

IMAGO.—Male. Upperside dark olivaceous fuliginous-brown. Both wings crossed by an obscurely-defined curved discal darker-brown sinuous fascia, which is broadest anteriorly on the forewing and slightly angulated on the upper median, beyond which is a less-defined diffused submarginal and a lunular marginal fascia. *Forewing* also with two discoidal black-lined marks, the upper part of the inner mark being centred with vermilion. *Hindwing* also with a discocellular black-lined mark. Underside grey; crossed by a broadly diffused pale greyish-brown discal and a submarginal sinuous fascia, and a narrow lunular marginal fascia, the latter being most defined on the hindwing. *Forewing* also with two discoidal marks as above, and a small ring below the cell. *Hindwing* also with two discoidal black-lined marks and two rings above them, both of which latter and the inner cell mark are centred with vermilion.

Female. Upperside as in the male. Underside also as in the male.

Expanse, ♂  $3\frac{2}{10}$  to  $3\frac{6}{10}$ , ♀  $4\frac{2}{10}$  to  $4\frac{4}{10}$  inches.

HABITAT.—Masuri (Kollar); Assam; Khasias; Silhet; Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION.—"This has a wide range. Kollar described it, probably incorrectly, from Masuri, but it appears to be somewhat common in Silhet" (de Nicéville, Butt. Ind. ii. 194). Mr. P. Crowley has it from Assam. Colonel C. Swinhoe records it from the Khasias. The late Mr. W. S. Atkinson also possessed specimens from the Khasias. Major C. H. E. Adamson records it as spread sparsely throughout Burma. Mr. Crowley has a female from Tounghoo. Mr. H. Druce possessed it from Mallawoom, Lower Tenasserim, taken by the late A. O. Hume.

Mr. W. L. Distant (Rhop. Malay. 116) records it from Perak, Malay Peninsula. We possess a female from Malacca taken by Mr. A. R. Wallace. Mr. P. Crowley has a male from Sumatra. It is also recorded from N.E. Sumatra by Dr. L.

Martin (de Nicéville, J. A. S. Beng. 1895, 420). It also occurs in Borneo and the Philippines.

INDO-MALAYAN SPECIES OF DOPHLA.—*Dophla Sikandi* (Adolias Sikandi, Moore, Tr. Ent. Soc. 1859, p. 75, pl. 6, fig. 4, ♀. *Syn.* Adolias Soma, Felder, Reise Nov. Lep. iii. p. 432, ♂ (1867). *Euthalia Soma*, de Nicéville, Butt. India, etc., ii. p. 194. *Habitat.* Java.—*Dophla pyxidata* (Euth. pyxidata, Weymer, Ent. Nachr. 1883, 195; Stett. Ent. Zeit. 1885, p. 267, pl. 2, fig. 2, ♀. Kheil, Rhop. Nias, p. 25, pl. 4, fig. 20, ♂ (1884). *Habitat.* Nias.—*Dophla Dermoides* (Euth. Dermoides, Rothschild). *Habitat.*—?—*Dophla fumosa* (Euth. fumosa, Staudinger, Sale List, Lep. 1896, p. 32. *Habitat.*—?—*Dophla Annamita* (Adolias Annamita, Moore, P. Z. S. 1879, p. 137, ♂ ♀). *Habitat.* Cochin China.

Genus NORA.

*Euthalia* (subgen. *Nora*), de Nicéville, Journ. Bombay N. H. Soc. 1893, p. 44.

MALE. Wings short, exterior margins slightly scalloped. *Forewing* very short; costa regularly arched, apex obtusely pointed, exterior margin almost erect, very slightly concave in the middle, posterior margin straight; first subcostal branch free in the male, anastomosed to the subcostal in the female, emitted at about one-half, and second at about one-fifth before end of the cell, third immediately beyond the cell, fourth and fifth at three-fourths beyond; discocellulars short, upper angled close to subcostal, radials from the angles; cell open. *Hindwing* triangular; anal angle pointed; precostal spur bent acutely outward at its middle; furnished with a shining patch of black glandular scales\* occupying the basal interspace of the subcostals and radial, and bounded anteriorly by the costal vein;—these scales, as seen under the microscope, are of a slightly lengthened battledore shape, twice as long as broad, and with even tips; cell open; submedian very densely covered with fine hairs. *Body* very robust; head large; palpi compactly clothed, apex stout, and bluntly pointed; antennæ with a lengthened club; eyes naked. Sexes dissimilar.

TYPE.—N. Kesava.

NORA KESAVA (Plate 231, figs. 1, 1a, b, c, d, ♂ ♀).

*Adolias Kesava*, Moore, Trans. Ent. Soc. Lond. 1859, p. 67, pl. 3, fig. 5 (♂ only); P. Z. S. 1865, p. 766. Butler, Proc. Zool. Soc. 1868, p. 605.

*Euthalia Kesava*, de Nicéville, Butt. of India, etc., ii. p. 212 (1886).

*Euthalia discispilota*, Moore, Proc. Zool. Soc. 1878, p. 831, ♀.

MALE. Upperside very dark purpurescent-brown, almost black; cilia alternated

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\* This patch is not so dense as in *Cynitia*, the scales are shorter, and are not raised above the surrounding area, as is the case in *Cynitia*. Mr. de Nicéville's wood-cut figure (*l.c.* p. 44) of this patch shows it as extending only from the base of the second subcostal, whereas it is actually bounded by the costal vein.



with white. Both wings with a broad transverse outer-discal powdery bluish-grey fascia, which is traversed by a submarginal slender black denticulated line, this line being more or less obscurely defined on the forewing, the fascia itself widening on the hindwing, and extending to the outer margin towards the anal angle; the ordinary basal marks black and obscure; on the forewing, in some specimens, a small very obsolescent pale discal spot is apparent between the upper and middle median veinlets. Underside yellowish-ochreous, the outer margins slightly suffused with brown; basal marks slightly defined; crossed by two discal black diffused sinuous fasciæ, which are more or less defined, the inner fascia generally being less distinct, and on the forewing sometimes showing a small pale whitish semi-diaphanous spot (slightly visible in some few specimens also on the upperside) between the upper and middle median; the outer line most defined on the forewing, the portions increasing in width posteriorly. *Body*, palpi, and antennæ above dark brown, beneath and the legs pale yellowish-ochreous; antennæ tipt with reddish beneath.

Female. Upperside olivescens ochreous-brown; basal marks blackish-lined, obscure. Both wings crossed by a discal brownish-grey powdery sinuous fascia, the inner edge of which on the forewing bears a sullied-whitish lunate spot between the upper medians and more or less apparent pale lunate spots above it to the subcostal; outwardly the powdery fascia, on both wings, is traversed by a more or less defined blackish-speckled narrow sinuous band. Underside yellowish-ochreous; basal marks black-lined. Both wings crossed by a discal and a submarginal more or less distinctly-defined blackish or dusky-brown narrow sinuous diffused line, the discal being most diffused, the outer sometimes dentate. *Forewing* also with a black ringlet-spot below the cell, and a series of pale whitish discal spots, as on the upperside. *Hindwing* with the abdominal border washed with pale bluish-grey.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{6}{10}$  to  $3\frac{4}{10}$  inches.

HABITAT.—Sikkim; Bhotan; Assam; Silhet; Cachar; Lushai Hills; Upper Tenasserim.

We have restricted this species to the form described and figured as above. The typical male (Plate 231, fig. 1, 1a), and that which we here describe as the female (fig. 1, b, c), are from Sikkim specimens. The insect which was described and figured as the female of *Kesava*, in 1859 (l.c. fig. 3), is, according to our present determination, strictly referable to the next species (*Rangoonensis*), and is identical with the type described by Colonel Swinhoe.

DISTRIBUTION.—“This is one of the commonest species in Sikkim, at low elevations, from 2000 to 3000 feet, and flies from April to December” (de Nicéville, Sikkim Gaz. 1894, p. 144). “It occurs eastward as far as Upper Assam, also in Silhet and Cachar” (*id.* Butt. Ind. ii. 213). We possess several specimens of both



sexes from Sikkim and Bhotan. Mr. Wood-Mason records (J. A. S. Beng. 1887, 361) two males and two females taken "in forests around Silcure, in Cachar, between 18th July and 10th August."

Specimens from the Lushai Hills are in Mr. P. Crowley's collection. The type specimen of *discispilota*, placed as above, and a female representative of this species, was taken by Mr. Otto Limborg at Moolai, Upper Tenasserim, at 3000 to 6000 feet elevation.

**NORA RANGOONENSIS** (Plate 232, figs. 1, 1a, b, c, d, ♂ ♀).

*Euthalia Rangoonensis*, Swinhoe, Annals of Nat. Hist. 1890, 355.

*Adolias Kesava* (♀ only), Moore, Tr. Ent. Soc. 1859, p. 67, pl. 3, fig. 5, ♀.

MALE.—Upperside uniformly paler than in typical *Kesava*. *Forewing* with the discal powdery greyish fascia broader and paler, covering very nearly the whole of the outer half of the forewing, leaving a thinner and less-defined marginal brown band; a more or less distinctly-defined semidiaphanous whitish discal spot is present between the upper and middle median veinlets, and above this is generally a continuation of more or less apparent smaller lunate whitish spots. *Hindwing* with the powdery greyish fascia also broader, extending more towards the base, and thus showing a discal pale lunular, instead of the darkly-defined, edge of the basal area; submarginal blackish line sinuous. Underside similar to typical *Kesava*, except that on the forewing, the series of pale whitish discal spots are apparent; and in the hindwing, the fasciæ are less defined and more lunular, the discal fascia sometimes having traces of being edged with pale lunules.

Female. Upperside uniformly paler brown than typical female of *Kesava*. *Forewing* with a transverse well-defined sinuous-bordered band, its interspaces being more or less whitish-brown, or whitish, and medially clouded with darker brown. *Hindwing* also with a similar well-defined transverse sinuous band. Underside much paler yellowish-ochreous than in typical *Kesava*, the outer border of the forewing, and the hindwing, more or less entirely washed with pale bluish-grey; basal marks sharply defined; transverse sinuous fasciæ, as on upperside, whitish throughout on both wings.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to  $3\frac{4}{10}$  inches.

HABITAT.—Burma.

DISTRIBUTION.—Colonel Swinhoe's types were taken by Mr. Noble in Rangoon. We have verified specimens taken by Capt. E. Y. Watson in Rangoon in June and July, and at Beeling, Upper Tenasserim, in April; from Bhamo taken by Colonel C. H. E. Adamson, and by Signor Leonardo Fea in November and May. Dr. N.

Manders obtained it at Swalon, in the Shan States, in January. A specimen from Cambodia, taken by M. Mouhot, is in Mr. Grose-Smith's collection.

Of our illustrations of this species on Plate 232, our figures are from Col. Swinhoe's typical male and female specimens.

INDO-MALAYAN SPECIES.—*Nora Ramada* (*Adolias Ramada*, Moore, Tr. Ent. Soc. (1859), p. 69, pl. 4, fig. 5, ♂). Distant, Rhop. Malay. p. 122, pl. 19, fig. 5, ♂. *Habitat.* Malay Peninsula.—*Nora Salia* (*Adolias Salia*, Moore, Catal. Lep. Mus. E. I. C. i. p. 189 (1857); Tr. Ent. Soc. 1859, p. 69, pl. 4, fig. 4, ♂ ♀. *Habitat.* Java.—*Nora Erana*, de Nicéville, J. Bombay N. H. S. 1893, p. 46, pl. L. figs. 1, 2, ♂ ♀. *Habitat.* Sumatra.—*Nora Somadeva* (*Adolias Somadeva*, Felder, Reise Novara Lep. iii. p. 432, ♀ (1867). *Syn.* *Adolias Laverna*, Butler, Cistula Ent. i. p. 29; Lep. Exot. p. 174, pl. 60, fig. 5, ♂ (1874). *Habitat.* Borneo.—*Nora bipunctata* (*Adolias bipunctata*, Vollenhoven, Tijds. Ent. 1862, p. 191, pl. 10, fig. 4, ♂). Distant, Rhop. Malay. p. 438, pl. 43, fig. 3, ♂ (1886). *Habitat.* Malay Peninsula; Borneo.—*Nora decorata* (*Adolias decoratus*, Butler, P. Z. S. 1868, p. 605, pl. 45, figs. 2, 9, ♂ ♀). Distant, Rhop. Malay. p. 122, pl. 14, fig. 9, ♂. *Habitat.* Malay Peninsula; Sumatra.—*Nora Phintia* (*Euthalia Phintia*, Weymer, Stett. Ent. Zeit. 1887, p. 7, pl. 1, fig. 6, ♂. *Habitat.* Sumatra.—*Nora cordata* (*Euth. cordata*, Weymer, Stett. Ent. Zeit. 1887, p. 6, pl. 1, fig. 2, ♀). *Habitat.* Nias.—*Nora clathrata* (*Adolias clathrata*, Voll. Tijds. Ent. p. 205, pl. 12, fig. 5, ♂ (1862). *Habitat.* Borneo.—*Nora cærulescens* (*Euth. cærulescens*, Grose-Smith, Ann. N. H. 1889, p. 315. *Habitat.* Borneo.

#### Genus SONEPISA.

MALE. Wings very short. *Forewing* subtriangular; costa very slightly arched, apex obtuse, exterior margin very slightly oblique, slightly concave in the middle, uneven, posterior angle rounded; first subcostal branch free, emitted at nearly half before end of the cell, second at one-fifth before the end, third at a very short distance beyond the end; cell short, open. *Hindwing* obconical; costa arched at the base and then nearly straight to end, apex obtuse, exterior margin obliquely convex, scalloped, anal angle rounded; cell open. *Body* moderately robust; palpi densely clothed above to the tip, apex short, pointed. Eyes naked.

TYPE.—S. Kanda.

#### SONEPISA KANDA (Plate 223, figs. 2, 2a, ♂).

*Adolias Kanda*, Moore, Trans. Ent. Soc. Lond. 1859, p. 69, pl. 4, fig. 5, ♂.

*Euthalia Elicius*, de Nicéville, Journ. Bombay Hist. Nat. Soc. 1890, p. 205, pl. D, fig. 8, ♂.

IMAGO.—Male. Upperside rich bronzy olivescence-brown. *Forewing* with a



narrow black line within base of the cell, a double wavy line across the middle of the cell, and extending below it at the base of the lower median veinlet, a similar double line across end of the cell; followed by a transverse discal diffused black waved lunular line, and beyond by a less-distinct submarginal similar line. *Hindwing* with a black double line at end of the cell, followed by a black diffused discal line, and a similar submarginal line; the abdominal margin paler greyish-brown. Underside. Both wings pale dull ochreous, somewhat brighter externally. *Forewing* with the markings in the cell as on upperside, the discal and submarginal line being less distinct. *Hindwing* with similar but less-distinct markings as on the upperside, and also with a slender black sinuous inner-discal line, extending from the costal to the median vein. *Body* bronzy-brown above, beneath, palpi, and legs pale ochreous.

Female. Unknown.

Expanse, ♂  $2\frac{3}{10}$  inches.

HABITAT.—Burma; Upper Tenasserim; Malay Peninsula; Borneo.

DISTRIBUTION.—A single male, taken at Myitta, Burma, in February, is in the Phayre Museum, Rangoon, and a male, from the Donat Range, Tenasserim, taken by Capt. C. T. Bingham, is in Mr. de Nicéville's collection. We have compared the type of *Elicius*, kindly lent by Mr. de Nicéville, with that of *Kanda*, in the Hewitsonian Collection, which latter was taken by Mr. A. R. Wallace in Borneo. A male, identical with both the above, from Perak, Malay Peninsula, is in Mr. Walter Rothschild's collection.

### Genus EUTHALIA.

*Euthalia*, Hübner, Verz. Bek. Schmett. p. 41 (1816). Moore, Lep. of Ceylon, i. p. 31 (1880).

*Euthalia* (part), Distant, Rhop. Malay. p. 114 (1883). de Nicéville, Butt. of India, etc., ii. p. 191 (1886).

*Aconthea*, Horsfield, Desc. Catal. Lep. E. I. C. pl. 5 et 8 (1829); *id.* Zool. Journ. v. p. 65 (1830).

*Adolias* (part), Boisduval, Spec. Gén. Lep. pl. 3, f. xi. (1836). Doubleday and Westwood, Gen. D.

Lep. p. 289 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 185 (1857); Trans. Ent.

Soc. 1859, p. 62. Vollenhoven, Tijd. voor Entom. 1862, p. 181. Butler, P. Z. S. 1868, p. 599.

*Itanus*, Doubleday, Gen. D. Lep. pl. 41, fig. 4 (1848).

*Adolias* (sect. i., *Itanus*, part), Felder, Neues Lep. p. 34 (1861).

IMAGO.—Male. *Forewing* triangular; costa arched, apex somewhat pointed, exterior margin uneven, slightly concave in the middle, posterior margin straight; first subcostal branch free from the costal vein in both sexes, emitted at two-fifths before end of the cell, second near end of the cell, third at one-fifth beyond, and extending to apex, fourth and fifth at three-fourths beyond, and terminating below the apex; discocellulars short, upper bent close to the subcostal, middle discocellular



very oblique, short, radials from the angles; cell open, narrow; median veinlets wide apart, the two upper emitted opposite the discocellular; submedian vein straight. *Hindwing* triangular; costa arched, exterior margin scalloped, obliquely convex, anal angle obtusely pointed; costal vein curved, extending to apex; precostal spur short, simple, excurved; first subcostal branch and the radial equidistant from the costal; cell open; medians, submedian, and internal vein wide apart. *Body* short, robust; palpi porrect, obtusely pointed at apex, pilose above, flattened and squamose beneath; legs squamose; antennæ long; eyes naked. Sexes dissimilar.

CATERPILLAR.—Chilopodiform. Head large, face broad, narrowest at the top, flattened in front. Head, and body above and beneath, and legs very sparsely covered with extremely fine short hairs. Body armed on each side with ten long horizontally-projected slender fleshy branched-spines, these spines being situated on the 3rd to 12th segments, and each spine being whorled with numerous short extremely slender spines, the longest laterally interlacing one another, which latter decrease in length to the tip, where they are slightly stouter, and apparently rigid. (Described from a preserved specimen).\*

CHRYSA LIS.—Short, thick and broad across the middle; with conically-triangulate mediodorsal pointed prominence; abdominal end short, tubercular at apex; thorax tapering, head-piece ending in two short obtuse points. Suspended by the tail from a leaf.

TYPE.—*E. Lubentina*.

**EUTHALIA LUBENTINA** (Plate 233, figs. 1, 1a; larva and pupa, 1b, c, d, e, ♂ ♀).

*Papilio Lubentina*, Cramer, Pap. Exot. ii. pl. 155, figs. C, D, ♀ (1777). Fabricius, Spec. Ins. ii. p. 91 (1781); Mant. Ins. ii. p. 49 (1787); Ent. Syst. iii. 1, p. 121 (1793). Donovan, Ins. China, pl. 36, fig. 3, ♂ (1799).

*Euthalia Lubentina*, Hübner, Verz. bek. Schmett. p. 41 (1816). Moore, Lep. of Ceylon, i. p. 31, pl. 16, figs. 1, 1a, b, ♂ ♀, larva and pupa (1880). Distant, Rhop. Malay. p. 128, pl. 14, fig. 4, ♂ (1883). de Nicéville, Butt. of India, etc., ii. p. 220 (1886).

*Nymphalis Lubentina*, Godart, Enc. Méth. ix. p. 400 (1819).

*Adolias Lubentina*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 188, pl. 12, figs. 13, 13a, larva and pupa (1857). Butler, P. Z. S. 1869, p. 88.

IMAGO.—Male. Upperside dark greenish-brown, palest and ænescent externally;

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\* In Horsfield's figure of the larva of the Javanese *E. Aconthea* (l.c. pl. 8, fig. 6), eleven segments only are apparent, including the head, which latter is represented as of an elongated oval shape, and the front pair of long spines are represented as if projecting from the second segment. These errors are repeated in the subsequent reproductions of this figure.

cilia black alternated with white. *Forewing* with black-lined cell-marks, the two outer with scarlet interspaces, and the inner mark sometimes outwardly edged by a short white streak; a black mark below the cell; three transversely-disposed small semidiaphanous white spots beyond the cell, followed by a discal recurved series of six, or seven, similar spots, the two lowest being more or less obscurely defined; beyond is a submarginal indistinct black lunular fascia. *Hindwing* with the costal border paler; a black-lined cell mark, a discal row of black-bordered scarlet spots, and a submarginal row of black spots, of which latter row the three anterior spots and the anal spot are externally bordered with scarlet; sometimes the three anterior spots, in both sexes, are connected with the three discal upper spots by a continuous intervening scarlet streak. Underside. *Forewing* greenish purplish-brown, washed with ochreous-brown apically; markings as on upperside, but more prominent. *Hindwing* greenish ochreous-brown; the scarlet spots very prominent and sometimes with scarcely any black border; the costal and abdominal border of the wing is lined with scarlet, and there are two black cell-marks and two marks above the cell, each being centred with scarlet.

Female. Upperside slightly paler than the male. *Forewing* with an oblique discal macular greenish-white band, composed of irregular-shaped spots, of which the three upper are small, the next larger and elongated, the fifth much larger and obliquely broader, the two lower being respectively small; the interspace between the discoidal marks also white, and thus form an inner portion of the band; beyond is a series of three, sometimes a fourth, lower smaller white spots before the apex. *Hindwing* marked as in the male. Underside paler than in the male. *Forewing* greyish at the base, apex ochreous-brown, posterior angle greenish-grey; with macular white band and subapical spots, and scarlet marks, as above. *Hindwing* with discal and submarginal scarlet-centred spots and basal markings, and scarlet borders as in the male, but less prominently defined. *Body* and palpi above dark greenish-brown, beneath and legs greyish-brown; collar, side of palpi, and front of fore tibiæ and tarsi streaked with scarlet.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{2}{10}$  inches.

CATERPILLAR.—Chilopodiform; elongated; armed with ten pairs of long horizontally-projected very delicately-branched spines. Colour grass-green, with a dorsal row of large purple-brown angulated spots, each with or without a small pure white diamond-spot in its middle, these dorsal spots being placed on the anterior half of the 4th, 6th, 7th, 9th, 10th, 11th, and 12th segments; the lateral spines green, tip with purple-brown.

CHRYSLIS.—“Similar to *E. Garuda*; green, but with two lateral brown marks, each with a dirty-white centre, and two brown points equally with whitish centres between these and the terminating projection” (A. Grote).



EGG.—Unknown.

HABITAT.—India; Ceylon; Burma; Malay Peninsula, etc.

DISTRIBUTION.—“This species has a very wide range. It occurs at Fyzabad in Oudh, in Calcutta and Sikkim, and Eastwards as far as Upper Assam, also in Burma, Orissa, Bombay, and thence Southward to Ceylon” (de Nicéville, Butt. Ind. ii. 221). Mr. W. Doherty records it from the “Kali Valley at Baghrihat, 2500 feet, Kumaon; scarce” (J. A. S. Beng. 1886, 124). Major Godwin-Austen took it “East of Hurdwar, N.W. Provinces.” The late General G. Ramsay obtained it in Nepal. “A single female taken in Sikkim at 2000 feet elevation in October” (de Nicéville, J. A. S. Beng. 1882, 59). “Rare in Sikkim (the female commoner than the male) at low elevations from April to October” (*id.* Sikkim Gazetteer, 1894, 144). The late W. S. Atkinson obtained it in “Sikkim, the Khasias and Plains of Bengal” (MS. Notes). Colonel C. Swinhoe records it from the Khasias (Tr. Ent. Soc. 1893, 286). Mr. Wood-Mason obtained “one male at Silcuri, Cachar” (J. A. S. Beng. 1887, 362). Mr. L. de Nicéville found it “rare in the neighbourhood of Calcutta” (J. A. S. Beng. 1885, 45). The late Capt. R. C. Bevan took it in Maungbhoom. Mr. A. Grote found the larva near Calcutta, in October, feeding on Loranthus. Mr. W. C. Taylor records it as “very rare at Khurda, in Orissa; only two taken” (List (1888) p. 6). “This is not very rare on the Hills near Bombay, but seems to keep to the tops of trees, basking in the sun. I have found it at Matheran in December” (E. H. Aitken, J. Bomb. N. H. S. 1886, 134). Mr. G. F. Hampson says it is “rare in the Nilgiris from 3000 to 4000 feet elevation” (J. A. S. Beng. 1888, 354). Mr. S. N. Ward found it “rare at Mangalore in April” (MS. Notes). Mr. H. S. Ferguson records it as “not uncommon in the low country of Travancore; not found in the Hills” (J. Bomb. N. H. S. 1891, 9). In Ceylon “it is a scarce butterfly, the male particularly so; it is fond of pitching on pathways. Range about 3000 feet from low country” (F. M. Mackwood, MS. Notes). Capt. Hutchison found it “occurring in the same districts as *E. Evelina*, having similar habits, the flight being quicker and stronger” (Lep. of Ceylon, i. p. 31). Signor Leonardo Fea obtained it at Bhamo, Burma, in November. Capt. E. Y. Watson took it in “Rangoon; not common” (J. Bomb. N. H. S. 1888, 6). Dr. N. Manders took “one specimen at Fort Stedman, Shan States, Burma, in July” (Tr. Ent. Soc. 1890, 524). Major C. H. E. Adamson “caught females of this insect about ripe guava fruit in Rangoon, and in Arakan, in January; the males I have only caught near Bhamo. Unlike other species of *Euthalia*, the female seems to be the most abundant” (List, p. 18).

Mr. H. Druce records it from “Nahconchaisee, Siam” (P. Z. S. 1874, 106). Mr. W. L. Distant obtained it in the Malay Peninsula (Rhop. Malay. p. 128). Dr. L. Martin took it in N.E. Sumatra (J. A. S. Beng. 1895, 426).



HABITS OF IMAGO.—“The males are fond of basking in the sun on high trees or hill tops along with *Charaxes Athamas* and *Cynthia*. With the exception of *E. Garuda* occasionally, the other Euthalias never do this. The females frequent the forests at the foot or on the slopes of the hills and do not show themselves much” (J. Davidson, J. Bombay N. H. S. 1896, p. —?). “It is fond of carrion, and a friend informed me that he once took a specimen on a piece of meat in the Crawford Market, in Bombay City” (J. Betham, J. Bombay N. H. S. 1890, 284). Major Adamson “caught females of this insect about guava fruit in Rangoon” (List, p. 18).

FOOD-PLANT, AND HABITS, OF LARVA.—Mr. A. Grote found the larva near Calcutta in October, feeding on *Loranthus*. Messrs. Davidson and Aitken record finding “the larvæ in Bombay District in August, September, and October, on two common species of the so-called mistletoe (*Loranthus*). It probably continued till the end of the year. After moulting it eats its cast skin, spines and all. It is worthy of notice that the leaves of *Loranthus* are often disfigured with spots or patches of purple-brown similar to the coloured tips of the larval spines. Out of a large number of larvæ reared, only a few female butterflies were obtained” (J. Bombay N. H. S. 1890, 262, 276).

Of our illustrations of this species on Plate 233, figs. 1, 1a represent the larva and pupa from Mr. A. Grote’s original drawing, and figs. 1b, c, d, e, the male and female.

### EUTHALIA GARUDA.

WET-SEASON BROOD (Plate 234, figs. 1, larva and pupa; 1a, b, c, d, ♂ ♀).

*Adolias Garuda*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 186, pl. 6, figs. 2, 2a, larva and pupa;

*id.* Trans. Ent. Soc. 1859, p. 64, pl. 3, fig. 2, ♂ ♀. Butler, Proc. Zool. Soc. 1868, p. 60.

*Euthalia Garuda*, Moore, Lep. of Ceylon, i. p. 32, pl. 16, figs. 2, 2a, ♂ ♀ (1881). Distant, Rhop.

Malay. p. 117, pl. 14, figs. 1, 2, ♂ ♀ (1883). de Nicéville, Butt. of India, etc., ii. p. 216 (1886).

IMAGO.—Male. Upperside umber-brown, of a more or less dark tint, glossed with dark olive or purpurescent-brown; cilia alternately edged with white; basal marks black-lined. *Forewing* with a transverse discal broad diffused sinuous-edged blackish fascia and a narrow diffused submarginal lunular fascia; the inner fascia bordered anteriorly on its outer edge with a series of, generally five, decreasing small white dentate spots—sometimes the two, or occasionally the three lower, are obsolescent or even absent; these spots vary in size on individual specimens, the series in some being uniformly larger, in others uniformly small; beyond are two subapical obliquely-superposed very small white spots. *Hindwing* with a discal transverse blackish curved fascia, its outer edge being sinuously defined, its inner diffused,

followed by a submarginal series of black inverted points. Underside pale greyish ochreous-brown, palest and most greyish basally; the basal black-lined marks distinct; outer borders suffused with lilacine-grey. *Forewing* with a more or less prominently-defined blackish submarginal broad lunular fascia, and a discal series of white dentate spots and subapical spots. *Hindwing* with an obscurely-defined narrow submarginal dusky-brown fascia, and a row of black points. *Body* and palpi above dark brown; beneath, palpi and legs pale greyish-ochreous; antennæ blackish, tip with red.

Female. Upperside paler brown, of a more or less olivaceous or purpurescent-brown tint; transverse fasciæ darker brown. *Forewing* with the discal area between the fasciæ more or less irrorated with olivescient-grey scales; a series of five larger-sized discal white spots, and two subapical spots, the discal series in individual specimens varying uniformly in size, and in some the two lowest, or the lowest only, is small, sometimes even (in Burmese specimens) the lowest is larger than the penultimate, and occasionally (Darjiling specimens) the two upper are smaller; the third and fifth absent and the fourth also small, also, in some few (Bombay and Malabar specimens) there is a very small longitudinal whitish spot beneath the lower median veinlet; the subapical white spots small. Underside of the same ground-colour as in the male, South Indian specimens being generally greyer than those of Upper Indian and Burmese; markings the same. *Forewing* with the discal white spots and subapical spots as on the upperside.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

DRY-SEASON BROOD (Plate 235, figs. 1, 1a, b, c, ♂ ♀).

*Euthalia Merilia*, Swinhoe, Trans. Ent. Soc. 1893, p. 286.

Male. Upperside paler than in wet-season brood, and of a more uniformly pale olive-brown tint; basal marks black; the discal and submarginal fasciæ being dusky-brown and well-defined; two very indistinct slender whitish lunate spots showing on the upper edge of the discal fascia on the forewing, but obsolete in some specimens. Underside of a uniform pale brownish-ochreous, the outer margins of both wings washed with lilacine-grey; transverse fasciæ either obsolescent, or their course being indicated by a slightly darker brownish-ochreous tint.

Female. Upperside paler olivescient-brown than in male, the transverse fasciæ obscurely defined; basal marks less distinct. *Forewing* with the upper discal and subapical spots brownish-white, the upper spots only, above the median, being present in some specimens, in others the lower spots are obsolescent or minute. Underside of the same uniformly pale brownish-ochreous, with the transverse fasciæ obsolescent or obscurely defined as in the male; basal marks slender.

Expanse, ♂  $2\frac{5}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.



CATERPILLAR.—Chilopodiform. Head large, face broad, flattened in front. Head and body above and beneath including the legs very sparsely covered with extremely fine short hairs. Body armed on each side with ten horizontally-projected slender fleshy branched-spines, these spines being situated on the 3rd to the 12th segment, and each spine is numerously covered with both rather long and very short extremely delicate spines decreasing in length to the tip, where they are slightly stouter, and apparently rigid, the longest of these delicate spines being laterally-disposed and interlace with the spines of the next segment. (Described from a preserved Bombay specimen received from the late Dr. Leith.) Colour. Head and body, and spines, pale green; with a light yellow dorsal line touched with blue; the spines fringed with yellow.

CHRYsalis.—Short, thick, broad across the middle; with a conically-triangular medio-dorsal keeled prominence; anal end short and tubercular at apex; thorax tapering, head-piece ending in two short obtuse points; suspended by the tail from underside of a leaf.

HABITAT.—India; Ceylon; Burma; Malay Peninsula, etc.

DISTRIBUTION.—“This is the commonest and most widely spread species of the group occurring in India. It is met with throughout the outer ranges of the Himalayas and in the plains, except in the desert tracts. It also occurs in Ceylon, Burma, and the Malay Peninsula” (de Nicéville, Butt. Ind. ii. 217). In the Western Himalayas, the Rev. J. Hocking obtained it in the “Kangra District in October; the larva feeding on mangoe” (P. Z. S. 1882, 239). Mr. W. Doherty found it in the “Kali Valley, Kumaon, 2000 to 3000 feet elevation. Scarce” (J. A. S. Beng. 1886, 124). “In Sikkim it is a common species in the low valleys and Terai, where it is to be found all the year round. It is a variable species, the dry-season forms being much lighter coloured than the wet-season forms, and the white spots on the forewing in both sexes differing greatly in different specimens in number and size” (de Nicéville, Sikkim Gazetteer, 1894, 143). The late Mr. W. S. Atkinson’s collection contained specimens from the Himalayas, Khasias, and Plains of Bengal. We possess males and females of both the wet and dry season broods from the N.W. Himalaya, Deyra Dhoon, Darjiling, and Calcutta. Colonel C. Swinhoe records it from the “Khasia Hills, and Cherra Punji” (Tr. Ent. Soc. 1893, 286). Mr. Wood-Mason records “sixty-two males and twenty females, taken in the forests around Silcuri, Cachar, between end of May and beginning of August” (J. A. S. Beng. 1887, 361). It is “very common in the neighbourhood of Calcutta, and I have frequently bred the larva from mangoe; the butterflies frequenting these trees” (de Nicéville, l.c. 217). Mr. W. C. Taylor found it “common at Khurda in Orissa” (List, p. 6). Colonel Swinhoe records it as “common everywhere in Bombay and the Dekkan, from October to May” (P. Z. S. 1885, 130). Also taken



in Thana District, Bombay, in November. "Island of Bombay, October; larva feeds on the mangoe tree" (Dr. Leith's Notes). "Taken at Kirkee, Bombay, September" (Major J. W. Yerbury, MS. Notes). Specimens were taken by the late Dr. Bayne Reed in the Wynaad. Mr. S. N. Ward obtained it at Mangalore, Calicut, Kanara, and reared the larva on mangoe. Mr. G. F. Hampson found it "rare in the Nilgiris from 1000 to 3000 feet" (J. A. S. Beng. 1888, 354). The late Sir Walter Elliot bred the "larva on mangoe at Palamanar, Madras, in September, which changed to pupa on the 30th, the perfect insect emerging October 10th" (MS. Notes). Major E. Y. Watson took "a few specimens at Gersoppa Falls, Mysore, in December" (J. Bombay N. H. S. 1890, 9). Mr. H. S. Ferguson found it "very common in the Plains and Hills of Travancore, a form of the male occurring in which the discal spots are obsolete" (J. Bombay N. H. S. 1891, 9).

In Ceylon, Mr. F. M. Mackwood (MS. Notes) says "*Garuda* very scarce; caught by me at about 3000 feet elevation." A female labelled 'Ceylon' is in Mr. Grose-Smith's collection. We possess specimens taken by Colonel J. W. Yerbury at "Peripancherakullam on the Kandy Road, Ceylon, in October."

In Burma, Major Adamson says it is very common throughout the country (List, p. 18). Signor Leonardo Fea took it at Bhamo in September and in Rangoon in December. Major Watson obtained it at "Rangoon, and Beeling, Tenasserim, commonly" (J. Bombay N. H. S. 1888, 6). Capt. C. T. Bingham took a specimen of the 'dry-season' brood in February in the Thoungyeen Valley, Upper Tenasserim. Dr. N. Manders observed it as "an abundant species in the Shan States, Burma, especially at the edge of belts of forests. It is common also in Karenni" (Tr. Ent. Soc. 1890, 524). Dr. J. Anderson took it in "Mergui in December" (J. Linn. Soc. Zool. 1886, 37). Mr. H. Druce records it from "Nahconchaisee, Siam" (P. Z. S. 1874, 106).

It also occurs in the Malay Peninsula. Mr. Distant records it from "Province Wellesley, and Malacca" (Rhop. Malay. 118). Dr. L. Martin obtained it in N.E. Sumatra, and says "this species appears only near human habitations. It is most plentiful in January and February" (de Nicéville, J. A. S. Beng. 1895, 424). A specimen labelled 'Java' is in the British Museum Collection, this latter locality, however, being doubtless incorrect.

HABITS OF IMAGO.—"These butterflies frequent mangoe trees, and usually settle with wings widely spread open, sometimes on the underside of a leaf" (de Nicéville, Butt. India, ii. 217). "I think this butterfly is less common in the jungle than it is about human dwellings. It loves to bask on old grey walls, and may be found making itself happy in the dirtiest part of the native town. I am quite sure it prefers the liquids which it sips from the roadside gutter to the nectar of any flower" (E. H. Aitken, J. Bombay N. H. S. 1886, 134). "It is a very pugnacious creature, but readily comes to Mhowa refuse. I have caught many and watched

more on the margins of tanks close to the water, where they descend towards the middle of the day to suck up the moisture" (J. Betham, J. Bombay N. H. S. 1894, p. 284). "It is common in Karwar, as in other parts of the Bombay Presidency, frequenting gardens and basking on walls; it is a thirsty insect, easily attracted by fermented toddy" (J. Davidson, J. Bombay N. H. S. 1896, p. — ?). Dr. L. Martin says "this species, in N.E. Sumatra, appears only near human habitations, as the food-plant of the larvæ is the leaves of the mango tree, which is always planted near villages and round houses. It is, therefore, not found in higher elevations. The males may be seen plentifully in January and February, pursuing each other from the shade of one tree to another" (J. A. S. Beng. 1895, p. 424).

FOOD-PLANTS OF LARVA.—In the late General Hardwicke's drawings, now in the Zoological Department, British Museum, the larva, pupa, and imago are figured (Nos. 81, 85, 86), the larva noted as being found "feeding on *Trophis aspera* at Dum Dum, and on a species of *Bryonia*." In the late Mr. A. Grote's drawings the larva is figured, found by him in the Calcutta District, feeding on the mango (*Mangifera indica*). Mr. L. de Nicéville says, "I have frequently bred the larva in Calcutta from mango trees" (Butt. Ind. ii. 217). Mr. J. Hocking, in the Kangra District, also found the larva on mango (P. Z. S. 1882, 229). In Bombay, according to the observations of Messrs. Davidson and Aitken, made in Bombay, "it commonly feeds on the mango and the Cashew Nut tree (*Anacardium occidentale*), but we have found it on the Mulberry, and the Rose, and on *Loranthus* along with *E. Lubentina*. In rearing the larva of *Garuda* no such disparity of the sexes of the perfect insect was observed, as occurs in *E. Lubentina*. The pupa hangs by the tail on the under-side of a leaf, often the very one on which it spent its larval life, for it is too cautious an insect to eat the leaf it lives on. One curious fact which escaped our notice till this season, is that the spines of *Euthalia* are epidermal, and are shed at each moult, the larvæ emerging with only a row of small, blunt processes, which in a very short time expand into spines" (J. Bombay N. H. S. 1890, pp. 262, 275, 350). The late Sir Walter Elliot also "found the larva at Palamanar, Madras, on the mango in September" (MS. Notes).

BROODS OF LARVÆ.—"The first brood of larvæ was found in Bombay about the end of June, and the butterfly swarmed in July. About a month after larvæ became very plentiful again, and so continued until we went into camp in the beginning of September, and had to give up keeping them; they certainly lasted till December" (Davidson and Aitken, *l.c.*, 1886, 134). The late Dr. Leith "found the larva on mango in Bombay at end of November" (MS. Notes).

HABITS, AND PROTECTIVE RESEMBLANCE, OF LARVA.—"I have often found the larva of *Garuda* at rest on the middle of a mango leaf, in which position it is very difficult to see, though its form is so remarkable; its body with the pale dorsal line answers to the midrib of the leaf, while the lateral branched-spines pass for the other veins



of the leaf on which it is resting, forming a remarkable instance of protective coloration, structure and character combined" (de Nicéville, Butt. India, ii. 192). "The caterpillar, which eats little, and grows slowly, spends most of its time at rest motionless, on the upperside of a leaf of precisely the same tint as itself. A dorsal line, or row of spots, however it may look on paper, succeeds in keeping up the continuity of the midrib of the leaf in a way which cheats the sharpest eye, while the long interlaced spines, extending on each side, fall in with the neuration" (Davidson and Aitken, J. Bombay N. H. S. 1890, 275).

**EUTHALIA VASANTA** (Plate 236, figs. 1, 1a, b, c, d, ♂ ♀, larva and pupa).

*Adolias Vasanta*, Moore, Trans. Ent. Soc. Lond. 1859, p. 77, pl. 7, fig. 2, ♀. Butler, P. Z. S. 1868, p. 602.

*Euthalia Vasanta*, Moore, Lep. of Ceylon, i. p. 33, pl. 17, figs. 2, 2a, b, ♂ ♀, larva and pupa (1881). de Nicéville, Butt. of India, etc., ii. p. 217 (1886).

IMAGO.—Male. Upperside dark purpurescent-brown, discal area of forewing and posterior half of hindwing glossy olivescence-brown; basal marks black-lined; cilia dark brown. *Forewing* with a transverse inner-discal broad obscure blackish sinuous-edged fascia, and a narrow submarginal lunular fascia. In some specimens are faint traces of small incipient whitish lunate marks on the outer upper edge of the discal fascia, and also of similar subapical dots. *Hindwing* with a narrower discal obscure blackish fascia and a submarginal series of small dentate spots. Underside pale dull greyish-brown, dusky externally; the outer border slightly washed with lilacine-grey; basal black-lined markings slender; the transverse fasciæ narrower and much less defined, the discal obscure. *Forewing* also with very slightly-defined small whitish lunate marks to the upper edge of the obscure narrow sinuous discal fascia, and small white subapical dots. *Body* and palpi above dark brown, beneath and legs pale brownish-white; antennæ black, tipt with red.

Female. Upperside olivescence fuliginous-brown; basal marks black-lined; transverse fasciæ obscurely darker brown. *Forewing* with an outwardly-oblique transverse discal white narrow macular band, commencing from middle of the costa and extending to lower median veinlet near its end, the spots somewhat cordate, the lower posteriorly elongated or sometimes nearly or quite broken across its middle; beyond are two obscurely-defined very small white subapical spots. Underside as in the male, except that the transverse discal oblique white macular band, and the slightly-defined subapical small white spots, are present.

Expanse,  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀ 3 to  $3\frac{2}{10}$  inches.

CATERPILLAR.—Chilopodiform. Dark green; armed with ten pair of lateral, long, paler green, horizontally-projecting branched-spines; a pale yellowish dorsal



line and a lateral row of yellowish dots, the segments crossed by a purplish line. Feeds on mangoe (*Mangifera indica*).

CHRYsalis.—Short, keeled along the back, broadly triangular across the middle; green, with a yellow transverse dorsal and a lateral band, and a blackish-bordered thoracic lateral spot; a lateral row of abdominal segmental blackish dots.

DISTRIBUTION.—“Common at Colombo about Mangoe and Cashew trees. Flight rapid. Settles on the leaves and on the ground” (Hutchison). “Plentiful at Galle and Kandy” (Wade). Major J. W. Yerbury obtained many specimens near Kandy in October.

**EUTHALIA ACONTIUS** (Plate 235, figs. 2, 2a, b, ♂ ♀).

*Adolias Acontius*, Hewitson, Annals of Nat. Hist. 1874, p. 357; Exot. Butt. v. *Ad.* pl. 4, fig. 11, ♀ (1875). Wood-Mason, and de Nicéville, J. A. Soc. Beng. 1881, p. 247, ♂.

*Tanaecia Acontius*, Moore, P. Z. S. 1877, p. 586.

*Euthalia Acontius*, de Nicéville, Butt. of India, etc., ii. p. 215 (1886).

IMAGO.—Male. Upperside dark purpurescent-brown. Cilia brown; basal black-lined marks thick and prominent. *Forewing* with a transverse discal broad diffused black sinuous band and a submarginal broad lunular band; the discal band externally edged at its anterior end by a series of two, sometimes three, very slender indistinct white lunules, and by a lower larger white lunate spot between the upper medians; two white small short subelongate superposed subapical spots at the inner anterior end of the outer band. *Hindwing* with a broad transverse discal black submarginal band, its outer edge sharply sinuous and its inner edge diffused; beyond is a submarginal row of prominent black dentate spots. Underside greyish ochreous-brown; basal marks prominent. *Forewing* palest at the base; discal white lunules and subapical spots distinct; submarginal black lunular band prominent; outer border washed with purplish-grey. *Hindwing* with indistinctly-defined discal brownish fascia and prominent black submarginal dentate spots; basal area broadly washed with olivescent-grey. *Body*, palpi, and legs above brown, beneath grey; antennæ brown above, reddish below.

Female. Upperside pale purpurescent-brown; basal marks prominent; discal and macular submarginal bands darker brown, inwardly diffused, except the submarginal dentate spots on the hindwing, which latter are most distinct. *Forewing* also crossed by an outwardly-oblique medial discal broad white macular band, which widens from middle of the costa to the lower median veinlet, below which is a smaller shorter spot; three small white spots also before the apex, the lowest brown-speckled and merging at the lower radial with the third and fourth discal spots; the lower discal spots externally and the posterior angle diffusely speckled

with purplish-grey scales. *Hindwing* also with a broad purpurescent-white transverse band occupying the interspace between the discal and submarginal brown band; apex diffusely speckled with purpurescent-grey scales. Underside somewhat brighter tinted than in the male; basal black-lined marks prominent; discal sinuous and submarginal macular band distinctly defined; outer borders washed with purpurescent-grey. *Forewing* with the discal white macular band and subapical spots as above. *Hindwing* with the discal white intervening band tinged with pale olivescent.

Expanse, ♂  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{2}{10}$  inches.

HABITAT.—South Andamans.

This is a very rare species; one male and two females are in the Hewitsonian Collection, taken by the late Mr. Roepstorff, the male being placed as an example of *E. Garuda*. Other males and females are in the collections of Mr. Walter Rothschild and Mr. Grose-Smith.

**EUTHALIA JAMA** (Plate 237, figs. 1, 1a, b, c, d, e, ♂ ♀).

*Adolias Jama*, Felder, Reise Nov. Lep. iii. p. 431 (1866). Butler, Proc. Zool. Soc. 1868, p. 604; *id.* Trans. Linn. Soc. Zool. i. p. 539 (1877).

*Euthalia Jama*, de Nicéville, Butt. of India, etc., ii. p. 219 (1886); *id.* J. A. Soc. Bengal, 1887, p. 361, pl. 16, fig. 3, 4, ♂ ♀.

IMAGO. Male. Upperside dark purpurescent umber-brown; cilia black; basal marks black-lined. *Forewing* with an inwardly-oblique transverse rather broad black inner-discal and a submarginal diffused fascia; an obscurely-defined upper discal series of very slender longitudinal white streaks decreasing from the costa (where the upper portions are broken and show their ends only) to the middle median, and there ending in two very small obliquely-opposed spots. *Hindwing* with a transverse rather broad black discal fascia and a narrow submarginal sinuous fascia. Underside pale brown, varying from paler umber to ochreous-brown; basal black-lined marks prominent. *Forewing* with a narrower and less-defined blackish submarginal fascia, and more prominently-defined upper discal white streaks than on the upperside; the inner fascia obsolescent. *Hindwing* with narrower and much less obscurely-defined discal blackish fascia and submarginal dentate fascia. *Body* and palpi above dark brown; palpi and legs beneath pale brownish-white; antennæ black, tipt with red.

Female. Upperside paler; of an olivescent fuliginous-brown. Both wings with black-lined basal marks, and obscurely-defined dusky-brown fasciæ as in the male. *Forewing* with upper discal longitudinal whitish streaks more prominent, each portion being broader and thicker, and sometimes the posterior portions are also



more elongated, thus giving the lower part a broader maculate appearance. Under-side pale greyish-brown, darkest externally; basal marks very prominent; the transverse submarginal fasciæ dark brown, inner fasciæ very obscurely-defined. *Forewing* with the upper discal white streaks prominent and broad.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀  $3\frac{4}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—Sikkim; Bhotan; Assam; Naga and Khasia Hills; Cachar; Lushai Hills; Burma.

DISTRIBUTION.—“This is a rare species. It occurs in Sikkim and Bhotan. Mr. S. E. Peal has taken it at Sibsagar in Upper Assam. It also occurs in the Naga Hills” (de Nicéville, Butt. India, ii. 220). “Very rare in Sikkim, probably found at low elevations throughout the summer” (*id.* Sikkim Gazetteer, 1894, 144). Specimens from Sikkim, taken in July by Mr. Otto Möller, are in Mr. Walter Rothschild’s collection. Colonel Swinhoe records it from the Khasia Hills (Tr. Ent. Soc. 1893, 286). Mr. Wood-Mason obtained a single female on “Nemotha Peak, Cachar, in September” (J. A. S. Beng. 1887, 361). A specimen from the Lushai Hills is in Mr. P. Crowley’s collection, and Colonel C. H. E. Adamson took it in Burma. It probably also occurs in Tenasserim. Specimens from the Malay Peninsula\* are in our own Collection, and also in that of the British Museum, also from Borneo. It has been taken in “N.E. Sumatra by Dr. Hagen and Dr. J. Martin” (J. A. S. Beng. 1895, 425).

**EUTHALIA PHEMIUS** (Plate 238, figs. 1, 1a, b, c, ♂ ♀).

*Itanus PheMIus*, Doubleday and Hewitson, Gen. D. Lep. pl. 41, fig. 4, ♂ (1848).

*Adolias PheMIus*, Westwood, Gen. D. Lep. p. 291 (1850). Moore, Trans. Ent. Soc. 1859, p. 65, pl. 3, fig. 3, ♂ (*nec* ♀).

*Adolias (Itanus) PheMIus*, Felder, Neues Lep. p. 34 (1861).

*Euthalia PheMIus*, de Nicéville, Butt. of India, etc., ii. p. 218 (1886). Staudinger, Exot. Schmett, pl. 54 (♂ only).

*Adolias Sancara*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 195 (1857); *id.* Trans. Ent. Soc. 1859, p. 78, pl. 9, fig. 1, ♀.

IMAGO.—Male. Upperside dark purpurescent umber-brown. Cilia white; basal marks black-lined. *Forewing* with a transverse broad obscure blackish diffused inner-discal and a submarginal fascia; a more or less prominent upper discal series of very slender longitudinal white streaks, the upper being elongated, the lower short, and the upper partly coalescent outwardly with a subapical curved row of small lobate white spots. *Hindwing* with a transverse broad obscure blackish

\* The species described and figured as *E. Jama* in Distant’s Rhop. Malayana, p. 119, pl. 14, fig. 8, pl. 15, f. 4, ♂ ♀, is certainly not this species. It is doubtless *E. Alpheda*.



diffused fascia, and a broad cobalt-blue posterior band, which latter widens from middle of exterior margin to above anal angle, the outer border of this band being white and the extreme marginal edge lined with black. Underside paler brown; basal black-lined marks prominent. *Forewing* with the upper discal white streaks and subapical spots more distinct than on upperside, and accompanied beneath, between the middle median and submedian veinlet, by less-defined whitish spots; a submarginal black lunular fascia and the outer marginal border washed with pale purpurescent-blue. *Hindwing* with a less-defined blackish discal and submarginal fascia, the outer marginal border being washed with purpurescent-blue and the edge white; abdominal margin washed with grey. *Body* and palpi above dark brown; palpi and legs beneath brownish-white; legs above brown; antennæ black, tipt with red.

Female. Upperside of the same dark brown colour as in the male; the transverse blackish fasciæ less defined, the basal black-lined marks distinct. *Forewing* also with a prominent outwardly-oblique discal white macular band extending from middle of the costa to the lower median above the posterior angle, the upper portions of the band composed of rather elongated broad quadrate spots and the lower outwardly indented, the lowest extending in a prolonged posterior portion to near the outer margin; beyond the band are two, sometimes three, very small white obliquely-superposed subapical spots. Underside with the ground-colour, basal marks, and transverse blackish fasciæ as in the male; the outer borders being washed with purplish-grey. *Forewing* also with the oblique discal white band and subapical spots as on the upperside. *Hindwing* also with an obscurely-defined submarginal blackish-speckled dentated fascia.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀ 3 to  $3\frac{4}{10}$  inches.

HABITAT.—Sikkim; Bhotan; Assam; Silhet; Cachar; Khasia and Naga Hills; Burma; Siam; Malay Peninsula; Hong Kong.

DISTRIBUTION.—“A common species in Sikkim, up to 3000 to 4000 feet elevation, from April to December” (Elwes, Tr. Ent. Soc. 1888, 359). Specimens taken in Sikkim, in March, May and November by Mr. Otto Möller, are in Mr. Walter Rothschild's collection. “Not uncommon in Sikkim at low elevations from April to December” (de Nicéville, Sikkim Gaz. 1894, 144). “It occurs eastward as far as Sibsagar in Upper Assam, but seems to be nowhere common” (de Nicéville, Butt. Ind. ii. 219). Mr. G. C. Dudgeon obtained it in Bhotan. Colonel C. Swinhoe records it as “common in the Khasia Hills.” Mr. Wood-Mason took “one female in Irangmara, Cachar” (J. A. S. Beng. 1887, 361). Major C. H. E. Adamson obtained “one specimen only in the Arakan Hills, in December” (List. p. 18). A male from the Malay Peninsula is in the collection of Mr. Walter Rothschild.

Mons. G. A. Poujade records it from “Laos, Siam” (Nouv. Arch. du Mus.

3rd ser. iii. p. 263). Mr. J. J. Walker found it "moderately common in Hong Kong; worn specimens occurring in December and January, and a fresh brood appears early in April. The male, as its compact and powerful build would indicate, is a tremendously rapid flyer, but its boldness renders it a very easy prey to the collector when it settles on a leaf within reach, with its wings fully expanded. The female (Sancara) is much less common than the male, and frequents shady places, while the male is fond of open sunny paths in the Happy Valley. Having taken a male and a female in 'cop,' I have no doubt of the specific identity of Sancara with Phemius. I once bred a male specimen from a large and very stout green chrysalis richly spotted with gold, which I found attached to a twig under some Litchi trees (*Nephelium litchi*) much frequented by the perfect insects" (Tr. Ent. Soc. 1895, 457).

**EUTHALIA APICALIS** (Plate 239, figs. 1, 1a, b, c, ♂ ♀).

*Adolias apicalis*, Vollenhoven, Tijds. voor Entom. 1862, p. 186, pl. 10, fig. 1, ♂.

*Euthalia parta*, Distant, Rhop. Malay. pl. 37, fig. 7, ♂ (*nec* Moore).

*Euthalia Alpheda*, Elwes, P. Z. S. 1891, p. 280 (*nec* Godt.).

*Euthalia Binghamii*, de Nicéville, Journ. Bombay Nat. Hist. Soc. 1895, p. 265, pl. N. fig. 8 (♀ only).

IMAGO.—Male. Upperside dark rich purplish-brown; basal marks obscure. *Forewing* with a transverse discal broad obscure blackish diffused sinuous fascia, and a narrow denticulated submarginal fascia; the two fasciæ widest apart anteriorly, but apparently, obscurely, partly coalescent at their angles on the medians and submedian veinlets, and between the anterior ends is a short subcostal similar blackish patch. *Hindwing* with a similar discal obscure broad blackish fascia, and a submarginal row of more or less dentated points. Underside paler ochreous-brown; the two transverse blackish fasciæ on both wings narrower, more or less obscurely-defined, the intervening short subcostal patch on the forewing also obscurely-defined, and the apex of the wing tipped with a lilacine-grey dash; basal marks distinct. *Body* and palpi above, dark brown, beneath and legs light brownish-ochreous; antennæ above dark brown, reddish beneath.

Female. Upperside pale olivaceous ochreous-brown. Both wings with transverse obscure darker inwardly-diffused brown narrower fasciæ, the submarginal fascia on the hindwing formed of small points; basal marks dark brown-lined and obscure. *Forewing* also with an outwardly-oblique upper discal series of five more or less rounded sullied-white spots, the third and fifth being the smallest, bordering the inner-discal fascia, between which latter and the submarginal denticulate fascia the darker brown subcostal patch is visible. Underside paler ochreous-brown; the transverse darker brown fasciæ more or less obscurely-defined, the submarginal



macular; basal marks slender. *Forewing* with the upper discal series of five spots clear unsullied white; the apex of forewing, and nearly the entire surface of the hindwing being washed with pale greenish-grey, the apex and the outer border partially, and the discal fascia on the latter showing the ground-colour.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—Lower Burma; Tenasserim; Malay Peninsula; S.E. Borneo.

NOTE.—By the kindness of Mr. C. Ritsema, the Curator of the Entomological Cabinet in the Leyden Museum, we are enabled to identify this species as the true *apicalis* of Vollenhoven, from a coloured drawing of the upper and underside of the type specimen. We have assigned, as the female of *E. apicalis*, the butterfly which Mr. de Nicéville (*l.c.*) erroneously—but with doubt—described as being that sex of the *E. Binghami*. We have also examined and verified specimens of both sexes of *E. apicalis*, as here described, taken in E. Pegu, by Mr. W. Doherty. As a corroboration, we may state, that the males of the two closely allied Philippine species, namely *E. Lusiada* and *E. Mindorana*, described by Dr. Staudinger, with which we have compared *E. apicalis*, have similarly marked males and females.

DISTRIBUTION.—Both sexes of this species, taken in the Karen Hills, E. Pegu, in March and April by Mr. W. Doherty, are in Mr. P. Crowley's collection. The female (described as *E. Binghami*, by Mr. de Nicéville) was taken by Lieut.-Col. Bingham in the Dallnat Range, Tenasserim. Mr. H. Druce has a female taken in the Thoungyeen forests, and a male, also from Thoungyeen, is in the British Museum. Both sexes, from Perak, Malay Peninsula, and Borneo, are in Mr. Walter Rothschild's collection. Mr. Distant (*Rhop. Malay. pl. 37, fig. 7*) also records it from Malacca as *Euth. Parta*, which latter, however, is quite a distinct species. Vollenhoven records the male type of *apicalis* from Borneo.

#### EUTHALIA ZICHRI (Plate 240, figs. 1, 1a, ♂).

*Adolias Zichri*, Butler, *Cistula Entom. i. p. 6, ♂ (1869)*.

*Euthalia Zichri*, Distant, *Rhop. Malayana, p. 438, pl. 43, fig. 6, ♂ (1886)*.

IMAGO.—Male. Upperside dark purpurescent-brown. *Forewing* with the outer border palest; basal black-lined marks indistinct; with a broad transverse discal and a submarginal very obscurely-defined blackish fascia, the latter being partly confluent with the former from below the upper median veinlet. *Hindwing* from the base to the disc blackish, the discal edge being sinuous, the outer margin broadly bordered with a greenish-blue band,\* which extends more or less broadly

\* In some Bornean specimens this band is of more virescent-blue tint, and in a Malacca example the blue colour also extends slightly up the posterior end of the outer margin of the forewing.



from near the apex to anal angle, the band being traversed by a submarginal series of small blackish hastate spots; the abdominal margin pale ochreous-brown. Underside uniformly pale ochreous-brown, the outer borders narrowly washed with purplish-grey; basal black-lined marks very prominent. *Forewing* with a transverse discal slightly-defined narrow blackish fascia, ending at the lower median and dilating anteriorly; followed by a more defined submarginal macular lunate fascia, the spots increasing in size posteriorly. *Hindwing* with a less-defined similar discal fascia and a submarginal row of small blackish-speckled points. *Body* and palpi above dark brown, beneath and legs pale ochreous-brown; antennæ above brown, below red.

Female. Unknown.

Expanse, ♂  $2\frac{6}{8}$  inches.

HABITAT.—Lower Tenasserim; Malay Peninsula; Borneo.

DISTRIBUTION.—A male, from Malawoon, Lower Tenasserim, taken by Mr. A. O. Hume, is in Mr. F. Godman's collection. "A single male, agreeing well with Mr. Distant's figure, from the foot of the Karen Hills, East Pegu," is recorded by Mr. Elwes (P. Z. S. 1891, 280).

It also occurs in the Malay Peninsula, and at Sarawak, Borneo. Mr. de Nicéville records it from N.E. Sumatra (J. A. S. Bengal, 1895, 426).

#### EUTHALIA ERIPHYLE (Plate 238, figs. 2, 2a, ♂).

*Euthalia Eriphyle*, de Nicéville, Journ. Bombay Nat. Hist. Soc. 1891, p. 353, pl. F. fig. 7, ♂.

*Euthalia Delmana*, Swinhoe, Trans. Ent. Soc. 1893, p. 287, ♂.

IMAGO.—Male. Upperside very dark olive-brown; cilia brownish-grey. *Forewing* with basal black-lined marks, the interspace between the middle cell-mark and the discocellular-mark is blackish; with a broad blackish transverse discal irregular fascia, and a narrower submarginal diffused fascia, both being confluent at their angles on the medians and submedian, thus leaving an upper and lower interspace of the paler ground-colour. *Hindwing* with basal black-lined marks; the basal area dusky-brown; the discal area with a blackish sinuous-edged fascia, followed by a submarginal rather broad diffused lunulate fascia. Underside uniformly pale brown; basal marks black-lined; transverse discal and a submarginal obscurely-defined narrow dusky fascia, the discal being lunular, the submarginal denticulated, the latter on the hindwing being reduced to small points. *Forewing* also with a patch of bluish-white scales at the apex, and the hindwing slightly tinged with grey along abdominal margin. *Body* and palpi above dark brown; beneath and legs pale brownish-grey; antennæ brown above, the tip reddish below.

Female. Unknown.

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

HABITAT.—Cherra Punji; Khasia Hills; Tenasserim.

NOTE.—The above description is taken from Colonel Swinhoe's type, which is identical with Mr. de Nicéville's figure, which latter, he states (Sikkim Gazetteer, 1894, 144), "is very pale, and evidently belonged to the dry-season form, while *Delmana* probably represents the rainy-season form."

DISTRIBUTION.—Colonel Swinhoe's type was taken at Cherra Punji. We possess a male taken in the Khasias by Colonel Godwin Austen. Mr. de Nicéville's type was taken in the "Attaran Valley, Mepley, and the Daunat Range in Middle Tenasserim" (*l.c.* 353). It is also recorded by Mr. de Nicéville from N.E. Sumatra (J. A. S. Bengal, 1895, 425).

#### EUTHALIA BINGHAMII (Plate 239, figs. 2, 2a, ♂).

*Euthalia Binghamii*, de Nicéville, Journ. Bombay Nat. Hist. Soc. 1895, p. 264, pl. N. fig. 7 (♂ only).

IMAGO.—"Male. Upperside. Both wings deep shining fuscous. *Forewing* with the following bronzy-fuscous markings:—two rounded spots in the discoidal cell, one being in the middle, one at the end; a subapical triangular patch, its base resting on the costa, its apex on the lower discoidal nervule; a broad marginal band, broadest on the inner margin, fining away to nothing before reaching the apex, the band at the anal angle bearing a small patch of greenish scales. *Hindwing* with the costa and outer margin broadly bronzy-fuscous, its inner edge on the disc regularly scalloped, bearing a series of five small oval black spots, one in each interspace from the first subcostal to the first median nervule; the outer margin broadly greenish-blue, broadest at the anal angle, fining away to nothing at the second subcostal nervule; the abdominal margin pale. Underside. Both wings light ochreous-brown, outwardly somewhat darker; the usual linear black markings in and about the discoidal cell. *Forewing* with an inner-discal black band from near the costal nervule to the first median nervule, anteriorly wide and somewhat diffused, posteriorly narrower; also an outer-discal somewhat macular black band, increasing in width towards the anal angle, ending in the submedian interspace in a large round spot, anteriorly continued to the extreme apex of the wing by a prominent pale greenish-blue elongated spot. *Hindwing* with the outer margin from the second subcostal nervule to the submedian nervule broadly pale metallic greenish-blue, which colour extends on to the disc anterior to the inner-discal fascia and into the discoidal cell; the inner-discal fascia



somewhat diffused; the outer-discal fascia of the forewing reduced to a series of seven black dots between the veins in the hindwing. *Body* black above, pale brown beneath; antennæ black above, the club and shaft beneath ferruginous."

Expanse, ♂  $2\frac{8}{10}$  inches.

HABITAT.—Tenasserim.

DISTRIBUTION.—Described by Mr. de Nicéville from a single male taken by Lieut.-Colonel Bingham in the Dallnat Range, Tenasserim.

INDO-MALAYAN AND CHINESE EUTHALIAS.—*Euthalia Adonia* (Pap. Adonia, Cramer, Pap. Exot. iii. pl. 255, figs. C, D, ♀ (1779). Hübn. Verz. p. 41 (1816). Distant, Rhop. Malay. p. 120, pl. 19, figs. 10, 11, ♂ ♀ (1883). *Aconthea lubentina*, Horsf. Catal. Lep. Mus. E. I. C. pl. 5, figs. 5, 5a, ♂ (1829). *Habitat.* Malay Peninsula; Sumatra; Java.—*Euthalia irrubescens*, Grose-Smith, Ann. N. H. 1893, p. 216; Rhop. Exot. p. 13, *Euth.* pl. 4, figs. 7, 8 (1894). Leech, Butt. of China, etc., p. 654. *Habitat.* W. China.—*Euthalia Djata*, Distant, Ann. Nat. Hist. 1887, p. 53. *Habitat.* N. Borneo.—*Euthalia Whiteheadi*, Grose-Smith, Ann. Nat. Hist. 1889, p. 313; Rhop. Exot. *Euth.* pl. 1, figs. 1-3, ♂ ♀. *Habitat.* N. Borneo.—*Euthalia culminicola*, Fruhstorfer, Ent. Nachr. 1894, p. 300. *Habitat.* Java.—*Euthalia Adeona*, Grose-Smith and Kirby, Rhop. Exot. p. 13, *Euth.* pl. 4, figs. 5, 6, ♀ (1894). *Habitat.* Borneo.—*Euthalia Ludonia*, Staudinger, Deuts. Ent. Zeit. 1889, p. 72. Grose-Smith and Kirby, Rhop. Exot. p. 11, *Euth.* pl. 4, figs. 1-4, ♂ ♀ (1894). *Habitat.* Palawan.—*Euthalia Aconthea* (Pap. Aconthea, Cramer, Pap. Exot. ii. pl. 134, figs. C, D, (1779). Boisd. Spec. Gén. Lep. i. pl. 3, fig. 2 (1836). *Syn.* Nymph. Disconthea, Godt. Enc. Méth. ix. p. 384 (1823). *Aconthea primaria*, Horsf. Catal. Lep. Mus. E. I. C. pl. 8, fig. 6 (1829). *Habitat.* Java; Borneo.—*Euthalia numerica*, Fruhstorfer, Stett. Ent. Zeit. 1885, p. 267, pl. 1, figs. 1, 2, ♂ ♀. *Habitat.* Nias.—*Euthalia Alpheda* (Nymph. Alpheda, Godart, Enc. Méth. ix. p. 384 (1823). Moore, Tr. Ent. Soc. 1859, p. 66, pl. 3, fig. 4, ♂ ♀. *Syn.* Adolias Octogesima, Vollenhoven, Tijds. Ent. 1862, p. 193, pl. 10, fig. 1, ♂ (♀ pl. 11, fig. 1, ♀). *Euth.* Jama, Distant, Rhop. Malay. p. 119, pl. 14, fig. 8, ♂; pl. 15, fig. 4, ♀. *Habitat.* Malay Peninsula; Sumatra; Java.—*Euthalia Phelada*, Semper, Reisen Phil. Lep. p. 88, pl. 16, figs. 7, 8, ♂ ♀. *Habitat.* Philippines.—*Euthalia Palawana*, Staudinger, Lep. Pal. p. 74. *Habitat.* Palawan.—*Euthalia Parta* (Adolias Parta, Moore, Catal. Lep. Mus. E. I. C. i. p. 185, ♂ ♀ (1857); Trans. Ent. Soc. 1859, p. 63, pl. 3, fig. 1, ♂ ♀. *Habitat.* Borneo.—*Euthalia Sandakana*. Comparatively smaller than Indian and Burmese *E. Garuda*. *Male*.—Upperside similar, except that the transverse discal five white spots are of more dentate shape and uniform style. *Female*.—Upperside olivescent-brown, the discal transverse spots less defined, sullied-white and dentate in shape, those below the upper median disposed obliquely inward—in *Garuda*, they are always outwardly-oblique. Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{6}{10}$  to  $2\frac{8}{10}$ . *Habitat.* Sandakan; N.



Borneo (Coll. Cator ; Moore).—*Euthalia Merta* (*Adolias Merta*, Moore, Tr. Ent. Soc. 1859, p. 72, pl. 6, fig. 4, ♀). Distant, Rhop. Malay. p. 437, pl. 43, figs. 1, 2, ♂ ♀ (1886). *Habitat.* Malay Peninsula ; Sumatra.—*Euthalia Agnis* (*Adolias Agnis*, Vollenhoven, Tijds. Ent. 1862, p. 202, pl. 12, fig. 2, ♀. Fruhstorfer, Berl. Ent. Zeit. 1894, p. 245, pl. 18, fig. 8, ♂. *Habitat.* Java.—*Euthalia Lusiada*, Felder, Wien. Ent. Monats. 1863, p. 119. *Habitat.* Luzon.—*Euthalia Mindorana*, Staudinger, Lep. List. (1896), p. 32. *Habitat.* Mindora.—*Euthalia Mahadeva* (*Adolias Mahadeva*, Moore, Trans. Ent. Soc. 1859, p. 68, pl. 4, fig. 1, ♂. *Habitat.*—? —*Euthalia Nicévillei* (*Tanaecia Nicévillei*, Distant, Ann. N. H. 1884, p. 199 ; Rhop. Malay. p. 440, pl. 40, fig. 9, ♂. *Habitat.* Malay Peninsula ; Sumatra.

#### Genus LIMBUSA.

MALE.—Wings small, short. *Forewing* subtriangular ; costa arched, apex pointed, exterior margin almost even, posterior margin straight ; first subcostal branch free from the subcostal in both sexes ; first and second subcostals emitted before end of the cell ; the cell closed by a slender lower discocellular veinlet ; middle median veinlet emitted at a short distance before lower end of the cell. *Hindwing* very short, triangular ; exterior margin oblique, convex, slightly uneven ; precostal vein slightly curved ; cell closed by a slender discocellular veinlet. *Body* stout ; eyes naked. Sexes dissimilar.

TYPE.—L. Nara.

#### LIMBUSA NARA (Plate 240, figs. 2, 2a, b, c, ♂ ♀).

*Adolias Nara*, Moore, Trans. Ent. Soc. Lond. 1859, p. 78, pl. 8, fig. 1, ♀. Butler, Proc. Zool. Soc. 1868, p. 602.

*Euthalia Nara*, de Nicéville, Butt. of India, etc., ii. p. 197 (1886) ; Proc. Asiatic Soc. Bengal, 1892, p. 145.

*Adolias Anyte*, Hewitson, Exotic Butt. iii. *Ad.* pl. 2, fig. 5 (1862), ♂. Butler, P. Z. S. 1868, p. 603.

*Euthalia Anyte*, de Nicéville, Butt. of India, etc., ii. p. 198, ♂.

MALE.—Upperside dark bronzy olive-green. Cilia black, alternated with white. Both wings crossed by a broadly diffused blackish discal fascia and a narrower submarginal and a marginal lunulated fascia. *Forewing* also with inwardly-diffused black-lined cell marks, and a ringlet below the cell ; externally bordering the discal fascia is an upper oblique series of four small yellowish-olivaceous blackish-edged incipiently-defined rounded spots, extending and increasing in size from the subcostal to the middle median veinlet, below which the posterior interarea between the two fasciæ is also slightly paler than the ground colour ; two very small incipiently-defined spots also before the apex. *Hindwing* also with the discal fascia externally bordered at its costal end by a broad pale yellow patch extending to the lower subcostal, and from below which in some specimens extend two or three slender yellowish lunules, which latter traverse the length of the blackish fascia ; a similar

but shorter yellowish costal patch also precedes the latter, the extreme costal border also being pale olivescens-yellow; basal black-lined marks slender. Underside olivescens-yellow; basal marks slender but very prominent; transverse fasciæ as above, those on the forewing being most prominent; the upper discal row of rounded spots and posterior intervening space being more defined and paler yellow; on the hindwing the discal fascia is composed of narrow pale yellow lunular spots with diffused blackish borders, the costal patches being absent. *Body* and palpi above dark olive-green, body below and legs pale olivescens-yellow; antennæ dark brown above and tipped with red, beneath reddish.

Female. Upperside darker and of a more golden-bronzy sap-green, the apical area of both wings being blue tinged; the transverse fasciæ blacker; basal marks black-lined. *Forewing* also with a prominent white oblique discal macular band extending from the middle of the costa to near the lower median veinlet, the four upper spots being elongate, the next broadly somewhat cordate, and the last obliquely elongated, narrow, and slightly recurved; the two small subapical spots are distinct and white. *Hindwing* also with a sullied-white upper discal costal spot, and one, or sometimes two, very small wider contiguous spots. Underside. *Forewing* greyish olive-green, the hindwing being of a more greenish-grey colour; basal marks slender. *Forewing* also with the black fasciæ posteriorly diffused and violet-tinted, the white macular band and subapical spots black-edged. *Hindwing* with a discal continuous macular white band composed of six slightly blackish-edged spots, the four upper being quadro-lunate, the two lower ovate.

Expanse, ♂  $2\frac{8}{10}$  to 3, ♀  $3\frac{4}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—Nepal; Sikkim; Naga Hills.

DISTRIBUTION.—We possess males of this species from Nepal, taken by the late General G. Ramsay. "It is very rare in Sikkim, and is probably found only in the heavy forests. It is less rare east of the Tista River, where it occurs in July and September at 6000 feet elevation" (L. de Nicéville, Sikkim Gazetteer, 1894, 143). Also recorded from "Sikkim; Buxa, Bhotan, in July and August; Khasias, 4000 feet, in September; and Naga Hills" (de Nicéville, Proc. As. Soc. Bengal, 1892, 145). In Mr. W. Rothschild's collection are females taken by Mr. Otto Möller in Sikkim, in August, 1888, and in Mr. F. Godman's collection are males taken in the Naga Hills, 8000 to 9000 feet, in July and August, by Mr. W. Doherty.

CHINESE ALLIED SPECIES.—*Limbusa Omeia* (Euthalia Omeia, Leech, Ent. 1891, p. 29, ♂. Grose-Smith and Kirby, Rhop. Exot. Euth. pl. 3, fig. 3 ♂ (1891). *Syn.* Euth. consobrina, Leech, Ent. 1891, Suppl. p. 29. G.-Smith and Kirby, *id.* Euth. pl. 3, fig. 5, 6, ♀. *Habitat.* W. China.—*Limbusa Strephon* (Euthalia Strephon, Grose-Smith, Ann. N. H. 1893, p. 216. Leech, Butt. China, p. 653. *Habitat.* N.W. China. *Limbusa Sinica*. Male. Upperside. Colour similar to male *L. Nara*. *Forewing*

differs in the intervening area between the cell-marks being olivescence-yellow, the upper discal oblique series of four spots and the two subapical spots also yellow, and with a pale yellowish discal patch between the middle and lower medians. *Hindwing* with the basal dark area narrower and uniformly coloured; crossed by a well-defined discal olivescence-yellow band, which is broad anteriorly and decreases macularly to the lower median veinlet. Underside of a more ochreous-olivescence tint; discal and subapical spots on forewing, and discal band on hindwing, as on upperside. Expanse, ♂ 3 inches. *Habitat.* Ta Tong Kiao, China (Coll. P. Crowley and Col. C. Swinhoe).

#### Genus MAHALDIA.

IMAGO.—Male. Wings large, short, broad. *Forewing* very broad, subtriangular; costa much arched, apex obtuse, exterior margin slightly scalloped; first subcostal branch free in both sexes; first and second subcostals emitted before end of cell; discocellulars curved, middle discocellular concave; cell closed; middle median veinlet emitted from immediately before lower end of the cell. *Hindwing* very broad, somewhat quadrate; apex truncate, exterior margin scalloped and produced at end of the upper median veinlet; cell closed. Eyes naked. Sexes dissimilar.

TYPE.—M. Sahadeva.

#### MAHALDIA SAHADEVA (Plate 241, figs. 1, 1a, b, c; 242, figs. 1, 1a, b, ♂ ♀).

*Adolias Sahadeva*, Moore, Trans. Ent. Soc. Lond. 1859, p. 80, pl. 8, fig. 3, ♂.

*Euthalia Sahadeva*, de Nicéville, Butt. of India, etc., ii. p. 199 (1886); Proc. Asiatic Soc. Bengal, 1892, p. 145, ♂ ♀.

MALE. Upperside dark olive or sap-green, with a somewhat bronzy gloss; cilia alternated with white; basal black-lined marks distinct and broad; crossed by a blackish diffused discal and submarginal and a narrower marginal sinuous fascia, the anterior interspace between the two former being defined by pale yellowish lunules on the forewing and broader lunules on the hindwing. *Forewing* also with an oblique transverse pale dull olivescence-yellow macular band composed of five spots and a slight costal streak, extending from the costa to the lower median veinlet, the lowest spot being somewhat obliquely-elongated and less defined posteriorly, below which is a much less defined pale lunate patch, which latter is sometimes accompanied by either a single very small or a duplex obsolescent slender pale spot; before the apex are two small white costal obliquely-superposed spots, the upper one minute; the interspaces between the basal and middle cell marks and between the latter and the discocellular mark being much paler olivescence-green. *Hindwing* also with a transverse medial discal pale olivescence-yellow macular band composed of six decreasing irregularly-rounded spots. Underside greenish-ochreous; cell marks distinct; crossed by a broad discal and a submarginal diffused sinuous



dark dusky olive-green fascia and a narrower less-defined marginal fascia; the transverse macular band, as on upperside, less prominent but of a pale olivescient-yellow, the subapical spots being white; the discal and submarginal fascia on the forewing more or less blackish speckled posteriorly, and in some specimens the submarginal fascia on the hindwing is marked by a small blackish point between the veins. *Body* and palpi above dark olive-green, below and legs pale olivescient-yellow; antennæ black, tipped with ochreous-red.

Female. Upperside somewhat darker than the male, with similar transverse blackish diffused fasciæ. *Forewing* with the oblique discal band composed of prominent olivescient-white spots, and the costal streak ochreous-white; subapical white spots prominent, sometimes with a minute intervening spot. *Hindwing* with two upper discal olivescient-white spots of either an irregular reversely-lunate or oval shape, and with generally a third or lower minute spot, their outer adjacent interspaces between the discal and submarginal fasciæ being sullied olivescient-white or bluish-white speckled, forming broad lunate patches. Underside deeper greenish-ochreous than in male; transverse fasciæ much less apparent, especially on the hindwing; basal marks more slender. *Forewing* with oblique discal macular band and subapical spots bluish-white. *Hindwing* with a discal series of either five or six bluish-white irregular-shaped transversely narrowed spots.

Expanse, ♂  $3\frac{4}{10}$  to  $3\frac{6}{10}$ , ♀  $3\frac{8}{10}$  to  $4\frac{4}{10}$  inches.

HABITAT.—Nepal; Sikkim; Bhotan; Khasia and Naga Hills.

REMARKS.—In some specimens from the Khasia Hills (Plate 242, fig. 1, 1a, b) the upperside of both sexes is very dark sap-green, the macular band in the male being olivescient-white, and in the female bluish-white. In the female also, the upper discal bluish-white spots are small or obsolescent. On the underside, the ground-colour in both sexes is also darker and more greenish, and the macular band bluish-white.

DISTRIBUTION.—We possess specimens of both sexes taken in Nepal by the late General G. Ramsay, and a male from Buxa, Bhotan, taken by Mr. G. C. Dudgeon, as well as others without definite locality from the collection of the late A. Grote and Major J. L. Sherwill. Mr. de Nicéville states (Sikkim Gazetteer, 1894, 143) that "it is very rare in Sikkim, where it is found in August and September, but seems to be more common to the East, in Bhotan and the Khasia Hills." Specimens from Shillong and the Naga Hills are in Mr. P. Crowley's collection; Col. C. Swinhoe has received it from Shillong and the Khasia Hills.

**MAHALDIA NARAYANA** (Plate 242, figs. 2, 2a, ♀).

*Euthalia Narayana*, Grose-Smith and Kirby, Rhop. Exot. p. 6, *Euth.* pl. 2, figs. 4, 5, ♀ (1891).

FEMALE.—Smaller than *M. Sahadeva*. Upperside paler sap-green than in

Khasia females. *Forewing* with the transverse olivescence-white macular band composed of about one-third smaller sized spots; the lower subapical spot being comparatively larger. *Hindwing* with two prominent well-defined olivescence-white upper discal lunate spots. Underside dark olivescence-grey. *Forewing* with olivescence-white macular band, and subapical spots, as above. *Hindwing* with the transverse series of five bluish-white decreasing spots transversely narrow.

Expanse, ♀  $2\frac{2}{10}$  inches.

HABITAT.—Burma.

DISTRIBUTION.—The type specimen was taken at the Ruby Mines, Upper Burma. It is in the collection of Mr. H. Grose-Smith, and is the only one we know.

**MAHALDIA IVA** (Plate 243, figs. 1, 1a, ♀).

*Adolias Iva*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 195 (1857); Trans. Ent. Soc. Lond. 1859, p. 78, pl. 8, fig. 2, ♂.

*Euthalia Iva*, de Nicéville, Butt. of India, etc., ii. p. 197 (1886); Journ. Asiatic Soc. Bengal, 1894, p. 10.

MALE.—Upperside very dark sap-green; cilia alternated with white; basal black-lined marks distinct. Both wings with a transverse very obscurely-defined discal and submarginal blackish diffused lunular fascia, the discal being the least apparent. *Forewing* also crossed by an oblique medial broad macular olivescence-white band, composed of elongated narrow spots, the lowest being constricted in its middle and prolonged to near end of lower median veinlet, below which is a white-speckled patch at the angle; two very small slender white spots also present beneath the lower median veinlet placed upon the discal fascia, and two oblique oval spots before the apex. *Hindwing* with an upper discal curved series of four small olivescence-white rounded spots. Underside deep greyish-green, more olivescence-green externally; basal black-lined markings prominent; submarginal lunular fascia black-speckled, distinct. *Forewing* with the oblique medial macular olivescence-white band and two lower small spots and the subapical spots narrowly black bordered. *Hindwing* with an upper discal curved series of either five or six small olivescence-white spots bordered by black speckles. *Body* and palpi above dark sap-green, beneath and legs pale olivescence-yellow; antennæ dark brown tip with red.

Female. Upperside as in the male, except that on the forewing the two small slender white spots below the lower median veinlet are sometimes absent. Underside as in the male.

Expanse, ♂  $4\frac{2}{10}$ , ♀  $4\frac{8}{10}$  inches.

HABITAT.—Sikkim; Manipur.

DISTRIBUTION.—“Of this very rare species no specimen has of late years been obtained in Sikkim, except a single example in Mr. G. C. Dudgeon's collection

from Daling at 6000 feet elevation, taken in August. I have lately obtained a pair, by purchase, from Manipur" (de Nicéville, Sikkim Gazetteer, 1894, p. 142). A specimen of the female is in the Hewitsonian collection, and another in that of Mr. H. Grose-Smith.

CHINESE ALLIED SPECIES.—*Mahaldia Pyrrha* (Euthalia Sahadeva, Leech, Butt. of China, Japan, etc., p. 136, pl. 21, fig. 2, ♂. Euth. Pyrrha, Leech, *id.* p. 137, pl. 21, fig. 4 (1892), ♀. *Habitat.* Moupin; W. and C. China.—*Mahaldia Confucius* (Adolias Confucius, Westw. Gen. D. Lep. p. 291, ♀ (1850). Moore, Tr. Ent. Soc. 1859, p. 79. Euthalia Confucius, Grose-Smith, Rhop. Exot. *Euth.* pl. 3, figs. 1, 2 (1891). Leech, Butt. China, etc., p. 135, pl. 21, fig. 6. *Habitat.* China.—*Mahaldia Kardama* (Adolias Kardama, Moore, Tr. Ent. Soc. 1859, p. 80, pl. 9, fig. 3, ♂ ♀). Euthalia Kardama, Grose-Smith, Rhop. Exot. *Euth.* pl. 2, figs. 1-3 (1891). Leech, Butt. of China, etc., p. 136 (1892). *Syn.* Euth. Armandiana, Poujade, Bull. Soc. Ent. Fr. 1886, p. 216. *Habitat.* W. China.

Genus ZALAPIA.

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

Wings large, broad. *Forewing* rather elongate, subtriangular; costa slightly arched, apex obtusely pointed, exterior margin almost even; first subcostal branch anastomosed to the costal near its end in both sexes; first subcostal emitted at two-fifths before end of the cell, second close to the end, third at one-third beyond the cell; the discocellulars concave, the two upper short, lower slender, but distinct and tubular, closing the cell; middle median veinlet emitted from immediately before lower end of the cell. *Hindwing* broad, somewhat quadrate; exterior margin very convex, apex rounded, exterior margin somewhat produced at the upper median, slightly uneven; cell closed by a very slender lower discocellular; the two upper median veinlets emitted from lower end of the cell; precostal spur simple, curved outward. *Body* robust; palpi very compactly clothed; antennæ with a long slender club. Eyes naked. Sexes alike.

TYPE.—*Z. Patala*.

ZALAPIA PATALA (Plate 244, figs. 1, 1a, b, c, ♂ ♀).

*Adolias Patala*, Kollar, Hügel's Kaschmir, iv. 2, p. 435 (1844).

*Euthalia Patala*, Moore, Proc. Zool. Soc. 1832, p. 239. de Nicéville, Butt. of India, etc., ii. p. 196 (1886).

*Adolias Doubledayi*, Gray, Lep. Ins. Nepal, p. 13, pl. 13 (1846). Doubleday and Hewitson, Gen. D. Lep. p. 291.

*Adolias Epiona* (Gray), Moore, Tr. Ent. Soc. 1859, p. 79. Butler, P. Z. S. 1868, p. 602.

MALE.—Upperside dark olive-green; cilia alternated with white; basal black-lined marks slender, not prominent. *Forewing* with a transverse discal and a sub-marginal very obscurely-defined blackish-green diffused narrow lunulated fascia,



and crossed by a prominent medial oblique pale olivaceous-yellow macular band, which extends from the costa to lower median veinlet opposite the posterior angle, the lowest spot being narrowest and of an irregular prolonged lunate form; a minute pale yellow spot sometimes also present beneath the lower median vein close to the discal fascia; two small pale yellow costal spots before the apex. *Hindwing* with a similar blackish-green transverse discal and submarginal diffused lunulated fascia, the former with two irregular-shaped pale olivescence-yellow subcostal spots, the lower one generally externally excavated or posteriorly narrow and constricted, sometimes a third very small lower spot is also present; abdominal margin olivescence-grey. Underside much paler, olivescence-yellowish-green; basal marks very slender; transverse discal and submarginal darker fasciæ as in upperside. *Forewing* also with the oblique medial macular olivescence-white band and subapical spots; sometimes also with two very small whitish spots beneath the lower median. *Hindwing* also with two, or three, additional very small lower discal olivescence-white spots. *Body* and palpi above dark olive-brown, beneath and legs very pale olivescence-yellow; antennæ blackish above, reddish beneath.

Female. Upperside somewhat of a darker tint than the male, the pale olivescence-yellow spots more prominent. Underside as in the male.

Expanse, ♂  $3\frac{6}{10}$  to 4, ♀ 4 to  $4\frac{4}{10}$  inches.

HABITAT.—Himalayas; Chumba to Nepal.

DISTRIBUTION AND HABITS.—“Frequents oak forests at altitudes of 6000 to 8000 feet in the Western Himalayas; taken at Panideo, Nuchar, and Kotghur during the rainy season, July and August. It flies very swiftly over the tops of the trees with a skimming flight like a swallow. Two or three may be seen chasing one another in and out of the shade among the branches of the trees. They pitch abruptly, often with expanded wings, basking in the sunlight until some passing insect, another *Adolias* or a *Neptis* floating near, tempts the quarrelsome species to dash off, buffet the passer-by, and after a rapid skim, pitch once more, suddenly, near its former resting-place, and bask again. It soon gets battered, and as they fly and pitch about the high tree-tops it is difficult to capture” (Capt. A. M. Lang, Ent. Mo. Mag. 1864, p. 181). “Local in the N.W. Himalaya. Very swift in flight. Frequents woods” (Capt. Bayne Reed’s Notes). “Flies about oaks from June to September” (Rev. J. Hocking, P. Z. S. 1882, 239). Specimens from Simla, Dharmasala, Almora, and Naini Tal were in the late Mr. W. S. Atkinson’s collection (MS. List). Mr. W. Doherty (J. A. S. Bengal, 1886, 124) records it from “Naini Tal, Ranibagh, etc., 2000 to 7000 feet elevation. Found chiefly during the rains.” We possess specimens taken by the late General G. Ramsay in Nepal. Mr. de Nicéville records having “taken it commonly in Simla at about 5000 feet. It is very partial to over-ripe peaches, plums, etc. Major C. H. T. Marshall has

taken it in Chumba. In Kumaon it is abundant near Naini Tal in the middle of the rains, and Dr. Scully has sent numerous specimens from Nepal" (Butt. Ind. ii. 196).

**ZALAPIA TAOOANA** (Plate 243, fig. 2, 2a, ♂).

*Adolias Taooana*, Moore, Proc. Zool. Soc. Lond. 1878, p. 831.

*Euthalia Taooana*, de Nicéville, Butt. of India, etc., ii. p. 197 (1886). Elwes, P. Z. S. 1891, p. 278.

MALE.—Upperside. Darker olive-green than in *P. Patala*; basal black-lined marks very prominent. Discal transverse blackish fascia not apparent, the sub-marginal blackish lunular fascia narrower and less diffused but more defined. *Forewing* with the oblique discal macular band broader and of a clear yellow colour, composed of more elongated portions, the penultimate being quite oval, the lowest short and more conical, the two small narrow spots beneath the lower median are either prominent, or one, or both, are sometimes absent, and all have black-speckled borders; before the apex are two small oval yellow spots. *Hindwing* with either two, or three, upper discal yellow spots, the lowest or third, when present, being small; following these are two lower small black-speckled ring-spots; abdominal margin pale olivescens-grey. Underside dark olivescens-grey, paler externally; markings as above, very prominent. *Hindwing* with the discal pale yellow spots extending to the lower median veinlet.

Female. Unknown.

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

HABITAT.—Tenasserim; Malay Peninsula.

DISTRIBUTION.—The type specimen, a male, was taken by Mr. Otto Limborg at "Taoo, 3000 to 5000 feet, Upper Tenasserim" (P. Z. S. 1878, 831). It is also recorded from Tavoy (J. A. S. Bengal 1887, 426). A male, from E. Pegu, is in the collection of Mr. P. Crowley and of Mr. F. Godman, taken by Mr. W. Doherty in March and April 1890. Mr. H. J. Elwes (P. Z. S. 1891, 278) records it from the "Karen Hills taken by Mr. Doherty at 4000 to 5000 feet—where it seemed abundant, but only males were received." A male specimen labelled "Perak" is in Mr. W. Rothschild's collection.

CHINESE SPECIES.—*Zalapia Pratti* (*Euthalia Pratti*, Leech, Entom. 1891, Suppl. p. 4; Butt. of China, etc. p. 138, pl. 21, fig. 5 (1892).

HABITAT.—W. China.

**Genus CHUCAPA.**

*Chucapa*, Moore, Lep. Indica, iii. p. 49 (1896-7).

MALE.—Wings short, broad. *Forewing* subtriangular; costa well arched, apex obtuse, exterior margin uneven; first subcostal branch free from the costal in both

sexes; first and second subcostals emitted before end of the cell, third at about one-eighth beyond the cell; upper discocellulars bent inward, straight; cell open. *Hindwing* very short, triangular; exterior margin very oblique, slightly convex, scalloped, anal angle somewhat produced; precostal spur bent outward at the middle; cell open.

BODY stout. Palpi rather short, apical joint short, stout, obtusely pointed. Eyes naked. Sexes alike.

TYPE.—C. Franciæ.

**CHUCAPA FRANCIÆ** (Plate 245, fig. 1, 1a, b, c, d, ♂ ♀).

*Adolias Franciæ*, Gray, Lep. Ins. of Nepal, p. 12, pl. 14 (1846). Moore, Trans. Ent. Soc. 1859, p. 81.

*Euthalia Franciæ*, de Nicéville, Butt. of India, etc., ii. p. 202 (1886).

*Adolias Raja*, Felder, Wien. Ent. Monats. (1859), p. 397, pl. 9, fig. 2, ♀.

MALE AND FEMALE.—Upperside deep yellowish-bronzy sap-green, or, in some specimens, of a darker bluish-green tint, the outer borders being blackish-green; cilia alternated with white. *Forewing* with black-lined cell marks; a prominent transverse medial discal pale yellow macular band, of which the three upper spots are disposed obliquely outward beyond the cell, and the others slightly deflexed inward from the upper median, beyond are two obliquely superposed subapical spots—the upper one broadly lunate, the lower rounded, and below which is an incipient row of very slender-slightly defined pale lunules; beyond these is a submarginal row of small pale yellow lunulate spots. *Hindwing* with a transverse medial-discal pale yellow decreasing band, which is externally bordered with paler green than the basal ground colour, followed by an outer discal series of incipient dusky broad diffused lunules and then by a submarginal row of blackish similar lunate spots, which latter are bordered externally by a decreasing series of pale greenish-yellow lunular spots. Underside glossy, silvery, bluish-grey or greenish-grey; basal black-lined marks on both wings slender and distinct; the transverse discal band, subapical spots, inner and outer submarginal pale lunular bands, as on upperside, being white, but all wider, externally, than those above, the additional wider portion being washed with pale purple. *Forewing* also with two or three intervening submarginal slender black points, and a large diffused posterior patch below the median veinlet. *Hindwing* also with an intervening submarginal row of small black points. *Body* and palpi above dark bronzy sap-green, beneath and legs greyish-white; antennæ black, tipt with red beneath.

Expanse, ♂ 3 to  $3\frac{8}{10}$ , ♀  $4\frac{3}{10}$  to  $4\frac{4}{10}$  inches.

HABITAT.—Nepal; Sikkim; Bhotan; Assam; Upper Burma.

REMARKS.—Nepalese specimens, Plate 245, fig. 1, 1a, are of a paler green tint,



and the transverse yellow macular band also somewhat broader than in specimens from Sikkim and Bhotan. Specimens from the Khasia Hills are the darkest of all, and vary in the width of the yellow macular band.

DISTRIBUTION.—“This is not a common species; it occurs from Nepal to Upper Assam, and Burma” (de Nicéville, Butt. Ind. ii. 202). We possess specimens of both sexes taken in Nepal by the late General G. Ramsay. It has been taken in Sikkim and Bhotan by Mr. G. C. Dudgeon, and Dr. J. Anderson took it in Upper Burma during the Yunan Expedition. Mr. H. J. Elwes (Tr. Ent. Soc. 1888, 359) says it is “a rare species in recent years in Sikkim. I have taken it near Cherra Punji, in the Khasias, in September, and find that the Khasia specimens can be distinguished from Sikkim ones by their narrower bands.” Mr. de Nicéville (Sikkim Gazetteer, 1894, 143) says it is “common in Sikkim and Bhotan at 5000 feet elevation. It is found also in Nepal, the Naga, Khasia, Chin Lushai, and Karen Hills. It probably flies about midsummer in the heavy forest zone in Sikkim.” Col. C. Swinhoe (Tr. Ent. Soc. 1893, 285) says it is “common in the Khasias.” Mr. W. Doherty obtained it at Bernardmyo, Upper Burma, from 5000 to 7000 feet in March, 1890, and in E. Pegu, 4000 to 5000 feet in March and April.

CHINESE ALLIED SPECIES.—*Chucapa Hebe* (Euthalia Hebe, Leech, Entom. 1891, Suppl. p. 4; Butt. of China, etc., p. 139, pl. 21, fig. 7). *Habitat*.—W. China.

Genus LABRANGA.

*Labranga*, Moore, Lep. Indica, iii. p. 49 (1896-7).

MALE.—Wings large, broad, short. *Forewing* subtriangular, apex obtusely rounded, exterior margin scalloped; first subcostal branch anastomosed to the costal in both sexes; first and second subcostal branches emitted before end of the cell; discocellulars deeply concave; cell closed; the two upper median veinlets emitted from lower end of the cell. *Hindwing* very broad; exterior margin very convex, deeply scalloped; cell closed; the two upper median veinlets emitted from end of cell. Body robust. Eyes naked. Sexes alike.

TYPE.—L. Durga.

LABRANGA DURGA (Plate 246, fig. 1, 1a, b, ♂ ♀).

*Adolias Durga*, Moore, Catal. Lep. Mus. E. Ind. Compy. i. p. 196 (1857); Trans. Ent. Soc. Lond. 1859, p. 80, pl. 9, fig. 2. Butler, P.Z.S. 1868, p. 602.

*Euthalia Durga*, de Nicéville, Butt. of India, etc., ii. p. 199 (1886).

MALE AND FEMALE.—Upperside very dark bronzy olive-green; with an obscurely defined broadly-diffused black lunulated submarginal fascia and a narrow marginal fascia; basal black-lined marks slender; cilia alternately black and white. *Forewing* crossed by a broad white medial discal band extending from the costa to

posterior margin, the band composed of irregular-shaped spots, outwardly diffused by a black line—of which the posterior spots are also externally bordered by smalt-blue scales; before the apex are two very small oval superposed white spots. *Hindwing* crossed by a similar broad white band ending decreasingly in a narrow bar at the lower median veinlet, the entire band being prominently and diffusely bordered externally to the anal angle by smalt-blue, followed by an intermarginal row of slender smalt-blue lunules; base of abdominal margin bluish-grey. Underside. Basal area greenish-grey, outer area pale olive-green; basal black-lined marks very prominent, transverse white band and subapical, spots as above, narrowly edged with dark olive-green; submarginal lunular fascia on forewing narrow, blackish, and bordered posteriorly by a cluster of pale blue scales; submarginal fascia on hindwing ill-defined and diffused. Body and palpi above dark bronzy olive-green, below and legs pale olivescient-grey; antennæ above brown, below reddish.

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

HABITAT.—Sikkim; Bhotan.

VARIETY.—We possess a male from Sikkim, taken by Mr. G. C. Dudgeon, which, on the upperside of the forewing, has the interspace between the middle and end cell-marks pale bluish-white speckled, thus forming a distinct pale transverse bar, and on the hindwing there is a pale bluish-white speckled fascia extending before the white discal band broadly from the costa and vanishing posteriorly to the lower median veinlet in clusters of bluish-green scales.

DISTRIBUTION.—“This species used to be fairly common in Sikkim, but owing to the great destruction of the forests for the cultivation of tea, it has become in recent years very scarce. Mr. Otto Möller obtained it from June to August at from 3000 to 5000 feet elevation. It is still fairly common in Bhotan” (de Nicéville, Sikkim Gazetteer, 1894, 143).

#### LABRANGA DUDA (Plate 247, fig. 1, 1a, b, ♂ ♀).

*Euthalia Duda*, Staudinger, Exot. Schmett. p. 152, pl. 53 (1886). de Nicéville, Proc. Zool. Soc. 1887, p. 455. Elwes, Trans. Ent. Soc. 1888, p. 358.

MALE.—Upperside very dark bronzy sap-green; basal black-lined marks indistinct. *Forewing* crossed by an obscure broad diffused black inner discal, a submarginal, and a narrow marginal fascia; a slightly oblique medial discal narrow white macular band extending from the costa to posterior margin, the portion from the lower median being sometimes of a smaller size, less defined and sullied with greenish-white speckles; two small white spots also before the apex. *Hindwing* crossed by an inwardly-oblique, regularly decreasing nearly even-edged discal white band, which is externally bordered by smalt-blue ending posteriorly in olive-green scales, beyond

which is a broad black outer marginal fascia traversed by a slightly-defined narrow olive-green lunular line. Underside pale olivescient-green; basal marks distinct; transverse white band and subapical spots, as on upperside; discal and submarginal blackish fascia on the forewing slender and obscure anteriorly but broad and black posteriorly; submarginal fascia on the hindwing obsolete.

Female.—Upper and underside as in the male.

Expanse, ♂  $3\frac{6}{10}$  to  $3\frac{8}{10}$ , ♀ 4 inches.

HABITAT.—Sikkim; Bhotan; Assam.

DISTRIBUTION.—Described by Dr. Staudinger from two males labelled “Darjiling,” from the late Mr. W. S. Atkinson’s Collection. Mr. A. V. Knyvett’s native collectors also obtained it near Buxa, in Bhotan. Colonel C. Swinhoe possesses specimens of both sexes from Cherra Punji, taken by Mr. Hamilton’s native collectors. “Probably the rarest species of the group occurring in Sikkim. I possess a single pair only, the female from Bhotan, the male from the Khasia Hills. Mr. Elwes also possesses two males, and Mr. Dudgeon one male, all from Sikkim” (de Nicéville, Sikkim Gazetteer, 1894, p. 143). Mr. Walter Rothschild possesses specimens from Mr. Otto Möller’s Collection, taken in Sikkim in July and August, and in Bhotan in August.

CHINESE SPECIES.—*Labranga Tibetana* (Euthalia Thibetana, Poujade, Ann. Ent. Fr. 1885, p. 215), Syn. *Euthalia Staudingeri*, Leech, Entom. 1891, Suppl. p. 4, Butt. of China, etc., p. 138, pl. 21, fig. 8 (1893). *Habitat*.—Moupin; W. China. *Labranga Khama*, Alpheraky, Iris, 1895, p. 181. *Habitat*.—W. China.

#### Group IV. LIMENITINA.

*Najades*, Hübner, Tent. Lep. p. 1 (1806).

*Nymphalides* (part), Boisduval, Ind. Méth. ii. p. 16 (1840). Kirby, Eur. Butt. p. 41 (1862).

*Nymphalidæ* (part), Duponchel, Catal. Méth. Lep. Eur. p. 8 (1844). Blanchard, Hist. Nat. des Ins. ii. p. 332 (1845). Lang, Rhop. Eur. p. 159 (1884). Doherty, J. A. Soc. Bengal, 1886, p. 110.

*Nymphalidi* (part), Stephens Catal. Brit. Lep. B.M. p. 10 (1850). Stainton, Manual Brit. Lep. p. 21 (1857). Scudder, Butt. U.S. i. p. 249 (1889).

*Nymphalina* (part), Herr. Schäffer, Prod. Syst. Lep. p. 17 (1864). Distant, Rhop. Malayana, p. 83 (1882).

*Nymphalidæ*, Guénee, Faunæ E. et L. Lep. p. 23 (1867).

*Nepitidæ*, Newman, Brit. Butt. p. 67 (1871).

*Limenitides*, Butler, Catal. Fabr. Lep. B.M. p. 57 (1869).

*Limenitina*, Moore, Lep. Indica, ii. p. 225 (1895).

#### CHARACTERS OF THE GROUP LIMENITINA.

IMAGO.—Moderately robust, generally. *Forewings* either short and more or less triangular, or elongate and narrow; apex obtuse or rounded; exterior margin



in some more or less slightly scalloped. *Hindwings* short, generally broad and triangularly-ovate, in some obovate; exterior margin more or less slightly scalloped.

CATERPILLAR.—Head cleft, or serrate, on vertex; body either unequally humped dorsally, or more or less cylindrical; armed with two subdorsal more or less incomplete series of mostly short, irregular-shaped fleshy branched-spines.

CHRYsalis.—Somewhat elongate, or short; with projecting wing-cases, broad rounded elevated antero-dorsal prominence, arched thorax, and projected bifid head-piece.

EGG.—“Very large; few; soft; not so high as wide, strongly reticulate, with elevated translucent lines crossing the surface asymmetrically, enclosing pentagonal spaces, and bearing long, acute, often bifid spines at their intersection.” (Doherty.)

SEASONAL DIMORPHISM.—This is known to occur in the species of our Limenitid genera *Auzakia* and *Lebadea*, also in the Athymid genera *Tacoræa*, *Condochates*, *Pantoporia*, and *Kironga*, and in the Neptid genera *Andrapana*, *Neptis*, *Bimbisara*, *Stabrobates*, *Rahinda*, and *Lasippa*. In the typical species of the two latter genera, in addition to the ordinary seasonal differences, the male of the *dry-season* form has the usual *unglossed patch of scales* on the upperside of the hindwing restricted to the basal interspaces of the subcostals, being thus conspicuously *isolated within the middle area* of the broad glossy costal border, whereas, in the male of the *wet-season* form this unglossed patch pervades the interspace below the subcostal.

CHARACTERISTICS OF MALES IN CERTAIN GENERA.—In the various species of our Athymid genera we have found *Androconia*, or *scent-scales* in a very limited number, only, to be present in the males of *Tatisia Kanwa*, *Tharusia Jina*, *Chendrana Pravira*, *Athyma Perius*, *Condochates opalina*, in all the species of *Pantoporia* (*Nefte*, *Cama*, etc.), *Sabania speciosa*, *Kironga Ranga* and *K. Abiasa*; Dr. Haase (*Iris*, 1883, 305) records them as being present also in *Balanga Kasa*. These scent-scales are found interspersed between the ordinary scales chiefly upon the basal area between the median and submedian vein on the upperside of the forewing; they are extremely minute, elongated, broadest and rounded anteriorly and finely ciliated in front, the base on each side angled hindward into a fine projecting pointed-hook longer than the basal shaft. These peculiar scent-scales were, however, not found to be present in the allied Athymids *Parathyma Sulpitia*, *Tacoræa Asura*, and *Tacola Larymna*, neither were they found in the species of our Limenitid genera, which were carefully examined for this purpose.

In the males of our various genera of Neptids, the *underside of the forewing* has a more or less broad glossy posterior border, which in some, i.e. *Phædyma*, *Rahinda*, *Lasippa*, etc., encompasses an elongated patch of dark-coloured (? scent) scales; and on the *upperside of the hindwing* an ordinary more or less broad brilliantly-glossed costal border, and in *Phædyma* (*Heliodora*, Cram.), also a conspicuous less-

glossed area or patch—extending below the costal vein to the radial veinlet, from the upper base of the cell to below the apex of the wing. A similar broad but less unglossed patch is present in *Andrapana* (Columella, Cram.), or entirely unglossed in *Ard. Jumba*. In *Kalkasia* (Alwina), and several other genera—*Neptis* (Aceris; Varma, etc.), *Bimbisara* (Sankara), *Stabrobates* (Radha; Viraja) this unglossed patch on the hindwing is confined to the medial area below the costal vein. *Stab. Viraja*, in the *dry-season* form, has also a conspicuous tuft of laxly-exserted lengthened clavate black (? scent) scales on the underside of the abdomen, disposed laterally along its middle segments. This tuft was not observable in males of *wet-season* *Viraja* which we have examined. In *Paraneptis* (Lucilla) the unglossed patch on the hindwing is restricted to the basal interspaces between the costal vein and lower subcostal. In *Bimbisara Anjana* the glossy grey of the costal border extends medially to below the first subcostal veinlet, and encloses an oval pale ochreous-yellow unglossed patch of scales between base of costal vein and first subcostal. In *Acca* (Venilia, Linn.), in addition to the short unglossed area on the hindwing, there is an elongated fusiform patch of raised (? scent) scales extending along the anteriorly-dilated edge of the middle of the costal vein. In *Rahinda* (Hordonia) and *Lasippa* (Heliodore, Fab.) the glossy grey costal border extends to below the second subcostal in the *dry-season* form, and isolates a conspicuous unglossed elongated (? scent) patch of brown scales between the bases of subcostals; this patch, in the *wet-season* form, pervading the interspace below the second subcostal veinlet. In *Rahinda aurelia*, the broad costal area extending to below base of subcostals is very conspicuously glossy satiny-white throughout its entire area. In *Bisappa* (Neriphus, Hewits.) an isolated dull brown patch of scales, between the bases of the subcostals, is conspicuously apparent on the medially disposed glossed area.

SEXUAL DIMORPHISM, and MIMICRY of species WITHIN THE GROUP.—In most of the genera of this group the sexes of the various species are similar in both colouring and markings, but, in the Athymid genus *Pantoporia*, the sexes of all its species are dissimilar, the males having white markings, the females being mostly differently marked, and the markings of a different colour, and in this respect closely resembling certain species of other genera within the group, as follows:—

In *Pantoporia Cama* and *P. Inara*, the females have ochreous-red markings—mimicking probably the red-banded Neptid, *Stabrobates Viraja* and its allies, whereas, in the closely allied *Pant. Selenophora*, the female is also entirely dissimilar from its male, but has white markings on the upperside, disposed exactly as in both sexes of the allied Athymid genus *Condochates*—being an excellent mimic of *C. opalina*, even to the white band on the abdomen, this band not being present in the male of *P. Selenophora*. In the allied *Pantoporia Zeroca* (the male of which on the upperside is extremely like the male of *Pant. Selenophora*), the female, on both the upper



and underside, closely resembles certain species of the Neptid genus *Bimbisara*, namely *B. Nashona*, *Quilta*, etc. In *Pantoporia Kresna*, the female (*subrata*) has the coloration and markings similar to *Bimbisara Anjana* and *B. Omeroda*, being probably a mimic of those species. The female of the Andamanese *Pantoporia rufula* is also an excellent mimic of *Bimbisara Nar*. Mr. de Nicéville says, "*Athyma Perius* is doubtless a good mimic of the common species of *Neptis* (? *leucothoe*), together with which it is always found, and from which it is not easily differentiated on the wing, but, if pursued, it at once assumes its stronger and bolder proper *Athyma*-like flight."

The Japanese *Parathyma Pryeri* is probably a mimic of *Paraneptis Pryeri*, and the European *Limenitis Drusilla* a mimic of *Paraneptis Lucilla*. The Philippine Athymid, *Balanga Kasa*, in both sexes, mimics the Neptid *Palanda Illigera*, and the Athymid *Balanga Epimethes* the Neptid *Pandasana Ebusa*.

MIMICKED BY SPECIES IN OTHER GROUPS.—The Athymid *Condochates opalina*, in addition to being mimicked by the female of the allied Athymid *Pantoporia Selenophora*, is also excellently mimicked by the Apaturine butterfly, *Mimathyma Chevana*.

The red-banded female of the Javan Athymid *Pantoporia Nefte*, is mimicked by the red-banded sexes of the Nymphaline butterfly, *Symbrenthia Hippocla*, and the white-banded male of *Nefte*, also, is, apparently, mimicked by the white-banded (dimorphic) female of the same Javan species of *Symbrenthia*. The Neptid, *Rahinda Hordonia*, is also apparently mimicked by the common Nymphaline *Symbrenthia Hypselis*, both of which have similar shaped red bands on their upperside.

MIMICS OF SPECIES IN OTHER GROUPS.—In two Chinese Limenitids, namely *Hypolimnesthes albomaculata* and *Pseudohypolimnas punctata*, the males, of both species, are excellent mimics—in colour and markings—of the common Nymphaline butterfly, *Hypolimnas Misippus* (a protected genus), the female of *albomaculata*, also being, both on the upper and underside, somewhat similar to the underside of the male of the same species of *Hypolimnas*. In the Malayan Neptid, *Hamadryodes lactaria*, we have an excellent mimic of the Euplœine genus *Hamadryas*, and in the Neptid, *Andasenodes mimetica*, a mimic of the Euplœine butterflies, *Andasena Orope*, and of an unnamed species of *Doricha*, the allied *Andasenodes Eblis* also being a mimic of, probably, a species of *Calliplœa*. The N. American Limenitid, *Basilarcha Archippus*, may also be cited here—both sexes of which mimic the common Euplœine butterfly, *Anosia* (? *plexippus*),

HABITS OF IMAGO.—Mr. L. de Nicéville states that the butterflies of the genus *Lebadea* "have a weak flight, always settling with outspread wings, usually on a leaf," and of those placed by him under the genus *Limenitis*, that "they are very



beautiful insects on the wing, being almost always found in forests or amongst trees, having a particularly graceful sailing flight, and settles on leaves with fully expanded wings." Of the species placed by him under the genus *Athyma*, he observes, "all the species known to me in nature are strong on the wing, but frequently settle, often on the ground with wide-spread open wings, or on leaves of trees and bushes. They are forest-loving insects, occurring only where there is a rich vegetation; and of those placed by him under *Neptis*, he says, "The species are easily captured; they have a floating, sailing flight, frequently settling on bushes, with spread open wings" (Butt. Ind. ii. pp. 76—166). Mr. J. Betham observes, under *Neptis* (*Hordonia*, &c.), "The flight of the butterflies of this genus is peculiar; they seem to float and sail along, so that when on a level with the eye they disappear and re-appear; when settled on leaves, as is their habit, they rest with extended wings" (J. Bombay, N. H. S. 1890, 280). Mr. W. Doherty says, "I have noticed enough facts to be confident that timidity is a source of protection. In the Eastern Ghâts, S. India, where *Neptis Nandina* [?] is rare, I could always tell it from *N. Varmona* a hundred yards off, because it flew away; but then *Varmona* is, like *Hordonia*, a protected species" (P. Z. S. 1891, 256). Mr. de Nicéville observes, that "of the Nymphalinæ, the species of the genus *Neptis* are earliest on the wing, and do not appear at all to mind the leaves being wetted with rain or dew. After a shower they will appear immediately, and even fly when there is no sun. Wherever there are a few trees or bushes along the roads, in gardens, and in fact practically everywhere, they may be found, weakly sailing about and frequently settling; apparently highly protected, as they show no fear whatever" (Journ. As. Soc. Bengal, 1895, 411).

HABITS OF LARVA.—The larva of the European *L. Sibylla* is stated to be solitary in habit, feeding principally on *Caprifoliaceæ* or allied plants, constructing for itself a hibernaculum or nest from a rolled-up leaf, to which, generally, when about half grown, it retires for the winter. The larva of *Moduza Procris* "feeds on *Mussoenda frondosa*, and when young remains on one leaf, eating it regularly back from the point, but leaving the midrib, and as it eats it fringes the eaten margin with its excrement, held together by silk, among which it is absolutely undistinguishable. After the last moult it abandons these habits, and lives openly on the upper-side of the leaf, having changed its form for one in which it is able, apparently, to despise concealment" (Davidson, J. Bombay, N. H. S. 1890, 274). The larva of *Rahinda Hordonia* "feeds on *Acacia* and *Albizzia*, and has the curious habit of feeding by preference, not on green leaves, but on those which it has caused to wither. It bites through one or two pinnæ, which immediately droop and dry up, but are kept from falling by a few threads of silk with which the larva has taken the precaution to attach them to the central

leaf-stalk. Henceforth it lives among them and feeds entirely on them" (Davidson, l.c. 1896, 250).

KEY TO THE ASIATIC GENERA OF LIMENITINA.

- A. *First and Second subcostal veinlets of forewing emitted before end of cell.*
  - a. *Cell closed in forewing and hindwing.*
    - a. a. Eyes naked . . . . . AUZAKIA.<sup>1</sup> BHAGADATTA.<sup>2</sup> LEBADEA.<sup>3</sup>
  - b. *Cell closed in forewing only.*
    - a. a. Eyes naked . . . . . MODUZA.<sup>4</sup> NAJAS.<sup>5</sup> LIMENITIS.<sup>6</sup>  
 PANDITA.<sup>7</sup> PARATHYMA.<sup>8</sup>  
 TATISIA.<sup>9</sup> PANTAFORIA.<sup>10</sup>  
 PSEUDOHYPOLIMNAS.<sup>11</sup> SABANIA.<sup>12</sup>  
 BALANGA.<sup>21</sup>
    - b. b. Eyes hairy . . . . . PARASARPA.<sup>13</sup> SUMALIA.<sup>14</sup>  
 HYPOLIMNESTHES.<sup>15</sup> TARATTIA.<sup>16</sup>  
 SINIMIA.<sup>17</sup> LADOGA.<sup>18</sup>  
 CONDOCHATES.<sup>19</sup> KIRONGA.<sup>20</sup>  
 ZAMBOANGA.<sup>22</sup>
  - c. *Cell open in forewing and hindwing.*
    - a. a. Eyes naked . . . . . LAMASIA.<sup>23</sup> TACORÆA.<sup>24</sup>  
 CHENDRANA.<sup>25</sup> ATHYMA.<sup>26</sup>  
 TACOLA.<sup>27</sup> ZABANA.<sup>28</sup> PARANEPTIS.<sup>29</sup>  
 KALKASIA.<sup>30</sup> HAMADRYODES.<sup>31</sup>  
 PHÆDYMA.<sup>32</sup> ANDRAPANA.<sup>33</sup>  
 NEPTIS.<sup>34</sup> BIMBISARA.<sup>35</sup>  
 PANDASSANA.<sup>36</sup> BISAPPA.<sup>37</sup>  
 PALANDA.<sup>38</sup> STABROBATES.<sup>39</sup>  
 LASIPPA.<sup>40</sup> BACALORA.<sup>41</sup>  
 RASALIA.<sup>42</sup> ANDASENODES.<sup>43</sup>
    - b. b. Eyes hairy . . . . . THARASIA.<sup>44</sup>
- B. *First subcostal veinlet only of forewing emitted before end of cell.*
  - a. *Cell closed in forewing and hindwing.*
    - a. a. Eyes naked . . . . . CHALINGA.<sup>45</sup>
  - b. *Cell closed in forewing only.*
    - a. a. Eyes naked . . . . . PATSUIA.<sup>46</sup> LITINGA.<sup>47</sup>
  - c. *Cell open in forewing and hindwing.*
    - a. a. Eyes naked . . . . . ACCA.<sup>48</sup> TAGATSIA.<sup>49</sup> MAROSIA.<sup>50</sup>  
 RAHINDA.<sup>51</sup> ATHARIA.<sup>52</sup>

1 <i>Type Danava, Moore.</i>	8 <i>Type Sulpitia, Cram.</i>	16 <i>Type Lysanias, Hewits.</i>	23 <i>Type Lyncoides, Hewits.</i>
2 " <i>Austenia, Moore.</i>	9 " <i>Kanwa, Moore.</i>	17 " <i>Ciocolatina, Pouj.</i>	24 " <i>Asura, Moore.</i>
3 " <i>Ismene, Dbldy.</i>	10 " <i>Nefte, Cram.</i>	18 " { <i>Camilla, Linn.</i>	25 " <i>Pravara, Moore.</i>
4 " <i>Procris, Cram.</i>	11 " <i>punctata, Leech.</i>	18 " { = <i>Sibylla, Linn.</i>	26 " <i>Perius, Linn.</i>
5 " <i>Populi, Linn.</i>	12 " <i>speciosa, Stgr.</i>	19 " <i>Opalina, Kollar.</i>	27 " <i>Larymna, Dbldy.</i>
6 " { <i>Drusilla, Bergst.</i>	13 " <i>Zayla, Dbldy.</i>	20 " <i>Ranga, Moore.</i>	28 " <i>Urvasi, Feld.</i>
6 " { = <i>Camilla, Fabr.</i>	14 " <i>Daraxa, Dbldy.</i>	21 " <i>Kasa, Moore.</i>	29 " <i>Lucilla, W. V.</i>
7 " <i>Sinope, Moore.</i>	15 " <i>albomaculata, Leech.</i>	22 " <i>Gutama, Moore.</i>	30 " <i>Alwina, Brem.</i>

31 Type <i>Lactaria</i> , <i>Butler</i> .	37 Type <i>Neriphus</i> , <i>Hewits</i> .	43 Type <i>mimetica</i> , <i>G. Smith</i> .	48 Type <i>Venulia</i> , <i>Linn</i> .
32 „ <i>Heliodora</i> , <i>Cram</i> .	38 „ <i>Illegera</i> , <i>Esch</i> .	44 „ <i>Jina</i> , <i>Moore</i> .	49 „ <i>Dama</i> , <i>Moore</i> .
33 „ <i>Columella</i> , <i>Cram</i> .	39 „ <i>Radha</i> , <i>Moore</i> .	45 „ <i>Elwesi</i> , <i>Oberth</i> .	50 „ <i>Antara</i> , <i>Moore</i> .
34 „ <i>Aceris</i> , <i>Lep</i> .	40 „ <i>Heliodore</i> , <i>Fabr</i> .	46 „ <i>Sinensium</i> , <i>Oberth</i> .	51 „ <i>Hordonia</i> , <i>Stoll</i> .
35 „ <i>Amba</i> , <i>Moore</i> .	41 „ <i>Pata</i> , <i>Moore</i> .	47 „ <i>Cottini</i> , <i>Oberth</i> .	52 „ <i>Consimilis</i> , <i>Bd</i> .
36 „ <i>fuliginosa</i> , <i>Moore</i> .	42 „ <i>gracilis</i> , <i>Kirsch</i> .		

Genus PARASARPA.

*Limenitis* (sect. V., part), *Felder*, *Neues Lep.* p. 30 (1861).

*Limenitis* (part), *Westwood*, *Gen. D. Lep.* p. 274 (1850). de *Nicéville*, *Butt. of India, etc.*, ii. p. 156 (1886).

IMAGO.—Male. Wings large, very broad. *Forewing* triangular, costa slightly arched at the base, apex rounded; exterior margin slightly scalloped; cell broad, less than half length of the wing in length, closed; first subcostal branch emitted at two-fifths before end of the cell, second at one-sixth before the end; upper discocellular close to the subcostal, second concave and slightly angled inward in the middle, lower slender and slightly concave posteriorly; middle median veinlet emitted immediately before end of the cell. *Hindwing* triangular, costa short, apex obtuse, exterior margin very slightly convex and acutely scalloped, anal angle broadly rounded; cell open; precostal vein long, incurved. *Body* stout, hairy; palpi very laxly but thickly hairy, third joint elongated and pointed; antennal club elongated, slender; eyes hairy. Sexes alike.

TYPE.—P. Zayla.

PARASARPA ZAYLA (Plate 248, fig. 1, 1a, b, ♂ ♀).

*Limenitis Zayla*, *Doubleday and Hewitson*, *Gen. D. Lep.* ii. p. 276, pl. 35, fig. 4 (1850). de *Nicéville*, *Butt of India, etc.*, ii. p. 159 (1886).

IMAGO.—Male and female. Upperside dark olivaceous ochreous-brown. Cilia alternated with white. *Forewing* with four black sinuous lines crossing the cell, two similar lines, and a line and a figure of eight mark below the cell, the interspace of middle cell lines, of the discocellular lines and the lower mark being brownish-ochreous; a broad transverse discal pale ochreous band divided by the brown veins, its inner edge uneven but sharply defined, its outer edge lunulated and somewhat diffused, and the lower portion of the band inwardly whitish; three slender pale ochreous elongated streaks in continuation of the band, the ground colour beyond, brown, gradually deepening to black and bordering a submarginal series of ochreous-red deep continuous lunules, their points joined to an ochreous red outer line—their interspaces being black; the extreme outer margin black and traversed by a slender brownish-grey wavy line. *Hindwing* with some obscure black lines across the cell;



a broad transverse discal white band attenuating to a point at the submedian veinlet; the discal ground colour beyond, brown, broadly deepening to black, and traversed by a submarginal prominent series of deep ochreous-red lunules, beyond which is a pale brownish-grey lunular fascia followed by a slender grey wavy line. Underside very much paler; glossed with greenish-grey at base of hindwings; markings similar to above, but all the bands more obscure and blurred. *Body* and palpi above olivescence-brown; body beneath greenish-grey; palpi and legs beneath brownish-white, legs above pale brown; antennæ black, tipped with ochreous beneath.

Expanse  $3\frac{4}{10}$  to  $3\frac{8}{10}$  inches.

HABITAT.—Sikkim; Assam; Silhet; Khasias.

DISTRIBUTION.—“This very lovely insect is found not uncommonly in Sikkim, in dense forest at 6000 to 8000 feet elevation, in June, July and August. It is a strong flyer and settles on the ground like *L. Darava*” (Elwes, Tr. Ent. Soc. 1888, 352). Mr. de Nicéville records it as “occurring somewhat plentifully on Birch Hill, Darjiling (Butt. Ind. 159). Mr. W. Doherty found it “not a rare species in the Naga Hills (P. Z. S. 1891, 276). “Common in the Khasias” (Col. Swinhoe’s Notes).

### Genus AUZAKIA.

*Limnitis* (part), de Nicéville, Butt. of India, etc., ii. p. 156 (1886).

IMAGO.—Wings large. *Forewing* triangular, costa arched towards the end, apex produced and obtusely pointed; exterior margin oblique, slightly concave in the middle, and nearly even, posterior angle rounded; posterior margin rather short and almost straight; cell large, extending to two-fifths of the wing; first subcostal branch emitted at one-third before end of the cell, second at a short distance before the end; upper discocellular close to subcostal, middle short and straight, lower slightly concave posteriorly; middle median veinlet emitted immediately before lower end of cell, upper median much arched. *Hindwing* rather short, prolonged posteriorly; apex very convex, exterior margin extremely convex and very slightly scalloped, anal angle produced and obtusely pointed, abdominal margin long; precostal vein long, abruptly incurved; cell short, broad, closed by a slender outwardly recurved lower discocellular veinlet; two upper median veinlets emitted from lower end of cell. *Body* large, thorax robust; palpi porrect, stout, compactly hairy beneath, laxly hairy above, apical joint short, conical, pointed; antennæ long, slender, club thickening to the tip; eyes naked. Sexes somewhat dissimilar.

TYPE.—A. Danava.

**AUZAKIA DANAVA** (Plate 249, fig. 1, 1a, b, c, ♂ ♀).

*Limenitis Danava*, Moore, Catal. Lep. Mus. East India Company, i. p. 180, pl. 6a, fig. 2, ♂ ♀ (1857).  
de Nicéville, Butt. of India, etc., ii. p. 157 (1886).

IMAGO.—Male. Upperside olive-black from the base to obliquely across half of the forewing, the outer area being more or less pale olive-brown. Cilia brown. *Forewing* with pale interspaced black bars within the cell; a similar discocellular bar, and one below the cell; discal transverse edge of the dark basal area sharply defined and sinuous, its outer edge more or less pale and lunular; a small white dentate spot on the costa before the apex; outer area crossed by a broad discal olive-black lunular fascia, a contiguous less-defined lunular slender fascia, followed by a slender submarginal lunular fascia, and then by a marginal fascia. *Hindwing* with obscurely defined basal black cell-bars; the transverse discal edge of the dark basal area straight, followed by two broad discal decreasing brown fasciæ, a wavy submarginal and a marginal fascia, the anal area being suffused with glossy olive-green. Underside pale olivescent ochreous-brown; the markings as above but ill-defined. *Forewing* with the basal marks slender, their interspaces being violet-grey; the transverse outer fasciæ edged more or less with violet-grey, the submarginal fascia ending in a patch at the apex. *Hindwing* with three distinct basal marks interspaced with violet-grey; the transverse outer fasciæ broadly edged with suffused violet-grey.

Female. Upperside paler olive-brown; markings similar to the male; the interspaces of basal marks also paler; the sinuous outer border of the basal area and submarginal fascia broadly olivescent white. Underside much paler olivescent-brown; markings similar to the male, but less defined, and more diffused. *Body* above dark olive-brown; palpi above brown, beneath and legs brownish-white; body beneath olivescent-white; antennæ brown, tipped with red beneath. All the above markings are paler and less intensified in the dry-season brood of both sexes.

Expanse, ♂ 3 to  $3\frac{4}{10}$ , ♀  $3\frac{4}{10}$  to  $3\frac{6}{10}$  inches.

HABITAT.—W. and E. Himalayas; Assam; Naga Hills; Khasia Hills; Upper Burma.

DISTRIBUTION.—Mr. de Nicéville records it "as having a wide range in the Himalayas, occurring from Masuri to Sibsagar in Upper Assam" (Butt. Ind. ii. 158). The late Capt. R. Bayne Reed obtained it in Kashmir (MS. Notes), and the late Major-General G. Ramsay took numerous specimens in Nepal. Mr. H. J. Elwes records it as "rare in Sikkim at elevations up to 7000 feet, from April to October, the female being seldom found" (Tr. Ent. Soc. 1888, 352). Mr. de Nicéville also says, "the male is rather rare in Sikkim, but is found from April to October from 1500 to 7000 feet. The female being excessively scarce" (Sikkim Gaz. 1894, 140). Mr. W. Doherty found it "rather rare in the Naga Hills" (P. Z. S. 1891, 277).

Colonel C. Swinhoe has received numerous specimens from the Khasia Hills. Dr. N. Manders records "a single specimen obtained at Fort Stedman, Shan States, Upper Burma, taken near water in thick jungle in August" (Tr. Ent. Soc. 1890, 523).

CHINESE ALLIED SPECIES.—*Auzakia Leechii* (L. *Danava*, Leech, Butt. of China, etc., p. 188, pl. 14, fig. 1, ♂).—Male. Upperside uniformly darker than typical *Danava*. Forewing with the discal edge of the dark basal half more acutely sinuous, the two discal dark fasciæ confluent and comparatively broader, whereas in *Danava* the inner fascia is broad and the outer fascia linearly lunulate; the obsolescent fascia intervening between the latter and the marginal fascia is glossy greyish-blue; that in *Danava* is dark brown; the two pale cell-bars and the upper end of the discal sinuous line is also glossy greyish-blue. Hindwing with the two discal dark fasciæ partly confluent, and the submarginal fascia glossy greyish-blue. Underside darker uniformly than in *Danava*, the discal edge of the basal area and the discal fasciæ more sinuous, especially on the forewing. HABITAT. Moupin; C. China.—*Auzakia albomarginata* (*Limenitis albomarginata*, Weymer, Stett. Ent. Zeit. 1887, p. 5, pl. 2, fig. 2, ♂). Martin, Neue Tagschmett. Sumatra, part 2, p. 7, ♀ (1895). *Syn.* *Limenitis Hageni*, Staudinger, Iris, 1892, p. 452; *id.* 1894, p. 342. *Habitat.* Sumatra.

#### Genus SUMALIA.

*Limenitis* (sect. V., part), Felder, Neues Lep. p. 30 (1861).

*Limenitis* (part), Westwood. de Nicéville.

IMAGO.—Male. Wings short. *Forewing* triangular; costa slightly arched, apex produced and rounded, exterior margin oblique, slightly concave in the middle, and uneven; cell extending to nearly half the wing; first subcostal branch emitted fully two-fifths before end of cell, second at one-sixth; middle discocellular acutely bent in the middle, lower slender, recurved and concave posteriorly; middle median veinlet emitted at a short distance before lower end of cell. *Hindwing* triangular, prolonged posteriorly; apex obtuse; exterior margin very oblique, slightly convex, scalloped, anal angle prolonged and rounded, abdominal margin long; cell open; precostal vein incurved. *Body* moderately stout, densely hairy; palpi densely but very laxly hairy above and beneath, apical joint stout and conical; antennal club elongated. Eyes hairy. Sexes similar.

TYPE.—S. Daraxa.

#### SUMALIA DUDU (Plate 250, fig. 1, 1a, b, ♂ ♀).

*Limenitis Dudu*, Westwood, Gen. D. Lep. ii. p. 276 (1850). de Nicéville, Butt. of India, etc., ii. p. 159, pl. 24, fig. 112, ♂ (1886).

IMAGO.—Male and female. Upperside rich dark olivescient ochreous-brown,



darkest in wet-season brood. Cilia alternated with white. Both wings with a transverse discal white band, which anteriorly on the forewing is slightly sinuous edged and macular, and then posteriorly widening with even edge to above the anal angle. *Forewing* also with a black dot at base of the cell, two black sinuous bars across middle of the cell; a figure of eight mark below the cell, and a discocellular wedge-shaped mark, each interspaced with deep red; the inner discal border of the white band anteriorly broadly black bordered; an oblique series of three very small white linearly-dentate spots extending from the upper median veinlet to the subcostal before the apex, above which is a slender red costal streak; outer discal area traversed by a broad black duplex lunular band, followed by a narrower marginal wavy line. *Hindwing* also with the outer discal area traversed by a broad black sinuous band, a submarginal row of large black broad lunules, followed by a slender wavy marginal line, their lower interspaces and the anal angle being deep red.

Underside rich glossy pale purplish-grey; base of hindwing from the costal vein deep grey; the discal white band as above, which is edged inwardly by a very slender blackish line and outwardly by a diffused red line. *Forewing* also with the interspaces of the cell, of the discocellular bars, and of the mark below the cell deep red; apex broadly suffused with red; the outer marginal reddish lunular fasciæ indistinctly defined. *Hindwing* also with three basal prominent white spots, each edged by a slender black line; the outer marginal reddish lunular fascia indistinctly defined; anal angle with a broad diffused red patch. *Body* and palpi above olivaceous ochreous-brown; palpi, body, and legs beneath greyish-white; legs above pale brownish-ochreous; antennæ black above, red beneath.

Expanse, ♂  $2\frac{8}{10}$  to  $3\frac{4}{10}$ , ♀  $3\frac{6}{10}$  inches.

HABITAT.—Nepal; Sikkim; Silhet; Shillong; Naga and Khasia Hills; Upper Burma.

DISTRIBUTION.—We possess specimens taken in Nepal by the late General G. Ramsay. Mr. L. de Nicéville records it as being “found in Sikkim from 5000 to 8000 feet elevation in June, July and August, in dense forests. It flies round tops of trees on the highest points of ridges” (Sikkim Gaz. 1894, 141). Mr. H. J. Elwes says it is “a rare species in Sikkim, having much the same habits as *L. Zayla*, but occurs at lower elevations. A female was taken at Jellapahar in July” (Tr. Ent. Soc. 1888, p. 353). Mr. W. Doherty obtained it in the Naga Hills (P. Z. S. 1891, 276). Colonel C. Swinhoe notes it as being common in the Khasias. It is recorded from Silhet and Shillong (Butt. Ind. ii. 159). Capt. E. Y. Watson took “a single male in the Chin Hills, Burma, at 5000 feet elevation, in May” (J. Bombay N. H. S. 1897, 655). Dr. N. Manders records a single specimen taken in the Shan States, Upper Burma, near Koni, on the summit of the hill at 5000 feet elevation at end of October” (Tr. Ent. Soc. 1890, 523).

## SUMALIA DARAXA (Plate 250, fig. 2, 2a, b, ♂ ♀).

*Limenitis Daraxa*, Doubleday and Hewitson, Gen. D. Lep. ii. p. 276, pl. 34, fig. 4 (1850).  
de Nicéville, Butt. of India, etc., ii. p. 158 (1886).

IMAGO.—Male and Female. Upperside rich purpurescent blackish-brown. Cilia slenderly alternated with white; basal marks black. *Forewing* with a transverse discal pale green macular band, the upper portions being widely separated and rounded, the lower quadrate and continuous; an outer discal black deeply lunular line and a wavy marginal line enclosing a submarginal row of black dentate spots. *Hindwing* with a transverse discal pale green continuous band, an outer discal broader black deep lunular fascia, and a narrow wavy marginal line enclosing a row of black dentate spots; a rounded deep red patch at anal angle. Underside reddish-ferruginous; markings as above; interspaces of the basal marks violet-grey, the transverse discal band pale greenish-white, the outer discal and marginal markings bordered with violet-grey, abdominal margin bluish-grey. *Body* above olivescent-black; palpi above black; body and palpi below and legs bluish-grey; antennæ black above, reddish beneath.

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

HABITAT.—Kumaon; Sikkim; Bhotan; Silhet; Cachar; Assam; Naga and Khasia Hills; Burma; Upper Tenasserim; Malay Peninsula.

DISTRIBUTION.—“This is not a rare species, and has a wide range. Mr. Atkinson records it from the Himalayas of the North-West Provinces, and it appears to occur at a suitable elevation all along the Hills as far east as Sibsagar in Upper Assam and the Naga Hills; and Captain C. T. Bingham took it in April in the Upper Thoungyeen forests in Upper Tenasserim” (de Nicéville, l.c. 158). In Sikkim “it occurs from 1000 to 8000 feet elevation throughout the warm months” (de Nicéville, Sikkim Gaz. 1894, 140). Mr. H. J. Elwes obtained it in Sikkim east of the Tista River, where, along the ridge from Dumsong to Khumpong, it is common in open places in the forest in August at 6000 feet elevation. Mr. Otto Möller notes it as found in Sikkim from 1000 to 8000 feet, between April and November.” (Tr. Ent. Soc. 1888, 352.) Colonel C. Swinhoe notes it as “common in the Khasias.” Mr. J. Wood-Mason obtained “a male near Silcurei in Cachar in June and another on Nemotha Peak in September” (J. A. Soc. Beng. 1886, 359.) Captain E. Y. Watson took “a single male in the Chin Hills, Burma, during the rainy season” (J. Bombay N. H. S. 1897, 655). Mr. W. Doherty records this species “as not uncommon on Larut Hill, Perak, at about 5000 feet elevation” (J. A. Soc. Bengal, 1891, 176).

HABITS.—Mr. H. J. Elwes states that “it settles on the ground with open wings, and is a bold quick-flying insect, returning several times to the same spot if missed with the net” (Tr. Ent. Soc. 1888, 352.)



**SUMALIA ZULEMA** (Plate 251, fig. 1, 1a, b, c, ♂ ♀).

*Limenitis Zulema*, Doubleday and Hewitson, Gen. D. Lep. ii. p. 276, pl. 34, fig. 1 (1850).  
de Nicéville, Butt. of India, etc., ii. p. 159 (1886).

IMAGO.—Male and Female. Upperside; ground-colour rich ferruginous-red, the basal area more or less tinged with dark olivescent ferruginous-brown; cilia alternated with white. Both wings crossed by a bluish-white black-bordered discal band, which is nearly straight in its course and divided by black veinlets, the band very broad in the *dry-season* brood and narrower in the *wet-season* brood; upper portion of the band on the forewing somewhat macular and formed of well-separated spots, that of the hindwing straight, even-edged and ending at the submedian vein above anal angle; beyond is an outer discal transverse row of broad black spots, which are lunate on the forewing and quadrate on the hindwing, followed by a submarginal row of narrower black spots, which are more or less dentate in shape, and then by a marginal slender black line and an extreme outer-marginal black line, the two latter being obscurely inwardly-edged by a violet-grey line. *Forewing* also with two subapical very small superposed white dentate spots; the basal area crossed by black cell-streaks, discocellular streaks, and ringlet marks below the cell, the middle cell-streaks, discocellular streaks and mark below the cell being more or less centred with red. *Hindwing* also with less defined black cell-streaks. Underside; ground-colour much paler, the basal area of forewing more or less olive-grey, and of the hindwing brighter olive-grey; the outer area purpurescent-red; the bluish-white discal band, black basal marks and outer black markings, as above, the edges of the marginal lines violescent-grey. *Body* and palpi above olivescent ferruginous-brown, beneath and legs greyish-white; middle and hind tibiæ and tarsi above pale brownish-ochreous; antennæ black, tipt with red beneath.

Expanse, ♂  $2\frac{6}{10}$  to 3, ♀ 3 inches.

HABITAT.—Sikkim; Bhotan; Assam; Khasias; Burma; Upper Tenasserim.

DISTRIBUTION.—“This is a rare species, which is occasionally received from Sikkim. Mr. A. V. Knyvett has obtained it near Buxa in Bhotan, and there is a single specimen from Cherrapunji, Assam, in the Indian Museum, Calcutta” (de Nicéville, *l.c.* 159). Mr. H. J. Elwes records it as “a very rare insect in Sikkim, neither Mr. Möller nor I have ever procured it” (Tr. Ent. Soc. 1888, 352). “Very rare in Sikkim, less rarely found at Daling in May and June from 1500 to 5000 feet elevation; also at Sivoke in April. It also occurs in Assam and Upper Burma” (de Nicéville, Sikkim Gazetteer, 1894, 141). Colonel C. H. E. Adamson records a single specimen taken in Upper Tenasserim in March, 1881” (List, p. 22). “Common at Cherrapunji” (Colonel Swinhoe, Notes).

Of our illustrations of this species on plate 251, figs. 1, 1a, b, represent the male and female dry-season form, and 1c the male of wet-season form.



INDO-MALAYAN SPECIES.—*Sumalia Agneya* (Limenitis Agneya, Doherty, Journ. As. Soc. Bengal, 1891, p. 176. de Nicéville, J. A. S. Beng. 1895, p. 416. *Habitat.* Larut Hill, 2000 feet, Perak. N.E. Sumatra.—*Sumalia Bockii* (Limenitis Bockii, Moore, Tr. Ent. Soc. Lond. 1881, p. 308. de Nicéville, Journ. As. Soc. Bengal, 1895, p. 416. *Habitat.* N.E. Sumatra.—*Sumalia Staudingeri* (Limenitis Staudingeri, Ribbe, Iris, 1889, p. 235, pl. 5, fig. 1. *Habitat.* Ceram.

MALAYAN AND CHINESE ALLIED GENERA.—

Genus TARATTIA.—Male. *Forewing* rather elongated and narrow, triangular; costa very slightly arched at the base, apex obtuse, exterior margin oblique and scalloped; upper discocellular short, middle discocellular concave, lower recurved; cell closed, middle median emitted immediately before lower end of the cell. *Hindwing* conically triangular; exterior margin very convex, anal angle rounded. Antennal club elongated and stout; eyes hairy. TYPE.—T. Lysanias.—*Tarattia Lysanias* (Limenitis Lysanias, Hewitson, Exot. Butt. ii. *Lim.* pl. 2, figs. 10, 11 (1859). *Habitat.* Celebes.

Genus HYPOLIMNETHES.—Male. *Forewing* short, triangular; costa very slightly arched towards the end, apex obtuse, exterior margin oblique, slightly uneven; posterior angle rounded; cell very broad, closed; first subcostal branch emitted at one-third before end of the cell, second at one-eighth before the end; middle discocellular deeply concave, lower outwardly recurved, slender; middle median veinlet emitted at a short distance before lower end of cell. *Hindwing* short, triangular, produced posteriorly; exterior margin convex, scalloped, anal angle rounded, abdominal margin long; cell area very broad, open; precostal vein incurved; radial emitted from lower subcostal at nearly half the distance of the base of the latter from the costal. *Body* moderately stout, finely hairy; palpi slender, densely hairy above and below, apex pointed; antennæ slender; eyes hairy. Sexes dissimilar.

TYPE.—H. albomaculata.—*Hypolimnethes albomaculata* (Limenitis albomaculata, Leech, Entom. 1891, Suppl. p. 27; *id.* Butt. of China, etc., p. 178, pl. 16, fig. 3, ♂. Oberthur, Etud. Entom. 1892, p. 7, pl. 2, fig. 15, ♂, *id.* 1893, p. 15, pl. 6, fig. 82, ♀. *Var.* L. nigricans, Oberthur, *id.* 1896, pl. 10, fig. 175, ♂.—This is an excellent mimic of the common Nymphalid butterfly, *Hypolimnias misippus*. *Habitat.* Moupin, E. Thibet; W. China.

#### Genus BHAGADATTA.

*Limenitis* (part), de Nicéville, Butt. of India, etc., ii. p. 156 (1886).

IMAGO.—Male. Wings large, broad. *Forewing* subtriangular; costa slightly arched, apex rounded, exterior margin slightly oblique, well scalloped, posterior margin long, straight; cell very broad, extending to two-fifths of the wing, closed;

first subcostal branch emitted at one-third before end of the cell, second at one-sixth before the end; discocellulars slightly outwardly-oblique, middle discocellular slightly bent near lower end, lower discocellular slightly concave posteriorly; middle median emitted immediately before lower end of cell. *Hindwing* broad; exterior margin broadly convex hindward and deeply scalloped, anal angle rounded; cell broad, closed; precostal vein somewhat bent in the middle, emitted opposite the subcostal; two upper medians emitted from end of cell. *Body* moderately stout; palpi densely squamous beneath, second joint hairy above, apex conical and pointed; antennæ with a lengthened slender club; eyes naked. Sexes alike.

TYPE.—*B. Austenia*.

**BHAGADATTA AUSTENIA** (Plate 251, fig. 2, 2a, ♂).

*Lebadea Austenia*, Moore, Proc. Zool. Soc. 1872, p. 560, pl. 32, fig. 1 ♂.

*Limenitis Austenia*, de Nicéville, Butt. of India, etc., ii. p. 157 (1886).

IMAGO.—Male and female dark olivaceous umber-brown, with purplish reflections. Both wings crossed by a discal pale brown fascia, which, on the forewing, outwardly curves in a series of deep lunules from the costa and extends thence on the hindwing more broadly and diffused to above the anal angle; beyond is an outer discal transverse series of prominent pale bordered, dark-brown, dentate lunular marks, those from the costa of the forewing being most defined and dentate in form, and with slender white borders, and thence decreasing in width posteriorly; those on the hindwing uniformly narrow; the area exterior to these pale brown with a submarginal and marginal dark lunular line. Cell of forewing crossed by six and that of the hindwing by four black streaks. Underside paler, greyish-brown, the base pale lilacine-grey; markings as above, but more defined; the discal and outer lunules pale lilacine-grey bordered. *Body* and palpi above brown, beneath and legs greyish-white, antennæ black.

Expanse, 3 to 3 $\frac{6}{10}$  inches.

HABITAT.—Upper Assam; Khasias; Cachar.

DISTRIBUTION.—We possess the male type specimen, taken by Col. Godwin-Austen in the Khasia Hills. "The Indian Museum, Calcutta, possesses two specimens, also taken by Col. Godwin-Austen at Sarathu in the Khasia Hills, and another pair taken by Mr. Wood-Mason on Memotha Peak, Cachar, in September" (de Nicéville, Butt. Ind. ii. 157). Mr. W. Doherty obtained four males and one female at Margharita, S.E. of Sadya, Upper Assam, in May, 1889, where, according to his observations, it is a low country insect" (P. Z. S. 1891, 278).

MALAYAN allied Genus.—*PANDITA*, Moore, Catal. Lep. Mus. East India Company, i. p. 181 (1857). Distant, Rhop. Malayana, p. 146 (1883).—MALE. Wings

rather broad and short. *Forewing*, subtriangular; costa arched from the base, apex rounded, exterior margin slightly oblique and scalloped; cell broad and short, closed; first subcostal branch emitted at one-third before end of cell, second at one-ninth before the end; upper discocellular short, outwardly oblique; middle discocellular bent outward at one-third from its upper end, lower discocellular extremely slender; two upper median veinlets from lower end of cell. *Hindwing* broadly conically-ovate; exterior margin convex, scalloped, anal angle rounded; precostal vein stout, incurved, long; costal vein extending to apex; radial and base of lower subcostal at equal distance from the costal vein; cell open. *Body* moderately robust; palpi rather short, directed upward and outward to about middle of eyes, flattened at the sides and beneath, compactly clothed with short hairy scales, those at the edges beneath lax and longest, apex conically-pointed; antennal club lengthened, slender; eyes naked. Sexes alike. *Type*. P. Sinope.—*Pandita Sinope*, Moore, Catal. Lep. Mus. E. I. C. i. p. 181, pl. 6a., fig. 3 (1857). Distant, Rhop. Malay. p. 146, pl. 12, fig. 13 ♀. P. Sinoria, Felder, Reise Nov. Lep. p. 425. *Habitat*. Malay Peninsula; Penang; Singapore; Sumatra; Billiton; Borneo; Banca; Java.—*Pandita imitans*, Butler, Entom. M. Mag. 1883, p. 54. Kheil, Rhop. Nias, p. 23 (1884). *Habitat*. Nias Island.

#### Genus LEBADEA.

*Lebadea*, Felder, Neues Lep. p. 28 (1861). Distant, Rhop. Malayana, p. 144 (1883). de Nicéville, Butt. of India, etc., ii. p. 151 (1886).

IMAGO.—Male. *Forewing* triangular; costa almost straight, apex broadly produced and abruptly rounded, exterior margin very concave in the middle and slightly uneven, posterior angle obtusely pointed, posterior margin short and recurved; cell long, narrow, closed, upper end extending to more than half the wing; first subcostal branch emitted at fully one-third before end of the cell, second at fully one-sixth before the end; discocellulars inwardly oblique, upper very short, middle bent inward, lower inwardly concave posteriorly; middle median veinlet emitted at a short distance before lower end of the cell; submedian vein recurved. *Hindwing* short, conically-triangular; apex rounded, exterior margin oblique, convex posteriorly, anal angle rounded; cell short, broad, closed; precostal vein incurved, emitted at some distance above the origin of the subcostal; two upper median veinlets emitted together at some distance beyond lower end of the cell. *Body* somewhat slender; palpi slender, very compactly squamous beneath, hairy above, tip conical; antennæ slender, long, with an elongated slender club; eyes naked.

TYPE.—L. Ismene.



## LEBADEA ISMENE (Plate 252, fig. 1, 1a, ♂ ♀).

*Limenitis Ismene*, Doubleday and Hewitson, Gen. D. Lep. ii. p. 276, pl. 34, fig. 2, ♂ (1850).

*Lebadea Ismene*, Felder, Neues Lep. p. 28 (1861). de Nicéville, Butt. of India, etc., ii. p. 152, pl. 19, fig. 79, ♂ (1886).

*Wet and Dry-season brood.*

IMAGO.—Male. Upperside rich fulvous; cilia alternately edged with white. Both wings crossed by an inwardly-oblique discal white broad band. *Forewing* with the band somewhat macular and blackish bordered, being composed of posteriorly-increasing broad irregular quadrate-shaped spots, its inner edge throughout being irregular and its outer edge sinuous; followed by a contiguous transverse row of slender white lunules, which extend upward to the costa before the apex, each of the latter being outwardly defined by a black lunule; beyond is a submarginal less-defined whitish-edged black sinuous line, the points of which are directed inward between the veins; the inner submarginal interspace being very slightly powdered with greyish-white scales, and the apex with a broad greyish-white patch; three slender subbasal zigzag black lines across the cell, which are continued below to the submedian vein, and another pair enclosing the discocellular veinlets, the enclosed interspaces being brighter fulvous, the interspace between the outer cell-bar and the discocellular being grey speckled. *Hindwing* with the band blackish-bordered and ending in a point above anal angle, its inner edge even, its outer edge slightly sinuous; followed by a contiguous row of more or less defined whitish lunules, which latter are rather broadly outwardly-edged by an inner discal row of black dentate spots, beyond which is an outer discal row of more or less slightly-defined blackish dentate spots, the two latter rows being still less defined in the dry-season brood; these are followed by a submarginal white-edged black sinuous line; two slender black subbasal zigzag lines extending from the costal vein across the cell to the submedian vein. Underside much paler, palest and duldest in dry-season brood; the base of the wings and the abdominal margin of the hindwing greyish;—all the markings, as above, but less distinct, and lilacine-white.

Female. Upperside darker fulvous, markings as in the male, but more prominent. *Forewing* with the discal broad white band more macular, the contiguous white lunules having the black dentate spots placed outwardly against them more prominently, the apical white patch much smaller, the submarginal sinuous line more distinct. *Hindwing* with broader black inner-discal dentate spots and with an outer discal similar row of less defined blackish dentate patches. Underside as in the male; the markings more distinct. *Body* and palpi above fulvous; beneath and forelegs, middle and hind femora greyish-white; middle and

hind tibiæ and tarsi pale ochreous ; antennæ black, the club with a white bar above, reddish beneath.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to  $3\frac{2}{10}$  inches.

HABITAT.—Sikkim ; Bhotan.

DISTRIBUTION.—This species, so far as our own observations have extended, appears to be confined to the Eastern Himalayas. We have verified examples from Sikkim and Bhotan only. Mr. L. de Nicéville records it as “occurring somewhat commonly at low elevations, in forest, in Sikkim” (Butt. Ind. ii. 152). We possess specimens from Sikkim, and also from Bhotan, taken by Mr. G. C. Dudgeon in April. Mr. H. J. Elwes records it also as “not uncommon in Sikkim at low elevations, between April and December” (Tr. Ent. Soc. 1888, 352). We have examined specimens in Mr. O. Möller’s collection, taken in Sikkim in March and November.

NOTE.—Mr. de Nicéville (Butt. Ind. ii. 152) also refers the specimens to *Ismene*, which were taken by Mr. Wood-Mason in Cachar, recording it also as “occurring in Assam, Silhet, and Naga Hills, Chittagong and Akyab.” These specimens probably all belong to the next species (*Martha*). Some Khasia and Upper Burma specimens certainly have the discal transverse band somewhat variably wider than in Lower Burma and Tenasserim examples of *Martha*, but all those from the above-mentioned localities will doubtless be found to agree with the latter in the points noted in the description.

HABITS OF IMAGO.—“It has a weak flight, always settles with outspread wings, usually on a leaf” (de Nicéville, l.c. 152).

Of our illustrations of this species on plate 252, fig. 1, 1a represents a male and female from Sikkim.

#### LEBADEA MARTHA.

*Papilio Martha*, Fabricius, Mant. Ins. ii. p. 56, ♀ (1787).

*Limenitis Martha*, Butler, Catal. Fabr. Lep. Brit. Mus. p. 59. pl. 1, fig. 4, ♀ (1869).

*Limenitis attenuata*, Moore, Proc. Zool. Soc. 1878, p. 829.

*Lebadea attenuata*, Moore, Journ. Linn. Soc. Zool. 1886, p. 35. de Nicéville, Butt. of India, etc., ii. p. 152 (1886).

*Wet-season brood* (Plate 252, fig. 2, 2a ♂ ♀).

IMAGO.—Male and female. Upperside of a darker ground-colour than in *Ismene*, the discal transverse macular white band on both wings narrower, being throughout about half the width in the male and less than half in the female ; on the forewing the apical portion is disposed more inwardly-oblique, the streaks being longer and narrower, and transversely shorter, and the spot between the middle and lower

median in both sexes has its inner edge always incurved, the two lower portions being also much narrower and dentated outward on both sides, whereas in true *Ismene* the inner edge of the median discal portion is always more or less excurved; the portion between the lower median and submedian, in the female, is dentated outward exteriorly and inward on its opposite side; the outer transverse markings more prominently defined on both wings. Underside with the discal white band as on the upperside.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{4}{10}$  to 3 inches.

*Dry-season brood* (Plate 252, fig. 2, b, c, ♂ ♀).

Male and Female. Upperside also of a deeper ground-colour than in *Ismene*, the discal transverse white band similar to that in the wet-season brood, its contiguous outer sinuous line slender; the basal marks and the submarginal sinuous line less apparent; the outer border of forewing very densely powdered with grey scales, and on the hindwing the inner discal blackish dentated marks are slender and obscure, the outer discal row being obsolescent. Underside much paler than in wet-season brood, and of a somewhat greyish-brown tint; transverse markings as on upperside.

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

HABITAT.—Khasias; Burma; Tenasserim; Siam.

DISTRIBUTION.—The Fabrician type of *Martha*—a small female of the wet-season brood—is recorded from Siam; a male of the wet-season brood in the British Museum Collection was recently taken by Mr. H. N. Ridley on Lankawi Island, Coast of Siam, in January. The type specimens of *attenuata* were taken by Mr. Otto Limborg at Hatseiga and on the road from Naththoung to Paboga, in Upper Tenasserim, during the cold season. Specimens of both sexes of the wet-season brood from the Khasias, which we have identified as this species, are in Col. C. Swinhoe's collection. Capt. E. Y. Watson found it "common at Beeling, Upper Tenasserim" (J. Bombay N. H. Soc. 1888, 5). There are specimens in the British Museum, taken by Capt. Watson at Tiling Yaw in January, April and October, during the Chin Lushai Expedition, and in the Karen Hills in December. Mr. Moti Ram took it at "Ponsekai in Upper Tenasserim" (J. A. S. Beng. 1887, 424). Capt. C. T. Bingham obtained the male of wet-season form at Moulmein in October, and at Houndraw in November; also in the Donat Range and Upper Thoungyeen forests in Upper Tenasserim in October. A female from Tavoy Valley, taken in April, and a male wet-season form from Karen Hills, is in Mr. P. Crowley's collection. Lieut.-Col. C. H. E. Adamson (List, 1897, p. 22) records specimens agreeing with *attenuata* from Rangoon and Moulmein. We possess a female of the dry-season form from Mahataung, taken in February, and also a male



and female dry-season form from Aloungdan, taken in January, by Colonel Adamson. Dr. J. Anderson found both sexes common in the Mergui Archipelago recorded as follows:—"Mergui, December and March; Zediwon, December; Pataw Island, December and January; King Island, February" (J. Linn. Soc. Zool. 1886, 35). A female, identical with the Fabrician type, taken by Dr. Anderson on King Island, Mergui, in March, is also in the British Museum Collection.

Of our illustrations of this species on plate 252, fig. 2, 2a represents a Burmese male and female of the *wet-season* form, and 2b, c male and female of the *dry-season* form.

MALAYAN SPECIES.—*Lebadea Sumatrensis*, Staudinger, Exot. Schmett. p. 142 (1886). L. Martha, Distant, Rhop. Malay. p. 145, pl. 17, fig. 10, 11, ♂ ♀ (1883); de Nicéville, J. A. Soc. Bengal, 1895, p. 415. L. Alankara *et* Martha, Butler, Trans. Linn. Soc. Zool. 1877, p. 541. Upperside more ochreous-brown than in *Paduka*. Male. Forewing with the discal transverse white band composed of shorter longitudinal upper portions and somewhat broader posterior portions, the outer marginal line less sinuous. *Hindwing* with the discal white band less attenuated posteriorly; the inner discal series of black spots more dentate in shape and more distinctly and sharply sinuous inner edged, the marginal black line with a much less sinuous white inner edge. Female with the discal band slender, the outer markings as in male. Expanse, ♂  $2\frac{2}{10}$ , ♀  $2\frac{6}{10}$  inches. *Habitat*. Malay Peninsula; Sumatra.—*Lebadea Paduka* (Lim. Paduka, Moore, Catal. Lep. Mus. E. I. Company, i. p. 179, ♂ ♀ (1857). Upperside brown. Male. *Forewing* with the discal transverse macular white band composed of narrow portions, the portion between the middle and lower medians only being broadly lunate, the two outer marginal sinuous lines very prominent; the apical white patch distinct. *Hindwing* with the discal white band broad anteriorly and much attenuated posteriorly; outer sinuous markings less prominent. Female. Upperside with the discal band on forewing narrower than in male, slender on the hindwing. Expanse ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀ 3 inches. *Habitat*. Borneo; Palawan.—*Lebadea Alankara* (Aconthea Alankara, Horsfield, Catal. Lep. E. I. C. pl. 5, fig. 6, ♂ (1829). Staudinger, Exot. Schmett. pl. 49, fig. ♂. Male (as figured by Horsfield). Female. Upper and underside with the discal white band of the same broad width and the marginal markings, as in the male. Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{7}{10}$  inches. *Habitat*. Java (Horsfield and Fruhstorff).—*Lebadea Wallacei*. Male. Upperside dark brownish-fulvous, the interspaces of the basal marks brighter fulvous; discal band on both wings violaceous-white and very narrow, narrower than in male *Paduka*; the outer sinuous lines also more slender, not prominent, those on the hindwing and their discal interspace being more or less densely pinkish violet-grey. Underside pale ochreous; markings as above. Expanse, ♂  $2\frac{1}{10}$  to  $\frac{4}{10}$  inches. *Habitat*. Java (Coll. Moore); Sumatra (Coll. Grose-Smith (*ex* Coll. Wallace).

Genus MODUZA.

*Limenitis* (part), Felder, Neues Lep. p. 30 (1861). Distant, Rhop, Malay. p. 147 (1883). Semper, Reise Philip, Lep. p. 140 (1889). Westwood. de Nicéville.

*Procris*, Herr. Schæffer, Prod. Syst. Lep. i. p. 23 (1864)—(*pre-occupied*).

*Moduza*, Moore, Lep. of Ceylon, i. p. 47 (1881).

IMAGO.—Male. Wings moderately broad. *Forewing* triangular; costa regularly arched, apex rounded, exterior margin oblique and deeply scalloped; cell long, lower end extending to fully half the wing, closed; first subcostal branch emitted at nearly one-half before end of the cell, second at one-fifth before the end; upper and middle discocellulars disposed very obliquely outwards, middle and lower discocellular nearly of the same length, upper discocellular very short, middle, long, concave at base, lower slender erect and slightly convex; middle median veinlet emitted at a considerable distance before lower end of the cell and opposite to its upper end; submedian vein straight. *Hindwing* short and broad; costa arched from the base; exterior margin obliquely convex and deeply scalloped; precostal vein stout, incurved, emitted opposite the subcostal; cell area broad, open; radial and base of subcostal branch at equal distances from the costal vein; lower median veinlet emitted from opposite base of the radial; two upper medians at some distance beyond. *Body* stout, densely clothed with short hairy scales; palpi porrect, compactly clothed beneath and at the sides, second joint densely hairy above, third joint short, stout, pointed; antennæ with a lengthened very slender club; eyes naked. Sexes alike.

CATERPILLAR.—Cylindrical. Head large, closely set with short stout spines. Segments with a double row of strong spines, or sharp tubercles, clustered at the ends of short stems; on the third segment are two pairs more laterally situated, but much longer; on the fourth segment one pair still longer.

CHRYSALIS.—Suspended vertically; abdominal end slender, with small dorsal tubercles; thorax stout; wing cases dilated laterally; head-piece produced into two foliaceous hammer-shaped processes.

TYPE.—M. *Procris*.

MODUZA PROCRIS (Plate 253, fig. 1, larva and pupa, 1a, b, c, d, ♂ ♀).

*Papilio Procris*, Cramer, Pap. Exot. ii. pl. 106, fig. E. F. ♀ (1777). Fabricius, Ent. Syst. III. i. p. 138 (1793).

*Nymphalis Procris*, Godart, Enc. Meth. ix. p. 404 (1819).

*Limenitis Procris*, Doubleday and Hewitson, Gen. D. Lep. p. 176 (1850). Butler, Catal. Fabr. Lep. B. M. p. 59 (1869). de Nicéville, Butt. of India, etc., ii. p. 163 (1886). Staudinger, Exot. Schmett. pl. 50. Davidson and Aitken, Journ. Bombay Nat. Hist. Soc. 1890, p. 274.

*Limenitis diluta*, Oerther, Etud. Ent. 1896, pl. 10, fig. 176 (*Aberration*).

IMAGO.—Male and female. Upperside, ground colour rich ferruginous-red, the basal area slightly tinged with olivescent yellowish-ferruginous. Cilia alternately black and white. *Forewing* with three black slender bars crossing the cell, and three similar bars below the cell between the basal interspaces of the middle and lower medians; beyond the cell is a large outwardly-oblique pure bluish-white more or less triangulate spot followed by a transverse discal macular band, broadest in the dry-season brood, composed of a series of large broad pure bluish-white spots proceeding from the costa to the posterior margin, of which the upper five are subapical and disposed obliquely outward, the third and fourth being ovate, the upper two very slender and divided by the second subcostal branch, the fifth much the smallest; the next four are disposed somewhat obliquely inward and are much larger, the sixth (or upper) triangularly ovate, the seventh longest and bluntly ovate or somewhat quadrate, the eighth quadrate with its outer edge indented, and the lowest narrow; all these white spots are bordered with black, which colour broadly extends from the cell along the costa and thence decreases hindward; beyond is an outer marginal broad lunularly inner-edged, or occasionally dentate, black waved band, which is traversed by two contiguous slender grey sinuous marginal lines. *Hindwing* with three black slender bars crossing the cell, and a small spot between the basal interspaces of the veins above the cell; a transverse medial discal broad pure bluish-white macular black-bordered band terminating at the submedian, its inner edge somewhat regular and its outer edge scalloped; followed by an outer discal row of black ill-shaped cordate spots, which are more or less obsolescent posteriorly, or occasionally entirely absent, a similar submarginal row of smaller dentate spots, and then a contiguous narrow waved black marginal band traversed by two slender grey sinuous lines. Underside. Basal area bluish or olive-grey, the outer discal area and the apical veins of forewing bright red; discocellular spot on forewing and transverse discal macular band, as above, bluish-white or greyish-white and black bordered; basal bars black, with the interspace between the middle cell bars and of those below the cell on the forewing bright red; marginal markings as above, except that the marginal sinuous lines are violet-grey, and the inner line broadly encompassing the submarginal black spots on the hindwing. *Body* above red; palpi above black, beneath greenish-white; body beneath and legs bluish-grey; antennæ black, tip reddish beneath; eyes bronzy-brown.

Expanse, ♂  $2\frac{6}{10}$  to 3, ♀  $2\frac{8}{10}$  to  $3\frac{2}{10}$  inches.

YOUNG CATERPILLAR.—“Slender, cylindrical, evenly clothed with short spinous tubercles, and of a uniform dark brown colour.”

ADULT CATERPILLAR.—“After last moult. Colour dark brown. Head large, closely set with short, stout simple spines; on the back is a double row of strong spines or sharp tubercles, clustered at the ends of short stems; on the third



segment there are two pairs more laterally situated, but three times as long; and on the fourth segment is one pair longer still."

CHRYSA LIS.—Suspended vertically. Abdominal part slender, with small dorsal tubercles; thorax stout; wing cases much dilated laterally; head produced into two foliaceous hammer-shaped processes, which meet at their ends, leaving a circular hole in the middle. Colour dark brown. Easily passes for a small withered and twisted leaf." (Davidson and Aitken, *l.c.* 274).

HABITAT.—India; Burma; Tenasserim.

DISTRIBUTION.—"Occurs plentifully in India in the region of heavy rainfall. I have specimens from Sikkim, Assam, Silhet, Cachar, Burma, Calcutta, Orissa, and South India" (de Nicéville, *Butt. India*, ii. 164). "Mr. W. Doherty records its capture in the Kali Valley, Eastern Kumaon at from 2000 to 4000 feet elevation" (*J. A. S. Bengal*, 1886, 125). "Only found in the Terai and lowest valleys of Sikkim, where it is not so common as in the Plains. Flies from March till December" (Elwes, *Tr. Ent. Soc.* 1888, 353). Mr. G. C. Dudgeon obtained it in Bhotan. "It is common in the neighbourhood of Calcutta. Fond of settling high up in the trees with wings widely spread open. Larva feeds on *Nauclea Cadamba*" (de Nicéville, *J. A. S. Beng.* 1885, 44). Dr. G. Watt captured it in Manipur (*Ann. Nat. Hist.* 1885, 304). "Mr. J. Wood-Mason took nine males and one female at and around Silcurei, Cachar, between May and August, and a female on Nemoth Peak in September" (*J. A. S. Beng.* 1886, 359). Colonel C. Swinhoe states that it is "common in the Khasias" (MS. Note). Messrs. Davidson and Aitken says, "it is pretty common in the Kanara district of Bombay Presidency during the rains, and even in the dry season in open forest" (*J. Bombay N. H. S.* 1896, 253). Capt. E. Y. Watson records it "from Kathlekan, Mysore, one specimen only being taken" (*J. Bombay N. H. S.* 1890, p. 5). Mr. G. F. Hampson found it "rare on the Nilgiris, at 3000 to 4000 feet" (*J. A. S. Beng.* 1888, 354). Mr. H. S. Ferguson found it "common in Travancore at the foot of the Hills" (*J. Bombay N. H. S.* 1891, 9). In Burma, Capt. E. Y. Watson obtained it "during the Chin-Lushai Expedition of 1889-90 at Tiling, in February and April" (*J. Bombay N. H. S.* 1891, 39); also at "Rangoon and Pougadaw, Upper Burma, in September and October" (*id.* 1888, p. 5). Col. C. H. E. Adamson records it as "very common all over Burma from May to September" (*List.* p. 22). Signor Leonardo Fea took it in Bhamo in November. Dr. N. Manders captured it "in Eastern Karenee, Upper Burma, in January, and found it common everywhere in the Shan States" (*Tr. Ent. Soc.* 1890, 523). "A few specimens were taken by Moti Ram in Tavoy" (*J. A. S. Beng.* 1887, 424). Dr. J. Anderson obtained it at "Minthantoung, Mergui Archipelago, in December" (*J. Linn. Soc. Zool.* 1886, 36).

HABITS OF IMAGO.—According to Mr. L. de Nicéville's observations, made in the neighbourhood of Calcutta, it is "fond of settling high up in the trees with wings widely spread open" (J. A. S. Beng. 1885, 44). In the Sikkim Terai he also observed it as "a high soaring insect, settling often on the outer leaves of the boughs of trees. If disturbed it always returns to the same spot whence it is driven off" (J. A. S. Beng. 1881, 51). Messrs. J. Davidson and E. H. Aitken says, "it flies like *Parthenos virens*, and like it, rests with wings open on the upper side of a leaf" (J. Bombay N. H. S. 1896, 253). Mr. J. A. Betham observes that it "has an elegant sailing flight, and fond of forests, settling on the leaves of trees with widely expanded wings" (J. Bombay N. H. S. 1890, 283).

FOOD-PLANT AND HABITS OF LARVA.—In the Calcutta district, Mr. de Nicéville says it "feeds on *Nauclea Cadamba*" (J. A. S. Beng. 1885, 44). Mrs. E. M. Span "found the larva at Nowgong, Assam, feeding upon the Almond tree. Larva found Sept. 28th, changed to pupa Oct. 1st, the imago emerging Oct. 10th. The larvæ were noticed to move with little jerks" (MS. Note). Messrs. Davidson and Aitken in their very valuable notes on the butterflies of the Kanara district of Bombay, state "we found the larva of *L. Procris* from July to October, feeding on *Mussoenda frondosa*, a plant with white leaves at the ends of the flowering branches, which make it a conspicuous ornament in the jungles. We subsequently found it oftener on *Wendlandia exserta*, another plant of the same order. Of all the larvæ we reared this is in every respect one of the most remarkable. When young it remains on one leaf of the *Mussoenda*, eating it regularly back from the point, but leaving the mid-rib, and as it eats it fringes the eaten margin with its excrement, held together by silk, among which it is absolutely undistinguishable. After the last moult it abandons these strange habits and lives openly on the upper side of the leaf, having changed its form for one in which it is able, apparently, to despise concealment. The pupa easily passes for a small withered and twisted leaf" (J. Bombay N. H. Soc. 1890, 274).

Of our illustrations of this species on Plate 253, fig. 1 represents the larva and pupa from Mr. S. N. Ward's original drawings made in Kanara, S. India; fig. 1a, that of the dry-season male, and figs. 1 b, c, d, male and female of the wet-season form.

#### MODUZA ANARTA (Plate 254, fig. 1, 1a, ♂ ♀).

*Limenitis Anarta*, Moore, Proc. Zool. Soc. 1877, p. 585.

*Limenitis Procris* var. *Anarta*, de Nicéville, Butt. of India, etc., ii. p. 164 (1886).

IMAGO.—Male and female. Upperside uniformly darker than the Indian *Procris*, the red colour darker and duller in hue, the black bordering of the discal white macular band more diffused, the marginal black band on forewing more uniformly



continuous, and its two submarginal grey lines less sinuous; the outer discal black spots on the hindwing are larger and quadrate, the submarginal black dentate spots also larger, and the two submarginal grey lines less sinuous. The white macular band is also comparatively narrower, and the discocellular white spot at end of the cell very small, or quite obsolete.

Expanse, ♂  $2\frac{6}{10}$ , ♀ 3 inches.

HABITAT.—South Andamans.

**MODUZA CALIDASA** (Plate 254, fig. 2 larva and pupa, 2a, b, ♂ ♀).

*Limenitis Calidasa*, Moore, Ann. Nat. Hist. 1858, p. 48. de Nicéville, Butt. of India, etc., ii. p. 164 (1886). Butler, Ann. N. H. 1866, p. 285.

*Moduza Calidasa*, Moore, Lep. of Ceylon, i. p. 48, pl. 25, fig. 1, 1a, ♂, larva and pupa (1881).

IMAGO.—Male and female. Upperside dark olivescent brownish-black, basal area suffused with paler olive-brown. Interspaces between the outer cell-bars on both wings and of the outer bars below the cell of forewing and also the outer discal interspaces dull red. A transverse discal bluish-white macular band, the subapical portions on the forewing being the smallest and disposed somewhat less outwardly-oblique than in *Procris*, the white discocellular spot being absent. *Forewing* also with marginal lunular black border traversed by two slender pale brownish-grey sinuous lines. *Hindwing* also with the black irregular outer edge of the white discal band narrowly bordered with bluish-grey; the outer discal and submarginal row of more or less defined black spots large; marginal slender sinuous lines brownish-grey. Underside. Basal area bluish or olive-grey; outer area pale violet-grey; markings as above; discal macular band black edged. *Forewing* with the outer basal streaks, subcostal veinlets and outer discal interspaces red; marginal sinuous lines distinct. *Hindwing* with the outer discal interspaces suffused red, the submarginal row of black spots small; marginal sinuous lines distinct. *Body* above olivescent black; palpi above and legs brown, beneath white edged with brown; body beneath greyish-white; antennæ black, tip with red beneath.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{6}{10}$  to 3 inches.

CATERPILLAR.—Pale greenish-yellow, or reddish; head spined; the segments armed with short spiny tubercles, and a longer dorsal divergent pair on third and fourth segment. Feeds on *Cinchona*, *Mussoenda*, etc.

CHRYSLIS.—Reddish purple-brown; wing cases dilated; head-piece bifid, twisted and bent outward at the tips.

HABITAT.—Ceylon.

DISTRIBUTION.—“Occurs in the Western, Central, and Southern Provinces of Ceylon; plains and hills up to 4000 feet elevation, in forest land, from May to September, and probably also at other times. It has a floating not very rapid



flight. It is shy, and settles with wings spread on leaves" (Capt. Hutchison). Mr. F. M. Mackwood found it "fairly numerous from February to April from 2000 feet and upwards. Found also at other times" (MS Notes). Capt. Wade took specimens at Kandy.

INDO-MALAYAN SPECIES.—*Moduza Agnata* (Limenitis Procris, Distant, Rhop. Malay. p. 148, pl. 17, f. 1 ♂ (1883). *Limenitis procris subsp. agnata*, Fruhstorfer, Berl. Ent. Zeit. 1896, p. 311).—Male and female. Upperside darker than Indian examples of *Procris*, and even uniformly darker than the Andaman species, *Anarta*; the transverse white macular band is more completely united in its course on the forewing; the black discal bordering is more intense and is more or less confluent with the outer border; the two greyish marginal lines are not sinuous. On the hindwing, the white band is broader in width posteriorly; the outer discal black broad spots more or less forming a united macular band, as do also the submarginal row of spots; the two marginal greyish lines indistinct and not sinuous. Expanse, ♂  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  inches. *Habitat.* Malay Peninsula; Sumatra; Sarawak; Borneo.—*Moduza Neutra* (Limenitis Procris subsp. Neutra, Fruhstorfer, Ent. Nach. 1897, p. 60; Berl. Ent. Zeit. 1896, 4, p. 311. *Biblis Procris*, Horsfield, Catal. Lep. E. I. Company, pl. 8, f. 4. 4a, etc. (1829); *larva* and *pupa*; id. 1857, pl. 5, f. 12).—Male and female. Upperside. Ground colour more intensely red and brighter than Sumatra, Malacca, and Bornean examples; with much smaller subapical white spots, the two below the subcostal only, being present generally in the male; the discocellular white spot beyond the cell is somewhat smaller. Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{8}{10}$  inches. Larva feeds on a species of *Nauclea*. *Habitat.* Java; Lombok; Sumba; Sumbawa.—*Moduza Pausanius* (Limenitis Pausanius, Staudinger, Deuts. Ent. Zeit. 1889, p. 58. *Habitat.* Palawan.—*Moduza Mata* (Limenitis Mata, Moore, Ann. Nat. Hist. 1858, p. 48. Semper, Reisen Phil. Lep. p. 141, pl. 25, fig. 1, 2 ♂ ♀ (1889). *Habitat.* Manilla; Luzon; Mindanao.—*Moduza imitata*, Butler, Entom. Mo. Mag. 1883, p. 54. *Syn.* *Limenitis Æmonia*, Weymer, Ent. Nach. 1883, p. 193. Kheil, Rhop. Nias, p. 24, pl. 3, fig. 12. *Habitat.* Nias Island.—*Moduza Thespias* (Limenitis Thespias, Semper, Reisen Phil. Lep. p. 141, pl. 25, fig. 3, 4 ♂ ♀ (1889). *Habitat.* Mindanao.—*Moduza Urdaneta* (Limenitis Urdaneta, Felder, Wien. Ent. Monats. 1863, p. 110. Semper, R. Phil. Lep. p. 141, pl. 25, fig. 5, 6 ♂ ♀ (1889). *Habitat.* Luzon.—*Moduza Lycone* (Lim. Lycone, Hewitson, l.c., pl. 1, fig. 4, 5 (1859). *Habitat.* Celebes.—*Moduza Pintuyana* (Limenitis Pintuyana, Semper, Verh. Ver. Hamb. 1878, p. 109; R. Phil. Lep. p. 142, pl. 25, fig. 7, 8 ♀ (1889). *Habitat.* Panaon, Philippines.—*Moduza Lymire* (Lim. Lymire, Hewitson, Exot. Butt. Lim. pl. 1, fig. 3, 6 (1859). *Habitat.* Celebes.—*Moduza Libnites* (Lim. Libnites, Hewitson, l.c. pl. 2, fig. 7-9 (1859). Staudinger Exot. Schmett. pl. 50. *Habitat.* Celebes.

MALAYAN ALLIED GENUS.—*Lamasia*. Male. *Forewing* with the apex more produced than in typical *Moduza*, exterior margin more oblique, posterior margin shorter; cell short, open; first subcostal emitted at one-third before end of the cell, second at one-sixth; upper discocellular emitted immediately from subcostal, middle discocellular rather short, extending obliquely inward and acutely angled at its end; lower discocellular absent; middle median emitted about halfway beyond the opposite discocellular. *Hindwing* shorter than in *Moduza*, broader and more convex posteriorly. *Type*. *L. Lyncides*.—*Lamasia Lyncides* (Lim. *Lyncides*, Hewitson, Exot. Butt. ii. *Lim.* pl. 1, fig. 1, 2 (1859). *Habitat*. Celebes.

### Genus NAJAS.

*Najas*, Hübner, Tentamen, p. 1 (1806). Scudder, Proc. Amer. Acad. Arts and Sci. 1875, p. 224.

*Limenitis* (part), Fabricius, Syst. Gloss. (Illiger's Mag. vi. p. 281 (1807). Ochsenheimer, Schmett. Eur. iv. p. 17 (1816). Hübner, Verz. Schmett. p. 44 (1816). Westwood, Gen. D. Lep. p. 274 (1850). de Nicéville, Butt. of India, etc., ii. p. 155 (1886). Leech, Butt. China, etc., p. 176 (1892).

*Limenitis* (Sect. I. part), Felder, Neues Lep. p. 29 (1861).

*Limonitis*, Dalman, Vetensk. Acad. Handl. xxxvii. p. 55 (1816).

*Limonetes* (part), Billberg, Enum. Ins. p. 78 (1820).

*Nymphalis*, Boisduval, Index Meth. Lep. p. 14 (1829); *id.* Edit. 1840, p. 16. Kirby Eur. Butt. p. 43 (1863).

IMAGO.—Male. *Forewing* elongated, subtriangular; costa somewhat straight from the base, apex rounded, exterior margin slightly concave in the middle, waved; posterior margin long and nearly straight; first subcostal branch emitted at fully one-fourth before end of the cell, second at one-tenth before the end, third at two-fifths beyond the end; cell extending to half length of the wing, closed; upper discocellular short, middle discocellular concave, lower discocellular waved and slender; middle median veinlet emitted at some distance before lower end of the cell, middle and lower medians wide apart; submedian vein nearly straight. *Hindwing* rather short, broadly triangularly-ovate; apex and exterior margin oblique and very convex, scalloped; abdominal margin long; cell area broad, open; precostal vein stout, incurved; second subcostal branch and the radial both emitted from the first subcostal at nearly equal distances from the costal vein. *Body* moderately stout; thorax woolly; palpi ascending to above vertex, slender, flattened at the sides, densely hairy above and beneath, apical joint short, conical, and imbedded in hairs; antennæ rather short, thickish, club long, annuli even; eyes naked.

CATERPILLAR.—Head with several nodular tubercles in front, two stout short spinous processes on vertex, and a row of short stout spines down the sides; second segment with two subdorsally disposed very small and short spinous

tubercles; third segment with two large elongated fleshy clavate processes; both covered with irregularly disposed clustered short stout spines; fourth, sixth, eleventh, twelfth and thirteenth segment with two subdorsal short nodular processes, the apex of each set with short stout spines; fifth, seventh, eighth, ninth, and tenth with incipiently developed very slightly similar nodular processes.

CHRYsalis.—Rather stout. Head obtusely pointed in front, vertex convex, thorax raised and convex, medio-dorsum with a raised convex hump, wing cases and segments beneath somewhat arched.

TYPE.—N. Populi.

**NAJAS TRIVENA** (Plate 255, fig. 1, 1a, b, ♂ ♀).

*Limenitis Trivena*, Moore, Entom. Monthly Mag. Nov. 1864, p. 133. de Nicéville, Butt. of India, etc., ii. p. 161 (1886).

IMAGO.—Male. Upperside olivescient fuliginous-brown; cilia alternately black and white; both wings with a transverse discal broad white band, beyond which is a submarginal ill-defined row of pale brownish-ochreous lunules, bordered inwardly by broad black dentate spots, and outwardly by a narrower black lunular line. *Forewing* also with three or four subapical small decreasing white spots; the cell crossed by an outwardly-oblique broad white streak, on each side of which is a black-bordered indistinct pale ochreous-brown streak, and below the cell is a similar coloured ringlet mark. Underside pale yellowish-ochreous, with the broad white band, apical spots and cell streak, as above. *Forewing* also with the interspace of inner cell streak and of the discocellular streak, and before the subapical spot brighter ochreous; mark below the cell externally edged with white; discal band slightly bordered with diffused black.

Female. Upperside as in the male; markings more prominent, the basal area greyish, lower basal mark whitish bordered externally. Underside as in the male. *Body* above dark brown; palpi whitish, edged and tipped with black; legs whitish; antennæ black, tipped with ochreous.

Expanse, ♂  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  inches.

HABITAT.—N.W. Himalayas.

DISTRIBUTION.—Mr. de Nicéville states that "it occurs in the outer ranges of the Himalayas and farthest to the South. I took a single female on the top of Jakko, Simla, and there are numerous specimens of both sexes also from Simla in Col. Lang's collection. Major Marshall has observed it on the wing in the spring on the road down to Sipi from Mashobra, near Simla; I found it common at Kujiah, near Dalhousie, in June, in Chumba, and at Mogul Maidan, Kashmir, in the same month; it occurs also in Murree, and Mr. A. Graham Young has obtained numerous examples



in Kulu in May and June" (Butt. India, ii. 161). Specimens taken on the road to Skardo in July are in Mr. J. H. Leech's collection, also others from Dana, taken by Mr. McArthur in June. Colonel A. M. Lang (Ent. Monthly Mag. 1864, p. 133) says, "I have seen but three specimens of this species in the Himalayas, at 7000 to 8000 feet elevation, in forests of oak (*Quercus incana* and *semicarpifolia*). It has a quick, but sometimes slower, flight, floating in and out of the sunlight."

NOTE.—Mr. de Nicéville states that "in Colonel Lang's collection are two specimens from Lower Kunawur, exactly intermediate between typical *Trivena* and *Ligydes*. Some undoubted examples of *Trivena* have a double series of ochreous spots on the margin of the upperside of both wings, placed, one at the apex, the other at the base of a series of black conical spots between the nervules, showing in this respect an approach to *Ligydes*, though the white discal band is twice as broad as in typical specimens of that species. Other examples of *Trivena* lack the inner series of ochreous spots, and in others again the outer series is white, and the inner also absent. The markings of the underside vary considerably, but the extent and coloration of those on the upperside are the most important" (Butt. Ind. ii. 161).

**NAJAS LIGYES** (Plate 255, fig. 2, 2a, b, ♂ ♀).

*Limenitis Ligydes*, Hewitson, Trans. Ent. Soc. Lond. Nov. 1864, p. 246, pl. 15, fig. 3, 4, ♀.

*Limenitis Trivena*, var. *Ligydes*, de Nicéville, Butt. of India, etc., ii. p. 161, pl. 24, fig. 113, ♂ (1886).

IMAGO.—Male and Female. Upperside dark olivescens-brown. Both wings crossed by a discal interrupted macular white band composed of moderate-sized spots, followed by three subapical small white decreasing spots, a marginal row of indistinctly-defined slender pale brownish-white lunules inwardly bordered with black dentate spots, and an outer marginal black lunular line. *Forewing* also with the cell-marks black, and a white recurved narrow bar before end of the cell. *Hindwing* with the submarginal lunules more sharply defined. Underside dull yellowish-ochreous; the white discal band and cell bar as above. *Forewing* also with slender black cell and basal marks; the outer edges of discal band diffusely black bordered; lower submarginal lunules black. *Hindwing* with the discal band slightly bordered with black speckles. *Body* above brown; palpi above black, beneath white edged with black; fore-legs white; middle and hind-legs pale brownish above and white beneath; body beneath yellowish-ochreous; antennæ black, tip with ochreous.

Expanse, ♂  $2\frac{4}{8}$ , ♀  $2\frac{8}{10}$  inches.

HABITAT.—N.W. Himalayas.

DISTRIBUTION.—This "is not found in the outer ranges of the Himalayas, occurring always in the middle or inner ranges further North. Colonel A. M. Lang took numerous specimens in Upper Kunawur, at Pangi, in June. I obtained a single male at Mogul Maidan, Kashmir, in June, and Mrs. R. Bazett took numerous

specimens at Gulmurg, 9400 feet, in July. The size of the spots in the discal band in these specimens agrees with the figure of *Ligydes*, but the rufous spots are very feebly developed. I also obtained three males in June at Gagangair, Kashmir, and Major Marshall possesses three males from Baba Marishi, 8400 feet, also in Kashmir, and one from Pangri, all taken in June. They differ from typical *Ligydes* in having the discal spots as small as in *Hydaspes*; the development of the rufous spots is inconstant, some of these specimens being quite typical *Ligydes* in this respect, but in none of them are they as fully developed as in *Hydaspes*. Lastly, Major Marshall possesses quite typical specimens of *Ligydes* taken at Kutabul, 8200 feet, and Bayadmalla, 6500 feet, both in Kashmir, and one from Pangri, all these specimens being taken in June" (de Nicéville, Butt. Ind. ii. 162).

Colonel Lang writes (Ent. Mo. Mag. 1868, 35), "This species is represented by only one specimen in Dr. Jerdon's series, from Kashmir, which resembles the dark 'Kunawur,' rather than the light 'Simla' variety; but it differs from all that I have yet seen, in having an exterior transverse series, nearly obsolete in the forewing, but very distinct in the hindwing, of ochreous-red spots, one being placed at the apex of each of the black borders of the submarginal lunules. The underside is also suffused with ochreous red."

Specimens taken at Rampore in May, and in the Goorais Valley in June, are in Mr. J. H. Leech's collection.

#### NAJAS HYDASPES (Plate 256, fig. 1, 1a, b, ♂ ♀).

*Limenitis Hydaspes*, Moore, Proc. Zool. Soc. 1874, p. 270, pl. 43, fig. 2, ♂.

*Limenitis Trivena*, var. *Hydaspes*, de Nicéville, Butt. of India, etc., ii. p. 162 (1886).

IMAGO.—Male and female. Upperside dark rufous-brown, olivescence-brown in some lights; cilia white alternated with black at tip of the veins. Both wings crossed by a discal interrupted narrow white macular band, composed of small oval spots, of smaller size than those in *Ligydes*, followed by two outer rows of more or less prominent ochreous-red lunate spots, the two upper spots of the inner row being larger and ochreous-white, with an intervening parallel submarginal row of black dentate spots and an outer marginal black lunular line. *Forewing* also with a more or less prominent white cell bar and ill-defined black inner cell streaks, discocellular streak and lower basal mark slightly interspaced with dull ochreous red. Underside bright yellowish-ochreous; macular band and basal marks as above; the discal area of forewing and borders of the white macular band and marginal lunular fascia reddish-ochreous; lower portions of the macular band on the forewing edged with black; two or three superposed black submarginal lunules above the posterior angle. *Body* above dark rufous-brown; palpi white, edged and tipped with black; legs ochreous-white; antennæ black, tipped with ochreous.



Expanse, ♂  $2\frac{5}{10}$ , ♀  $2\frac{6}{10}$  inches.

HABITAT.—Kashmir.

DISTRIBUTION.—The late Captain R. Bayne Reed states that it is “common about Kashmir” (MS. Notes). “In Major Marshall’s collection is a single female taken in Astor, Northern Kashmir, in September, and I possess two examples taken by Col. Lockhart’s Mission, one probably near Gilgit, the other in the Astor Valley, which are the only typical specimens I have seen” (de Nicéville, Butt. Ind. ii. 162). Specimens taken in the Goorais Valley in June and September, and in the Scind Valley in June, are in Mr. J. H. Leech’s collection.

NOTE.—The above-described species of *Najas*, namely *Trivena*, *Ligydes*, and *Hydaspes* are placed under one name by Mr. de Nicéville, including also the Turkestan species, *Lepechini*. (Butt. Ind. ii. 160) remarking that “it is extremely variable, and the local races have been described under four different names, each race being typically very distinct, but numerous intermediate forms connect each local race with the next, and I have found it impossible to draw a line of separation anywhere. This species, as a whole, is confined to the Western Himalayas and the mountain ranges to the North and West as far as Turkestan. The extreme Southern form is typical *Trivena*, with the white discal band very broad, and with a single row of diffused small whitish spots on the outer border. Northwards, as the elevation increases, the white band gradually narrows, till in the forests near the snow-line typical *Ligydes* is found, with the discal band less than one-third the width of that in *Trivena*, and distinctly macular throughout, the black veins separating the spots being also distinctly bordered throughout with black. Further North, where the vegetation is sparse, the white band remains narrow, but the white border spots are replaced by much larger yellow spots, and an inner series of equally large yellow spots is developed, separated from the outer series by the series of black lunules, and the ground-colour is paler throughout; this is the form named *Hydaspes*. Further North still, the form which occurs in Turkestan, named *Lepechini*, closely resembles *Hydaspes*; and is very close to our Astor and Gilgit specimens of the latter, but differs in the spots of the discal band being as large as in typical *Ligydes*, the outer border of both wings on the underside is rich ochreous marked only with a diffused darker band in the middle, more prominent in the fore-wing; on the upperside, also, the black spots between the two ferruginous marginal series of spots are not shown in the figure.”

Colonel A. M. Lang (Ent. Mo. Mag. 1868, 35) states that “the food-plant of the larva is *Lonicera tartarica*, which has a wide range in the N.W. Himalayas.”

N. ASIAN SPECIES.—*Najas Populi* (Pap. Populi, Linn. Syst. Nat. I. p. 476 (1758). *Najas Populi*, Hübn. Tent. p. 1 (1806). Scudder, Proc. Amer. Acad. 1875, p. 224. *Var. P. Tremulæ*, Esper, Schmett. I. 2, pl. 114, fig. 3, 4. Pryer,



Rhop. Nippon, p. 23, pl. 5, fig. 7 (1886). Leech, Butt. China, p. 188. *Habitat.* C. E. N. Europe; W. China; Japan.—*Najas Ussuriensis* (Limenitis Ussuriensis, Staudinger, Rom. Mem. Lep. iii. p. 143 (1887). *Habitat.* Amurland.—*Najas Sidiyi* (Limenitis Sidiyi, Lederer, Verh. Z. B. Ges. Wien. 1853, p. 357, pl. 1, fig. 3. *Habitat.* Siberia.—*Najas latifasciata* (Lim. latifasciata, Méne-tr. Schrenck's Reisen Amur. ii. p. 29 (1859). Leech, Butt. of China, etc., p. 181, pl. 17, fig. 4, ♂. *Habitat.* Amur Land; W. China.—*Najas Cleophas* (Lim. Cleophas, Oberthur, Etud. Ent. 1893, p. 16, pl. 6, fig. 83. Leech, Butt. China, iii. p. 455. *Habitat.* Moupin, W. China.—*Najas Prattii* (Lim. Prattii, Leech, Ent. 1890, p. 34; Butt. of China, p. 187, pl. 16, fig. 7 (1892). *Habitat.* C. China.—*Najas Lepechini* (Lim. Lepechini, Erschoff, Lep. Turkistan, p. 14, pl. 1, fig. 10 (1874). *Habitat.* Turkistan.

CHINESE ALLIED GENERA. Genus PUTSUIA.—Male. *Forewing* rather narrow, triangular; costa almost straight, apex obtuse, exterior margin oblique, convex below the apex, slightly uneven, posterior margin short; cell area broad, closed; first subcostal branch emitted at fully one-fourth before end of the cell, second at some distance beyond end of the cell; upper discocellular short, middle deeply concave, lower waved; middle median veinlet emitted at some distance before lower end of cell, upper median much arched. *Hindwing* ovate; exterior margin very convex, slightly scalloped, anal angle convex, abdominal margin short; cell open. *Body* moderately stout; palpi clothed with fine long hairs; antennal club thick; eyes naked. TYPE.—*Putsuia sinensium* (Limenitis sinensium, Oberthur, Etud. Ent. 1876, p. 25, pl. 4, fig. 8. Leech, Butt. of China, etc., p. 179 (1892). *Habitat.* W. and N. China.

Genus SINIMIA.—Male. Wings short, broad. *Forewing* subtriangular; costa slightly arched, apex rounded, exterior margin slightly oblique, scalloped; discocellulars inwardly oblique; upper discocellular extremely short, middle concave, lower deeply concave posteriorly; middle median veinlet emitted at a short distance before lower end of cell. *Hindwing* conically-ovate; anterior margin straight from near the base, apex obtuse, exterior margin slightly convex, scalloped, anal angle rounded; cell open; second subcostal branch and the radial emitted from the first subcostal at twice the distance of the base of the latter from the costal. *Body* slender; palpi slender; densely hairy; eyes hairy; antennæ with an elongated club. TYPE.—*S. Ciocolatina* (Limenitis Ciocolatina, Poujade, Bull. Ent. Soc. France, 1886, p. 207. *Syn.* L. livida, Leech, Entom. Suppl. 1891, p. 27; *id.* Butt. of China, etc., p. 186, pl. 17, fig. 4, ♂. *Habitat.* Moupin, W. China.

Genus CHALINGA.—Male. *Forewing* rather short, triangular; costa almost straight, apex obtusely pointed, exterior margin oblique, even; first subcostal branch emitted at one-sixth before end of the cell, second at one-fourth beyond the cell; upper and middle discocellular outwardly-oblique, middle discocellular long and

concave, lower slender and convex; middle median veinlet at a considerable distance before lower end of the cell. *Hindwing* short, broad, triangulate; apex and exterior margin very convex and oblique; cell closed by a slender lower discocellular veinlet; precostal vein abruptly incurved toward the tip. *Body* robust; palpi stout, flattened, densely clothed with short hairs, apical joint very short and obtuse; antennæ very long, club stout; eyes naked. TYPE.—*Chalinga Elwesi* (Limenitis Elwesi, Oberthur, Bull. Ent. Soc. France, 1883, p. 128; *id.* Etud. Ent. 1884, p. 15, pl. 2, fig. 4, ♂. *Habitat.* E. Tibet; Yunan.

Genus LITINGA.—Male. *Forewing* triangular, exterior margin scalloped; first subcostal branch emitted at one-fourth before end of the cell, second at nearly one-fourth beyond the end of cell; middle discocellular outwardly-oblique, concave, lower discocellular recurved; middle median emitted at some distance before lower end of the cell. *Hindwing* small, triangularly-ovate; anterior margin slightly arched, apex rounded, exterior margin oblique, slightly convex, scalloped, anal angle rounded; cell area rather narrow and long, open; radial emitted from lower subcostal at an equal distance from its base as the latter is from the costal. *Body* moderate; palpi densely but laxly hairy to tip, apex slender; antennal club elongated; eyes naked. TYPE. *Litinga Cottini* (Limenitis Cottini, Oberthur, Etud. Entom. 1884, p. 17, pl. 2, fig. 5, ♂; Leech, Butt. of China, etc., p. 180, ♂ ♀. *Habitat.* E. Tibet; W. China.—*Litinga mimica* (Limenitis mimica, Poujade, Bull. Soc. Entom. France, 1886, p. 200. *Habitat.* Moupin, W. China.

Genus LIMENITIS. Fabricius, Illiger's Mag. vi. p. 281 (1807). *Limenitis* (part), Ochsenheimer. Hubner. Boisduval.—Male. Wings short. *Forewing* subtriangular; costa slightly arched at the base, and thence nearly straight to end, apex obtuse; exterior margin almost erect, uneven; posterior margin straight; first subcostal emitted fully one-third, and second at one-ninth before end of cell; middle discocellular concave, lower undulated, slender; middle median emitted immediately before lower end of cell. *Hindwing* broad, obtusely ovate; costa broadly lobate at base, thence straight to end, exterior margin convex and slightly scalloped, anal angle rounded; precostal vein long, incurved; cell area broad and short, open. *Body* somewhat slender, hairy; palpi somewhat stout, laxly hairy, apex robust, conical; antennæ with a well-formed lengthened club; eyes naked. CATERPILLAR. Somewhat cylindrical. Head slightly cleft and spinous at vertex. Third, fourth, sixth, eleventh, and twelfth segment with two subdorsally disposed elongated fleshy tuberculate spiny processes; other segments with minute similarly disposed spines. CHRYSALIS. With broad, much elevated antero-dorsal prominence and arched thorax; head-piece obtusely bifid. *Type.* L. Drusilla (Camilla, Fabr.).—*Limenitis Drusilla* (Pap. Drusilla, Bergstrasser, Nomen. iii. pl. 67, figs. 5, 6 (1779). Lim. Drusilla, Kirby, Allen's Nat. Hist. Butt. i. p. 146 (1895). Pap. Camilla, Wien.



Verz. p. 172. Hübn. Eur. Sch. i. figs. 106-7. Fabr. Ent. Syst. iii. i. p. 246 (1793). Pap. Lucilla, Esper, Schmett. I. i. pl. 38, fig. 2 (1778). Berge, Schmett. pl. 41, fig. 5 (1842). *Habitat.* Europe.

Genus LADOGA.—*Limenitis*, Leech, Edin. Ency. p. 718 (1815). Samouelle, Ent. Comp. p. 240 (1819). Stephens, Illust. Brit. Ent. i., p. 51 (1828). Horsf. Catal. Lep. E. I. C. pl. 7, fig. 7 (1829). Kirby, Eur. Butt. p. 141 (1895). Tutt, Brit. Butt. pp. 87, 361 (1896). *Limenitis* (part), Ochsenheimer, Schmett. Eur. iv. p. 17 (1816). Hübner, Verz. p. 44 (1816). Boisd. Ind. Méth. p. 14 (1829); *id.* Ed. 1840, p. 16. *Limenitis* (sect. 2, part). Feld. Neues Lep. p. 29 (1861). IMAGO.—Male. *Forewing* subtriangular; costa arched from the base, apex broad and rounded, exterior margin oblique and slightly scalloped; cell less than half length of wing, closed; first subcostal branch emitted at one-third and second branch at a short distance before end of the cell; middle discocellular acutely angled in the middle, lower discocellular recurved, slender; middle median veinlet emitted very close to lower end of cell. *Hindwing* broadly ovate; exterior margin regularly convex and scalloped; abdominal margin rounded; cell open; precostal vein incurved. *Body* moderately stout, finely hairy; palpi slender, finely hairy, apical joint fusiform, hairy; antennæ moderately thick, with a lengthened stout blunt-tipt club; eyes hairy. CATERPILLAR.—Cylindrical. Head cleft at vertex, face and cheeks spined; two subdorsal elongated pointed branched-spines on third, fourth, sixth, eleventh, and twelfth segment; two smaller similar spines on fifth, seventh, eighth, ninth and tenth segment. CHRYSALIS.—With narrow elevated antero-dorsal prominence and arched thorax; head-piece projected and acutely bifid. *Type.* Camilla (Linn.).—*Ladoga Camilla* (Pap. Camilla, Linn. Mus. Ulr. p. 304 (1764); *id.* Syst. Nat. (1767), p. 781. Esper, Sch. I. i. pl. 14, fig. 3. Aurivillius, Kongl. S. V. Akad. Handl. (1882), p. 101. *Limenitis Camilla*, Kirby, Allen's Nat. Hist. Butt. i. p. 142, pl. 23, fig. 3 (1895). *Syn.* P. Prorsa, Linn. Mus. Ulr. p. 303 (1764) (nec Linn. 1758). P. Sibilla, Linn. S. N. (1767), p. 781. *Habitat.* Europe.—*Ladoga angustata* (*Lim. angustata*, Staudinger, Rom. Mém. iii. p. 144). *Habitat.* Amurland.—*Ladoga Japonica* (*Lim. Japonica*, Ménétr. Catal. Mus. Petr. Lep. ii. p. 103 (1857). Leech, Butt. China, etc., p. 185. *Habitat.* Japan.

#### Genus PARATHYMA.

*Athyma* (sect. 2, part), Felder, Neues Lep. p. 32 (1861).

*Limenitis et Athyma* (part), auctorum.

IMAGO.—Male. *Forewing* triangular, costa slightly arched, apex rounded, exterior margin oblique and slightly scalloped; first subcostal branch emitted at two-fifths before end of the cell, second at about one-fifth before the end; middle discocellular bent at the middle, lower discocellular very oblique, slender; cell closed;



middle median veinlet emitted at some distance before lower end of cell. *Hindwing* triangularly ovate; exterior margin very convex, scalloped, anal angle rounded; precostal vein stout, incurved; radial and second subcostal emitted at equal distances from the costal vein. *Body* somewhat slender; palpi rather short, slender, compactly clothed; antennal club slender, lengthened; eyes naked. Sexes alike.

TYPE.—*P. Sulpitia* (Cram.).

NOTE.—One species only of this genus occurs within our region. Some of the species are apparently mimetic; the Japanese *Parathyma Pryeri* being probably a mimic of *Paraneptis Pryeri*.

**PARATHYMA ADAMSONI** (Plate 256, fig. 2, 2a, b, ♂ ♀).

*Athyma Sulpitia*, Adamson, Catal. Burmese Butt. p. 23 (1895), nec Cramer.

IMAGO.—Male and female. Upperside fuliginous-black; markings white; cilia alternated with white. *Forewing* with a white elongated streak extending along lower area of the cell, and partially divided on its upperside by a dentate incision towards its end; a transverse discal widely-interrupted excurved white macular band composed of eight spots, the four upper being outwardly oblique slender elongated streaks, the costal one shortest and indistinct, the fifth a very small round spot between the upper and middle median veinlets, the sixth much larger and ovate, the seventh broader and outwardly indented, the lowest being narrow and linear; beyond are four small decreasing subapical white spots, followed by a submarginal row of ill-defined very slender whitish lunules, the upper ones being almost obsolete, and all inwardly-bordered by dentate lunules and outwardly by a lunular line blacker than the ground-colour. *Hindwing* with a transverse inner-discal macular white band, extending from middle of the costa to submedian veinlet opposite base of the abdomen; beyond which is a submarginal row of small narrow white quadro-lunate marks, their inner edge each being defined by a dentate black spot; the outer discal and marginal interspaces traversed by broad dentate lunules, blacker than the ground-colour. Underside ochreous-red; with white markings as above, but more prominently defined. *Forewing* also with the middle of the disc to the posterior margin suffused with purplish-black; two lower outer marginal rows of white lunules, which latter are suffused with pale pink; the cell streak is indented by a black ringlet mark. *Hindwing* also with five small subbasal black spots on a grey ground-colour; the inner edge of the white discal band and also of the submarginal white dentate lunules distinctly black spotted; the medial discal area traversed by a row of rounded spots (blackish in the male, dusky red in the female), and the outer margin by a pinkish white lunular line. *Body* and palpi above black; beneath, and legs beneath white; legs above, pale brown; antennæ black, tipt with red.

Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{8}{10}$  inches.

HABITAT.—Burma.

Allied to, but distinguishable from the S. China species *P. Sulpitia*, and also from the allied *P. Ningpoana*. Described from specimens taken by Colonel C. H. E. Adamson, who states (l.c. p. 23) that it was "caught frequently near Bhamo during October and November."

CHINESE SPECIES.—*Parathyma Sulpitia* (Pap. Sulpitia, Cram. Pap. Exot. iii. pl. 214, fig. E. F. ♀ (1779). Herbst, Pap. pl. 240, fig. 3, 4 (1798). *Athyma sulpitia*, Walker, Trans. Ent. Soc. Lond. 1895, p. 456. *Syn. Nymph. Strophia*, Godart, Encyc. Méth. ix. p. 431 (1823). *Habitat.* S.E. China; Hong Kong.—*Parathyma Ningpoana* (*Athyma Ningpoana*, Felder, Wien. Entom. Monats. 1862, p. 27; Leech, Butt. of China, etc., p. 174, pl. 17, fig. 5 (?). *Habitat.* Ningpo, N.E. China.—*Parathyma Pryeri* (*Athyma Pryeri*, Moore, Ann. Nat. Hist. 1877, p. 47; Leech, Butt. of China, etc., p. 184, pl. 17, fig. 8, ♂. *Habitat.* Chekiang, N.E. China.—*Parathyma Homeyeri* (*Limenitis Homeyeri*, Tancreé, Entom. Nachr. 1881, p. 120. *Habitat.* Amur Land.—*Parathyma venata* (*Athyma venata*, Leech, Butt. China, etc., p. 183, pl. 17, fig. 6 (1892). *Habitat.* W. China.—*Parathyma disjuncta* (*Athyma disjuncta*, Leech, Entom. 1890, p. 33; *id.* Butt. China, etc., p. 175, pl. 17, fig. 3, ♂ (1892). *Habitat.* W. and C. China.—*Parathyma recurva* (*Athyma recurva*, Leech, l.c. p. 176, pl. 17, fig. 9, ♂ (1892). *Habitat.* Moupin, W. China.—*Parathyma Amphyssa* (*Limenitis Amphyssa*, Ménetr. Sckrenck's Reise Amur Lande, p. 30, pl. 3, fig. 1 (1859); Leech, Butt. China, etc., p. 182. *Habitat.* Amur Land.—*Parathyma Helmanni* (*Lim. Helmanni*, Lederer, Verh. Z. B. Ver. iii. p. 356, pl. 1, fig. 4 (1853). *Habitat.* Amur Land.—*Parathyma Doerriesi* (*Lim. Doerriesi*, Staudinger, Rom. Mem. vi. p. 173, pl. 14, fig. 1. *Habitat.* W. China.—*Parathyma duplicata* (*Lim. duplicata*, Staudinger, Rom. Mem. 1892, p. 172). *Habitat.* Amur Land.

#### Genus TACORÆA.

*Athyma* (sect. 1, part), de Nicéville, Butt. of India, etc., ii. p. 166 (1866).

IMAGO.—Male. *Forewing* triangular; costa regularly arched, apex obtusely pointed, exterior margin oblique, concave in the middle, scalloped; first subcostal branch emitted at fully two-fifths before end of the cell, second at one-eighth before the end; discocellulars outwardly oblique, upper very short, second discocellular obliquely concave; cell open. *Hindwing* short, triangularly ovate; exterior margin convex, scalloped, anal angle obtusely pointed; cell open. *Body* robust; palpi compactly clothed, apex pointed; eyes naked. Sexes alike.

TYPE.—T. Asura.



TACORÆA ASURA.

*Dry-season brood* (Plate 257, fig. 1, 1a, b, ♂ ♀).

*Athyma Asura*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 171, pl. 5a, fig. 1, ♂ (1857); *id.* Proc. Zool. Soc. 1858, p. 17. de Nicéville, Butt. of India, etc., ii. p. 168 (1886).

IMAGO.—Male and female. Upperside dark fuliginous-black; cilia alternated with white; markings creamy-white. *Forewing* with a narrow white claviform cell streak and a triangular spot beyond its end; a transverse discal excurved series of white spots, the three anterior elongated and narrow, the uppermost more or less obsolescent, the fourth smallest, the fifth larger and rounded, sixth larger still and oval, the seventh broad, quadrate and indented at the sides, the eighth narrow; a subapical series of three small lunate spots, followed by a submarginal row of narrow excurved lunules with diffused black inner edges, and then a marginal slightly-defined black pale-bordered lunular line; a slightly-defined black ringlet-mark below the cell. *Hindwing* with a broad transverse discal white band and an outer narrower macular band, the latter composed of almost round spots in the male, and of somewhat scutiform spots in the female, each having a black central spot; beyond is a marginal slightly-defined pale-bordered black lunular line. Underside bright ochreous-red, white markings as above, but more prominent. *Forewing* also with the posterior border pale fuliginous, a black ringlet-mark with dull red centre and pale border below the cell; a submarginal row of black-centred lilacine-white spots, and a marginal partially-duplex row of narrow white lunules. *Hindwing* also with a narrow subbasal white band extending from base of costal vein to the apex; the black spotted band lilacine-white, followed by an inner marginal row of somewhat scutate lunules, and an outer marginal row of narrow lunules; abdominal margin bluish-grey. *Body* above black; thorax glossed with metallic golden-green; a bluish-white band across base of abdomen; palpi above black, below whitish edged with black; body beneath and legs bluish-grey; antennæ black, tip beneath reddish.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀ 3 to  $3\frac{2}{10}$  inches.

*Wet-season brood* (Plate 257, fig. 1, c, d, e, ♂ ♀).

Male and female. Somewhat larger than the *dry-season brood*. Upperside ground colour blacker; markings similar, but of a darker creamy-white. *Forewing* with the cell-streak slender, the spot beyond smaller, its intervening space being defined by a slightly apparent black-edged transverse recurved pale ochreous-red streak, a similar discocellular streak of a dusky red colour also present beyond the spot, both being most apparent in the female; the upper discal series of spots narrower and the lower smaller; the submarginal lunules more slender. *Hindwing* with the inner band and the outer black-spotted band both narrower than in dry-



season brood. Underside much darker ochreous-red than in the dry-season brood, markings narrower, as on upperside.

Expanse, ♂ 3, ♀  $3\frac{6}{10}$  inches.

HABITAT.—Western Himalayas ; Nepal ; Assam ; Khasia Hills ; Cachar ; Burma ; Tenasserim.

DISTRIBUTION.—This is a somewhat rare species. “ Mr. A. Graham Young has taken it in Kulu. I found it sparingly in October in a wooded stream below Kotgarh ; Capt. A. M. Lang has taken it in Masuri in June and August ” (de Nicéville, Butt. Ind. ii. 168). We possess specimens of the dry-season form from the Western Himalayas, and also both sexes from Nepal, taken by the late Major-General G. Ramsay. The Rev. J. H. Hocking records it as “ very rare in Kulu ” (P. Z. S. 1882, 241). “ Mr. J. Wood-Mason obtained the wet-season form at Irangmara, Cachar, during July ; it occurs also at Sibsagar in Upper Assam (S. E. Peal), and in the Khasia Hills ” (de Nicéville, Butt. Ind. ii. 168). Both sexes of the dry-season form from Assam are in Mr. P. Crowley’s collection. Colonel Swinhoe has received the wet-season form commonly from the Khasias, Shillong and Cherra Punji. Colonel C. H. E. Adamson obtained it in the “ Arakan Hills in March, and at Bhamo in Upper Burma ” (List, p. 22). Col. C. T. Bingham took it in the Thoungyeen Valley, Upper Tenasserim, in May. Mr. Moti Ram obtained “ two females in Tavoy ” (J. A. S. Bengal, 1887, 423).

**TACORÆA IDITA** (Plate 258, fig. 1, 1a, ♂).

*Athyma Idita*, Moore, Proc. Zool. Soc. Lond. 1858, p. 16, pl. 51, fig. 3, ♂. Distant, Rhop. Malay. p. 160, pl. 16, fig. 9, 10, ♂ ♀ (1883). de Nicéville, Butt. of India, ii. p. 168 (1886).

IMAGO.—Male and female. Upperside purpurescent-black ; markings bluish-white ; cilia alternated with white. *Forewing* with a narrow white claviform streak from base of cell and a large triangulate spot beyond its end ; a transverse discal excurved series of seven spots, the two upper elongate, the two next short and small, the next larger and round, the two lower quadrate ; three small subapical lunular spots ; a submarginal row of slender excurved lunules, the lowest being most distinct, and a very indistinct marginal pale lunular line. *Hindwing* crossed by an inner discal white band and a narrower submarginal row of seven spots, of which latter the upper two or three are centred with a black dot ; a very indistinct pale marginal lunular line. Underside purplish-red, with pinkish-white markings, as above. *Forewing* also with slender black cell streaks, a black ringlet-mark below the cell, and black spots inwardly bordering the submarginal lunules. *Hindwing* also with a curved subbasal white band, and two marginal rows of slender white lunules ; abdominal margin bluish-grey. *Body* above black, base of abdomen with a

broad bluish-white band; palpi above black, beneath white with black streaks; body beneath and legs bluish-grey.

Expanse, ♂  $2\frac{5}{10}$ , ♀ 3 inches.

HABITAT.—Mergui Archipelago; Malay Peninsula; Sumatra; Borneo.

DISTRIBUTION.—Dr. J. Anderson obtained two males at “Minthantoung, Mergui, in December” (J. Linn. Soc. Zool. 1886, 37). Mr. W. L. Distant records it from Province Wellesley, Malacca, Malay Peninsula. We possess specimens from Malacca, and also from Sarawak, Borneo. Mr. L. de Nicéville states that “in N.E. Sumatra it is very rare; being a conspicuous insect when at rest with folded wings, in consequence of the beautiful coloration and markings of the underside” (J. A. S. Bengal, 1895, 417).

CHINESE ALLIED SPECIES.—*Tacoræa Elwesi* (*Athyma Elwesi*, Leech, Butt. of China, etc., p. 170, pl. 17, fig. 7, ♂ (1892). *Habitat.* W. and C. China.

### Genus TATISIA.

*Athyma* (sect. 1, part), de Nicéville, Butt. of India, etc., ii. p. 166 (1886).

IMAGO.—Male. *Forewing* triangular; costa slightly arched, apex rounded, exterior margin oblique and slightly scalloped, posterior margin rather short; first subcostal branch emitted at two-fifths before end of the cell, second at one-fifth before the end; middle discocellular concave, lower slender, recurved; two upper medians emitted at some distance beyond lower end of the cell; minute *Androconia* or scent-scales (as described on page 142) present, chiefly found upon the basal area of the upperside between the median and submedian vein. *Hindwing* short, conical; exterior margin oblique, convex anteriorly, scalloped, anal angle obtuse. *Body* moderately robust; palpi rather laxly scaled below, hairy above, apex pointed; antennæ with a slender elongated club; eyes naked. Sexes alike.

TYPE.—T. Kanwa.

#### TATISIA KANWA (Plate 258, fig. 2, 2a, b, ♂ ♀).

*Athyma Kanwa*, Moore, Proc. Zool. Soc. 1858, p. 17. pl. 51, fig. 2. de Nicéville, Butt. of India, etc., ii. p. 169 (1886).

IMAGO.—Male and female. Upperside olivescient brownish-black, with blacker intervening patches between the veins; markings bluish-white; cilia alternated with white. *Forewing* with a bluish-white narrow slightly clavate entire streak along lower area of the cell, followed by a large elongated-triangular spot beyond the discocellular veinlets; a transverse discal excurved series of six spots, the three upper obliquely subapical, the third sometimes small or obsolete, the others inwardly oblique, the

fourth being larger and rounded, the fifth transversely narrower and laterally indented, the sixth smaller and narrow; followed by a submarginal row of ill-defined slender excurved lunules, and then by a pale brownish marginal line. *Hindwing* crossed by an inner discal bluish-white band and a narrower outer discal macular band, followed by a submarginal pale brownish lunular line. Underside dark fuliginous-brown, with blackish intervening patches between the veins; markings bluish-white, as above; abdominal margin bluish-grey. *Body* and palpi above black; thorax and abdomen with a bluish-white band; body and palpi beneath, and forelegs greyish-white; middle and hindlegs pale brownish-grey.

Expanse, ♂ ♀  $2\frac{2}{10}$  to  $2\frac{8}{10}$  inches.

HABITAT.—Assam; Khasia and Naga Hills; Burma; etc.

DISTRIBUTION.—A female from Assam and one from the Khasias is in Mr. W. Rothschild's collection. Col. C. Swinhoe records it as "rare at Shillong, Khasias" (Tr. Ent. Soc. 1893, 283). Col. C. H. E. Adamson obtained two males and one female in Upper Burma in the cold weather, one being bred from a chrysalis found in November" (List, p. 23). He also possesses a female taken in Chindwin in September. Mr. W. Doherty took several males in the Karen Hills, East Pegu, at 4000 to 5000 feet elevation" (P. Z. S. 1891, 277). Col. C. T. Bingham obtained both sexes in the Meethalauh Valley in December, and in the Yunzaleen Valley in November. Mr. Moti Ram took specimen in Tavoy (J. A. S. Beng. 1887, 423). It also occurs in the Malay Peninsula. A male from Sumatra is in Mr. P. Crowley's collection. Mr. L. de Nicéville records it as "very rare in N.E. Sumatra" (J. A. S. Beng. 1895, 418). A female from Nias Island is in Mr. P. Crowley's collection. Messrs W. B. Pryer and D. Cator have taken both sexes in Sandakan, N. Borneo, in February and July. Mr. E. Bartlett has obtained it at Sarawak.

#### Genus THARASIA.

*Athyma* (sect. 1, part), de Nicéville, Butt. of India, etc., ii. p. 166 (1886).

IMAGO.—Male. Forewing subtriangular; costa arched, apex obtuse, exterior margin slightly scalloped, posterior margin long; first subcostal branch emitted at one-third before end of the cell, second at about one-eighth before the end; upper discocellular short, starting from the subcostal at fully two-fifths from the base; second discocellular inwardly-oblique, and slightly angled; cell open; minute *Androconia* or scent-scales (as described on page 142) are present chiefly upon the basal area of the upperside between the median and submedian vein. *Hindwing* triangular; costa much arched, apex obtuse, exterior margin very oblique, slightly convex and scalloped; anal angle obtusely pointed;



cell area broad. *Body* robust; palpi obtuse at the apex, compactly clothed below; antennæ with an elongated slender club; eyes hairy. Sexes alike.

TYPE.—T. Jina.

**THARASIA JINA** (Plate 259, fig. 1, 1a, b, ♂ ♀).

*Athyma Jina*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 172, pl. 5, a., fig. 3, ♂ (1857); *id.* Proc. Zool. Soc. 1858, p. 18. de Nicéville, Butt. of India, etc., ii. p. 169 (1886).

IMAGO.—Male and female. Upperside fuliginous-black, darkest between the veins; markings creamy-white; cilia alternated with white. *Forewing* with a broad creamy-white entire clavate streak along lower area of the cell; a transverse discal excurved series of seven spots, the three upper being elongate and narrow, the fourth small and narrow, the fifth large and narrowly oval, sixth broad and indented on both its sides, the lowest narrow; beyond is a row of three small subapical spots, followed by a submarginal row of ill-defined slender lunules, and then by a still less-defined marginal line. *Hindwing* crossed by an inner-discal broad band, and an outer macular band composed of rather broad lunate spots, followed by an indistinct pale brown marginal lunular line. Underside bright ferruginous; markings as above. *Forewing* also with the posterior margin blackish; marginal lunular line distinct. *Hindwing* also with a broad basal white band, and distinct marginal lunular line. *Body* and palpi above black, abdomen with a bluish-white band; palpi beneath white, streaked with black; body and legs beneath bluish-grey; legs above sullied white.

Expanse, ♂  $2\frac{8}{10}$ , ♀  $3\frac{2}{10}$  inches.

HABITAT.—Nepal; Sikkim.

DISTRIBUTION.—We possess specimens from the late General G. Ramsay's collection taken during his residency at Katmandu, Nepal. Mr. H. J. Elwes records it as "not a common species in Sikkim, and, as far as I know, confined to the zone of heavy forest between 6000 to 8000 feet elevation, where I have taken it in July" (Tr. Ent. Soc. 1888, 353). Mr. L. de Nicéville records it as also "occurring in Sikkim in April" (Sikkim Gaz. 1894, 141).

CHINESE SPECIES.—*Tharasia Jinoidea* (*Athyma Jina*, Leech, Butt. of China, etc., p. 172). Comparatively smaller than Sikkim *Jina*. Upperside also of a blacker ground-colour; all the markings are clear-white, not sullied as in *Jina*; the claviform cell-streak and the transverse markings are comparatively narrower, except the inner band on the hindwing, which is somewhat broader. Expanse,  $2\frac{4}{10}$  to  $2\frac{6}{10}$  inches. *Habitat*.—C. and W. China.

*Tharasia Fortuna* (*Athyma Fortuna*, Leech, Tr. Ent. Soc. 1889, p. 107, pl. 8, fig. 1, 1a, ♂ ♀; *id.* Butt. of China, etc., p. 173, pl. 17, fig. 2 ♂. *Habitat*.—C. China.

*Tharasia diffusa* (*Athyma diffusa*, Leech, Butt. of China, etc., p. 174, pl. 17, fig. 1, ♂ (1892). *Habitat*.—C. China.

### Genus CHENDRANA.

*Athyma* (sect. 1, part), de Nicéville, Butt. of India, etc., ii. p. 166 (1886).

IMAGO.—Male. *Forewing* subtriangular; costa well arched from the base; apex obtusely pointed, exterior margin oblique, slightly uneven, posterior margin rather short; cell area rather broad, open; first subcostal branch emitted at fully one-third before end of the cell, second at one-eighth before the end; second discocellular outwardly oblique, concave. *Hindwing* conically-ovate; apex rounded, exterior margin very convex, anal angle rounded, abdominal margin short; cell area broad, open. *Body* moderately robust; palpi slender, laxly clothed below, apical joint somewhat slender, pointed; antennæ slender; eyes naked. Sexes alike.

TYPE.—C. Pravara.

### CHENDRANA PRAVARA (Plate 259, fig. 2, 2a, b, ♂ ♀).

*Athyma Pravara*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 173. pl. 5, a, fig 4, ♂ (1857); *id.* P. Z. S. 1858, p. 19. Distant, Rhop. Malay. p. 160, pl. 16, fig. 11, ♀ (1883). de Nicéville, Butt. of India, etc., ii. p. 170 (1886).

IMAGO.—Male and female. Upperside purpurescent-black; markings bluish-white. Cilia slenderly alternated with white. Forewing with an elongated entire clavate white streak along lower half of the cell; a transverse discal excurved series of, usually, seven spots, the two upper somewhat elongate and quadrate, the third small, fourth either minute or sometimes obsolete, fifth much larger and broadly ovate, the sixth smaller and slightly indented on its sides, the lowest narrow; beyond is a submarginal row of slender excurved lunules, and a very indistinct pale brown marginal line. *Hindwing* crossed by an inner-discal white band and a narrower outer recurved lunular band, followed by a submarginal pale brown lunular line. Underside pale purpurescent fuliginous-brown, with darker patches between the veins; markings as above, bluish-white. *Hindwing* also with an ill-defined narrow basal whitish band, and broader submarginal pale lunular line; abdominal margin bluish-grey. *Body* and palpi above black; thorax and abdomen with a bluish-white band; palpi and legs beneath greyish-white; legs above pale brownish-grey; body beneath bluish-grey; antennæ black, tip reddish.

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

HABITAT.—Assam; Khasia and Naga Hills; Cachar; Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION.—“This species appears to be not uncommon towards the North-Eastern frontier of India, occurring in Assam, Naga Hills, and Cachar” (de Nicéville, *l.c.* 170). Mr. J. Wood-Mason obtained “two males at Irangmara, Cachar, in July” (J. A. S. Beng. 1886, 359). Colonel C. Swinhoe notes it as “rare at Cherra Punji, Khasias” (Tr. Ent. Soc. 1893, 283). Captain E. Y. Watson obtained “a single specimen at Tiling in March, during the Chin-Lushai Expedition of 1889-90” (J. Bombay N. H. S. 1891, 40). Colonel C. H. E. Adamson records “one specimen from Bhamo, taken in June, and one from Tenasserim, taken in February” (List, p. 23), he also possesses a female taken at Kathapa in January. Mr. W. Doherty took specimens at “Margharita, and in the Karen Hills at 4000 to 5000 feet” (P. Z. S. 1891, 277). Mr. Moti Ram obtained “a single male at Ponselai, Tenasserim” (J. A. S. Beng. 1887, 423). It also occurs in Sumatra, Java, Banca, and Borneo.

PHILIPPINE ALLIED SPECIES.—*Chendrana Alcamene* (*Athyma Alcamene*, Felder, Wien. Ent. Monats, 1863, p. 118. Semper, Reisen Philip. Lep. p. 139. pl. 27, fig. 8, 9, ♀ (1889). *Habitat*.—Mindanao; Phil. Isles.

#### Genus ATHYMA.

*Athyma*, Westwood, Gen. D. Lep. ii. p. 272 (1850). Moore, Proc. Zool. Soc. 1858, p. 11. Distant, Rhop. Malay. p. 156 (1883). de Nicéville, Butt. India, ii. p. 165 (1886).

*Athyma* (sect. 1, part), Felder, Neues Lep. p. 31 (1861).

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

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

IMAGO.—Male. Wings short, rather broad. *Forewing* subtriangular; costa regularly arched, apex obtuse, exterior margin slightly oblique, scalloped, posterior margin recurved; costal vein extending to a little beyond middle of the margin; first subcostal emitted at one-third before end of the cell, second at one-sixth before the end, third at about half beyond the cell and extending to the apex; upper discocellular almost obliterated, second discocellular short and outwardly concave; cell area wide, open; minute *Androconia* or scent-scales, but very few in number, are present, chiefly upon the basal area between the median and submedian vein, these scales are elongated, narrower at the base than those in *P. Nefte*, with rounded ciliated apex, and basal hook on each side longer than the shaft. *Hindwing* short, broad, triangularly-ovate; costal margin convex, apex and exterior margin convex and strongly scalloped, anal angle rounded; precostal vein incurved; radial emitted from second subcostal, at an equal distance from base of the first subcostal as the latter is from base of the costal; cell area short, broad, open. *Body* robust; palpi slender, not quite reaching the vertex, compactly squamous at the sides, hairy at the base beneath and on second joint above, apex short, pointed; antennæ with a long slender club; eyes naked. Sexes alike.



CATERPILLAR.—Cylindrical, segments of equal thickness; head larger than second segment, face, sides, and vertex spined; body armed with a subdorsal row of long branched-spines and two lateral rows of much shorter branched-spines, those of the 5th, 7th, 9th, 11th and 13th of the subdorsal row shorter than the others.

CHRYSLIS.—Somewhat elongate; wing cases prominent; with an elevated forward-projecting conical antero-dorsal prominence and a conical thoracic prominence; head-piece projected in front and acutely bifid.

TYPE.—A. Perius (Leucothoë).

**ATHYMA PERIUS** (Plate 260, fig. 1, larva and pupa, 1a, b, c, d, ♂ ♀).

- Papilio Perius*, Linnaeus, Syst. Nat. x. p. 471 (1758); *id.* Mus. Ulricæ, p. 261 (1764). Edit. xii. 1, pt. 2, p. 766 (1767).
- Athyma Perius*, Aurivillius, Kongl. S. V. Akad. Handl. xix. pp. 68, 69 (1882). Distant, Rhop. Malay. p. 157, pl. 16, fig. 2, ♂ (1883). de Nicéville, Butt. of India, etc., ii. p. 166, pl. 20, fig. 89, ♀ (1886).
- Papilio Leucothoë*, Linn. Syst. Nat. x. p. 478 (1758). Clerck, Icones Ins. iii. (inedit.), pl. 5, fig. 4, *dexteræ*. Fabricius, Syst. Ent. p. 508 (1775).
- Acca Leucothoë*, Hübner, Verz. Schmett. p. 44 (1816).
- Nymphalis Leucothoë*, Godart, Enc. Méth. ix. p. 430 (1823).
- Biblis Leucothoë*, Horsfield, Catal. Lep. Mus. E. I. Company, pl. 8, fig. 3, 3a, *larva* and *pupa* (1829).
- Limnitis Leucothoë*, Boisduval, Spec. Gen. pl. 4, fig. 5 (1836). Westwood, Donovan's Ins. China, p. 65, pl. 35, fig. 3 (1842).
- Athyma Leucothoë*, Westwood, Gen. D. Lep. p. 273 (1850). Moore, Catal. Lep. Mus. E. I. C. i. p. 170, pl. 5, fig. 11, 11a, *larva* and *pupa* (1857). Butler, Catal. Fabr. Lep. Brit. Mus. p. 61 (1869). Staudinger, Exot. Schmett. pl. 51.
- Papilio Hylas*, ♀, Linn. Syst. Nat. x. p. 486 (1758).
- Papilio Erosine*, Cramer, Pap. Exot. iii. pl. 203, fig. E. F. (1779). Herbst, Pap. pl. 240, fig. 5, 6 (1798).
- Najas Erosine*, Hübner, Samml. Exot. Schmett. i. pl. 63 (1806-16).
- Papilio Leucothea*, Fabr. Spec. Ins. ii. p. 96 (1781).
- Papilio Polyxena*, Donovan, Ins. China, pl. 37, fig. 4 (1799).

IMAGO.—Male and female. Upperside dark fuliginous-black; markings white; cilia alternated with white. *Forewing* with a white basal streak and two spots within the cell; a subtriangular larger spot at end of the cell; a transverse discal excurved series of seven spots, the two upper elongated and narrow, the others increasingly oblong, the third and fourth smallest; followed by a submarginal undulated row of six very small more or less lunate spots, the upper five being disposed obliquely outward, and the lower inward, the upper spot sometimes, and the lower always, duplex; beyond is a marginal row of very indistinctly-defined slender sullied-whitish lunules. *Hindwing* crossed by a broad white inner-discal band and a narrower submarginal macular band, the latter being inwardly bordered by a row of small distinct black spots; a marginal row of very slender sullied-white lunules. All these markings are larger and broadest in the dry-season brood.

Underside bright yellowish-ochreous; markings as above, but all purer white, more or less margined with black; marginal lunules distinctly virescent-white and externally black-edged. *Forewing* also with the posterior border interspaced with diffused pale purpurescent-black patches, and a black ringlet-mark below the cell. *Hindwing* also with a subbasal white band edged with black along the precostal vein, this band also extending hindward along the abdominal margin; the discal band more or less margined on each side with black, the submarginal band entire, with the black spots disposed within its inner edge. *Body* and palpi above black; thorax with two white bands and abdomen with white segmental bands; collar and vertex ochreous; palpi beneath and legs greyish-white; antennæ black, its basal joint white beneath.

Expanse,  $2\frac{2}{10}$  to 3 inches.

CATERPILLAR.—Cylindrical; segments of equal thickness; head larger than second segment, face, sides and vertex spined; segments armed with a subdorsal row of long branched-spines and two lateral rows of much shorter branched-spines, those on the 5th, 7th, 9th, 11th, and 13th segment of the subdorsal row shorter than the others. Head black, with red spines; body pale green, beneath and legs reddish, spines red.

CHRYsalis.—Somewhat elongate; brown, richly gilt wing cases prominent; with an elevated forward-projecting conical antero-dorsal prominence and a conical thoracic prominence; head-piece projected in front and acutely bifid.

HABITAT.—India; Burma; Tenasserim; Malay Peninsula; Siam, &c.

DISTRIBUTION WITHIN OUR AREA.—“This is one of the commonest as well as the most widely distributed species of the genus. It occurs throughout the outer ranges of the Himalayas and in Eastern, South-Western and Southern India to Travancore—but not in Ceylon—throughout Burma and the Malay Peninsula” (de Nicéville, Butt. Ind. ii. 167). From the Western Himalayas Col. A. M. Lang records its capture at “Kasawli, April to October” (MS. Notes). Capt. H. B. Hellard took it in “Simla, Masuri, and Kashmir, June to October” (MS. Notes). Mr. W. Doherty records it from “Kumaon generally, from 1000 to 6000 feet elevation; unlike the other species of *Athyma* it prefers open meadows to forests” (J. A. S. Bengal, 1886, 125). According to Mr. H. J. Elwes it is much rarer in Sikkim than in the N.W. Himalayas and Khasia Hills. Mr. Möller notes it as being found up to 3000 feet all the year round, but I have never observed it myself” (Tr. Ent. Soc. 1888, 353). Mr. G. C. Dudgeon has taken it in Bhotan. Mr. L. de Nicéville obtained “two specimens taken in the Calcutta District in the cold weather” (J. A. S. Beng. 1885, 45). Mr. J. Wood-Mason took “twenty-four male and eleven female specimens at Silcuri in Cachar between April and September” (J. A. S. Beng. 1886, 359).



In Southern India, Col. C. Swinhoe took it in "Belgaum and at Khandalla, in December, in hilly places" (P. Z. S. 1885, 130). Mr. E. H. Aitken says "this is common at Khandalla, Lanowlie and Matherhan, but I did not find it last March at Mahableswar, which is 2000 feet higher. It does not occur on the Plains. I found its larva at Matheran in March feeding on *Glochidion lanceolatum*, one of the commonest trees on the Hill. It lays its eggs by preference on the young shoots that come up from the roots" (J. Bombay N. H. S. 1886, 134). "It is not at all a common species in Kanara, but very abundant everywhere on the Hills further North" (J. Davidson and E. H. Aitken, *id.* 1890, 275). "It appears during the latter part of the rainy season and probably for some time after, if it does not last till May. It is more like a *Neptis* in its ways than *Mahesa* and *Selenophora*. The larva feeds commonly on *G. lanceolatum* and *velutinum*" (*id.* l.c. 1896, 253). Dr. J. Shortt obtained it on the Shevaroy Hills (Notes). Mr. G. F. Hampson took it on the Nilgiris, at 3000 to 7000 feet elevation (J. A. S. Beng. 1888, 354). Mr. H. S. Ferguson records it as "rather rare in Travancore at 2000 to 4000 feet" (J. A. S. Beng. 1891, 9).

In Burma, Capt. E. Y. Watson obtained it during the Chin-Lushai Expedition of 1889-90 at "Pauk and Tiling, from December to April. Not common" (J. Bombay N. H. S. 1891, 40). Col. C. T. Bingham took it at Chittagong in October, and at Yetho in August. Col. C. H. E. Adamson records it as "very common in Burma, from May to September" (List, Burm. Butt. p. 22). Signor L. Fea took it at Meteleo in August and in Bhamo in November. Dr. N. Manders records it as "common everywhere in the Shan States, Upper Burma" (Tr. Ent. Soc. 1890, 523). Mr. Moti Ram obtained it in "Tavoy and Ponekai, Tenasserim" (J. A. S. Beng. 1887, 423). Dr. J. Anderson found it "common in the Mergui Archipelago in December and January" (J. Linn. Soc. Z. 1886, 37).

DISTRIBUTION OUTSIDE OUR AREA.—It also occurs in N.E. Sumatra, where it is "common everywhere from near the sea and extending to the Central Plateau. It was very plentiful before the advent of tobacco cultivation, but is now somewhat rare in those districts. As soon as these are left behind it appears everywhere on roads and the margins of small forest" (de Nicéville, J. A. S. Beng. 1895, 417). Dr. Horsfield obtained it and reared the larva in Java. The late Consul Robert Swinhoe obtained it in Hainan and Formosa. It also occurs at Chentaboom in Siam, and in S. China, and Mr. J. J. Walker records it as "very plentiful in Hongkong in December, but already getting very worn, and it remained on the wing three or four weeks. It reappeared in the following March, but was not nearly so common as before. It frequents sunny road-sides, and has a strong and graceful flight" (Tr. Ent. Soc. 1895, 456).

HABITS OF IMAGO.—Capt. Mortimer J. Slater, in his MS. Notes, p. 152, observes,



“This insect and its allies hover and flit in the air, especially in little open places, as where two paths meet, and over pools of water, &c.; common at Dacca.” Mr. W. Doherty says, “Unlike the other species of *Athyma* observed in Kumaon, it prefers open meadows to forests” (J. A. S. Beng. 1886, 125); and again, as observed in Sumba, “This species occurs in open meadows, unlike all its allies” (*id.* 1891, 175). The late Consul R. Swinhoe observed it at Takow, Formosa, “Common on bushes and grassy places, fluttering and sailing through the air. It sucks the sap of wounded trees. The males fight for the females” (P. Z. S. 1866, 359).

FOOD-PLANTS OF LARVA.—Messrs. Davidson and Aitken found the larva at Matheran, in Bombay, feeding on *Glochidion lanceolatum* and *velutinum*. The female laying its eggs by preference on the young shoots that come up from the roots” (J. Bombay N. H. S. 1886, 134). In Java, according to Dr. Horsfield, “the larva is found in April feeding on a species of *Phyllanthus*, bearing the native name of Dempul-lolot.”

MIMICRY.—Mr. L. de Nicéville observes that “it is doubtless a good mimic of our commonest species of *Neptis* (*N. Leucothoë*), together with which it is always found, and from which it is not easily differentiated on the wing, but, if pursued, it at once assumes its stronger and bolder proper *Athyma*-like flight” (Butt. of N.E. Sumatra, J. A. S. Bengal, 1895, 417).

### Genus CONDOCHATES.

*Athyma* (part), Westwood. de Nicéville.

IMAGO.—Male. *Forewing* subtriangular; costa very slightly arched, apex rounded, exterior margin very slightly concave and slightly scalloped, posterior margin long; first subcostal branch emitted at two-fifths before end of the cell, second at one-fifth before the end; middle discocellular concave posteriorly, lower discocellular slender, slightly oblique; middle median emitted at a short distance before lower end of the cell; minute *Androconia* or scent-scales, similar to those in *Pantoporia*, are present, but very few in number, and found chiefly upon the area between the median and submedian vein of the upperside. *Hindwing* triangular, exterior margin oblique, slightly convex, scalloped, anal angle obtuse; cell area very broad, open. *Body* moderately robust; palpi slender, laxly clothed, apex pointed; antennæ with a well-formed club; eyes hairy; sexes alike.

CATERPILLAR.—Elongated. Head small, nodular in front, two frontal short nodular spines, and two lateral rows of longer stouter spines. Body with a subdorsal row of slender branched-spines from the 3rd to last segment, those on the 3rd, 4th, 6th, 11th, and 12th being the longest; on the 3rd segment is a similar

but shorter lateral branched-spine, and also a less sized lateral spine on the 4th, 6th, 7th, 8th, 9th, 10th, and 11th segments, below these is a sublateral series consisting of delicate shorter single spines, with a branched-spine on centre of each segment. (Described from specimen preserved by Rev. J. H. Hocking, in Coll. British Museum.)

CHRYSLIS.—Abdomen attenuating to the end, with a short dorsal projected keel on each segment, a large broad keeled antero-dorsal dilated prominence and a thoracic conical prominence; wing cases dilated and pointed anteriorly, rounded posteriorly; head-piece bifid, the tips lengthened, pointed, laterally divergent, and twisted; ventral surface arched.

TYPE.—C. Opalina.

#### CONDOCHATES OPALINA.

*Dry-season brood* (Plate 261, fig. 1, 1a, b, larva and pupa, ♂ ♀).

*Limenitis Opalina*, Kollar, Hugél's, Kashmir, iv. pt. 2, p. 427 (1844).

*Athyma Opalina*, Westwood, Gen. D. Lep. ii. p. 274 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 171, pl. 5a, fig. 2, ♂ (1857); *id.* P. Z. S. 1858, p. ii.; P. Z. S. 1882, p. 241, pl. 11, fig. 3, larva. de Nicéville, Butt. of India, etc., ii. p. 173 (1886).

IMAGO.—Male. Upperside dark fuliginous-black; markings creamy-white; cilia alternated with white. *Forewing* with a white streak and two spots within the cell, a lengthened triangular spot beyond the cell, which is accompanied, generally, by a very slightly apparent small sullied spot at its upper angle; a transverse discal excurved series of spots, the upper three being subapical, disposed obliquely-outward, and elongated, the first indistinct and divided by the subcostals, the lower five disposed obliquely-inward, and increasing in width, the fourth being smallest and triangular, the two next more or less broadly ovate, with their base directed outward, and the two lower quadrate; beyond is a submarginal more or less indistinctly-defined lunular pale brown line which is most apparent and whitish at its upper and lower end; followed by a marginal indistinct slender pale brown even line. *Hindwing* crossed by a broad white even-edged straight inner discal band, and an outer discal narrower somewhat macular band formed of broad lunate spots, followed by a marginal pale brown even line. Underside dark ferruginous; markings as above. *Forewing* with the area below cell sullied with pale purpurescent-blackish patches between the veins, and the middle of the outer borders powdered with violet-grey scales; marginal lines distinct and mostly violet-grey. *Hindwing* also with a subbasal short narrow greyish-white band extending from the precostal vein; the outer discal area powdered with violet-grey; marginal line distinct and violet-grey; abdominal margin bluish-grey.

Female. Upperside as in the male, the ground colour somewhat paler, and all



the white markings broader. Underside also with the ground colour paler, otherwise as in the male.

*Body* and palp iabove black; thorax iridescent golden-green in front; collar white spotted; abdomen with a basal bluish-white band; palpi beneath white, edged with black; forelegs and middle and hind femora below greyish-white, middle and hind tarsi pale brownish-ochreous; antennæ black, tip reddish.

Expanse,  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

*Wet-season brood* (Plate 261, fig. c, d, ♂ ♀).

*Athyma orientalis*, Elwes, Trans. Ent. Soc. 1888, p. 354, pl. 9, fig. 4, ♂; P. Z. S. 1891, p. 277.

IMAGO.—Male and female. Upperside darker black than in *dry-season* brood, all the markings comparatively narrower, and of a sullied white tint. Underside of the same ground-colour, with the markings narrower, as above.

Expanse, ♂  $2\frac{8}{10}$ , ♀ 3 inches.

CATERPILLAR.—Elongated. Head small, yellowish-red; front blackish, studded with several whitish nodules in front, two frontal short nodular spines and two lateral rows of longer stouter black-tipt spines. Body green, with a subdorsal row of slender black-tipt branched-spines on the third to last segment, those on the third, fourth, sixth, eleventh, and twelfth segments being the longest; on the third segment is a similar but shorter lateral black-tipt branched-spine, and also a less sized spine on the fourth, sixth, seventh, eighth, ninth, tenth, and eleventh segments; below these is a sublateral series consisting of delicate short single spines with a branched-spine on centre of each segment; front legs blackish. (Described from specimen preserved by Rev. J. H. Hocking, in Coll. Brit. Mus.).

CHRYsalis.—Abdomen attenuating to the end, with a short dorsal projected keel on each segment; a large broad keeled antero-dorsal dilated prominence, and a thoracic conical prominence; wing cases dilated and pointed anteriorly, rounded posteriorly; head-piece bifid, the tips lengthened, pointed, laterally divergent, auriform and twisted; ventral surface arched. Colour pale yellowish-testaceous, processes partly dark brown; two parallel macular brown stripes on the abdomen below, and a lateral row of brown spots.

HABITAT.—Western and Eastern Himalayas; Khasia and Naga Hills; Burma.

DISTRIBUTION.—“A very common species in the Western Himalayas at about 6000 feet elevation” (de Nicéville, Butt. Ind. ii. 173. “I have taken perfect specimens from March to November, so that it must be poly-brooded. It has a very swift flight, but often settles. It is met with everywhere from the bottoms of the Valleys to the tops of the Hills” (*id.* Indian Agriculturist, January, 1880). Capt. H. B. Hellard took it at Simla, Masuri, and Kashmir, June to October (MS. Notes). Major J. W. Yerbury at Thundiani in August and September, at 8700 feet



elevation" (Ann. Nat. Hist. 1888, 142). Specimens from the Chumba Valley, September, Narkunda, April, and Kujiar, April, are in Mr. J. H. Leech's collection. Capt. A. M. Lang obtained it "at Kasauli in April and May, floating from tree to tree. Also at Simla from May to November. Larva found at Masuri, on April 21st, 1868, at 6500 feet elevation, feeding on *Berberis*. Colour deep apple-green, shagreened with paler minute points; a pale yellowish line above the feet; head small, hemispherical, yellowish-red, studded with short pale black-tipt spines; 2nd segment small, 3rd and 4th large, broad and angular, the rest gradually diminishing to the end; on each segment (except the second) a transverse row of red spines, the lowest between the feet very small and white tipped; the next lateral spines rather larger, forked with black points; the subdorsal long and branched with numerous black-tipt spinelets, those on the 3rd, 4th, 6th, 10th, and 11th much the longest; four or five red black-tipt spines at the anal extremity; spiracles inconspicuous except on the second segment where they are large and black; prolegs pale yellowish. Moulded on the 25th, form entirely as before, but colour deep yellow, with a broad lateral stripe of mottled blue-green. Turned into a pendent pupa on the 28th. The imago emerged on May 15th" (MS. Notes). The larva has also been found by Rev. J. H. Hocking, in Kangra, "feeding on *Kusmul*, in August" (P. Z. S. 1882, 241). Mrs. S. Robson records the life history of this species, as observed at Masuri (J. Bombay, N. H. S. 1894, 338). Mr. W. Doherty took it in the Upper Himalayan region, from Naini Tal, 6000 feet, and Askot, 4500 feet, up to Dwali, nearly 10,000 feet elevation (J. A. S. Beng. 1886, 125). We possess males of the dry and wet-season forms from General Ramsay's Nepal collection, and also from Sikkim, both sexes of the dry-season form from Simla, Masuri, and from Thundiani—taken in May by Major J. W. Yerbury. "In Sikkim it is found in the forests at 2000 to 7000 feet elevation from April to October, but is not common, and is difficult to take as it settles on high trees, and only descends to the ground at long intervals" (H. J. Elwes, Tr. Ent. Soc. 1888, 354). According to Mr. L. de Nicéville "this species is at least double brooded, and is found in Sikkim from April to October. It is also seasonably dimorphic; the form which occurs in the *dry-season* (spring) is quite typical *opalina*, while that found in the *wet-season* is much darker, richer-coloured, and narrower banded" (Sikkim Gaz. 1894, 141). Colonel C. Swinhoe records one specimen of the *dry-season* form from Cherra Punji, and a series of the wet-season form from Shillong, in the Khasia Hills (Tr. Ent. Soc. 1893, 283). Mr. W. Doherty took males of the *wet-season* form in the Naga Hills, and others nearer to the typical *opalina* in the Karen Hills, Burma" (P. Z. S. 1891, 277). Capt. E. Y. Watson took a single specimen in the Chin Hills, Burma, at 5000 feet elevation, in May (J. Bombay, N. H. S. 1897, 655).

LIFE HISTORY.—"May 13th, 1894.—I saw at Masuri, in the Western Himalayas,

a female of *Athyma opalina*, lay on the leaves of *Berberis aristata*, Hook. It fluttered over the leaves, and curled the apex of its abdomen under a leaf, depositing an egg on the underside. The egg is round, but is a little flattened at its base where it rests on the leaf. When first laid it is brown, and is covered with silvery dots which glisten in the sun. May 18th.—The ovum turned to a greenish-yellow with a brown crescent to be seen through its centre. May 20th.—This dark mark filled the anterior moiety of the egg, the posterior moiety being of a light dirty yellow. May 21st.—Larva emerged, but no trace of the egg-shell was to be seen, so probably its first meal was made off the shell. Larva a quarter of an inch long, of a dull green colour, with a very large brown head. June 5th.—Larva now about five-eighths of an inch in length, colour brown, with a bright green dorsal patch, and covered with small tufts. June 6th.—Larva changed its skin during the night, and is now much more bristly. June 9th.—Larva again changed its skin. The spines are now more prominent. June 13th.—Larva changed in the night from a dark brown to a beautiful green colour, very closely resembling the colour of its food-plant. There is a spiracular somewhat lunulated narrow yellow band. This band is whitish on the last three segments; the underside is brown, merging into pale green on the last three segments. The legs and claspers are also brown, but of a darker shade. Head round, colour raw-sienna; two A-shaped dark bars on the face are covered with minute white spines. Two black spines on the top of the head; the rest of the head covered with raw-sienna-coloured spines. The 3rd and 4th segments are each armed with a whorl of four branched raw-sienna-coloured spines. The 5th, 7th, 8th, 9th, and 10th segments with smaller spines; the 12th segment with two branched-spines; the 13th segment with four simple anal spines, and two small branched-spines just above them. The subdorsal series is very much the largest, particularly so on the fifth segment. All the branches are of a darker brown colour tipped with white. The larva is entirely covered with minute white spots. June 20th.—There is now a dorsal band, moss-green in colour, spotted with darker green; a broad lateral blue band lined transversely with darker blue bars crossing the band obliquely; a somewhat irregular narrow spiracular band extending from the 6th to the 13th segments, colour orange and pale ochreous alternately, the orange colour corresponding with the middle of each segment; posterior to this is an interrupted brownish line. Legs black; claspers and abdomen pale whitish-green. Length  $1\frac{1}{2}$  in. June 21st.—Larva suspended itself by the anal claspers. Colour throughout yellowish-white. During the day from the head to about the middle the larva became much yellower, and the posterior half became almost quite white. June 22nd.—Pupa of a dingy white. June 23rd.—Pupa of a brilliant metallic hue, and looks like burnished gold with burnished silver wing-cases. July 6th.—Imago emerged." Mrs. S. Robson (J. Bombay, N. H. S. 1894, p. 333.)



CHINESE ALLIED SPECIES.—*Condochates constricta* (*Athyma constricta*, Alpheraky, Rom. Mém. 1889, p. 110, pl. 5. Leech, Butt. of China, etc., p. 172).

HABITAT.—W. China.

### Genus TACOLA.

*Athyma* (sect. 1, part), Felder, Neues Lep. p. 32 (1861).

IMAGO.—Male. *Forewing* subtriangular; costa well arched, apex obtuse, exterior margin slightly oblique and scalloped, posterior margin long; cell area very broad, open; first subcostal emitted at nearly one-half before end of the cell, second at one-seventh before the end; second discocellular angled. *Hindwing* short, triangular; costa much arched in the middle, apex somewhat pointed, exterior margin very oblique, convex and scalloped; cell area very broad. *Body* very robust; palpi stout, compactly clothed below, hairy above, apical joint short, stout, and obtusely pointed; antennæ very long, with a stoutish elongated club; eyes naked; sexes alike.

TYPE.—T. *Larymna*.

### TACOLA LARYMNA (Plate 262, fig. 1, 1a, b, ♂ ♀).

*Limenitis Larymna*, Doubleday and Hewitson, Gen. D. Lep. ii. pl. 35, fig. 1 (1850).

*Athyma Larymna*, Westwood, Gen. D. Lep. ii. p. 274 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 172 (1857). Distant, Rhop. Malay. p. 159, pl. 16, fig. 1, ♂ (1883). de Nicéville, Butt. of India, etc., ii. p. 167 (1886).

IMAGO.—Male and female. Upperside purpurescent-black, with darker interspaces between the veins; markings bluish-white fading to creamy-white; cilia alternated with white. *Forewing* with an elongated claviform white cell-streak, which is divided into three portions by a round spot across its middle; a large elongated triangular discocellular spot beyond the cell; a transverse discal excurved series of spots—composed of two large elongated spots preceded by a very small slender subcostal streak, a larger oval discal spot between the middle and lower medians, and two irregularly quadrate lower spots; beyond which is a submarginal row of slender lunules, the one above the upper median being much larger and forming a rounded spot; followed by a less-defined pale brownish-white marginal lunular line. *Hindwing* crossed by a rather narrow white inner-discal band and an outer-discal macular band, followed by a marginal pale brownish-white lunular line. Underside ochreous-brown, the outer area suffused with pale lilacine-grey; the interspaces between the veins clouded with darker brown; markings as above, but pale lilacine-white. *Forewing* also with a portion of the cell-streak broader but less



defined; a small white patch above the discocellular triangular spot. *Hindwing* also with a narrow white subbasal band, two very slightly-defined medial-discal lilacine-white sinuous lines, and the marginal line very distinct. *Body* and palpi above black, a bluish-white band on thorax and abdomen; palpi beneath whitish and streaked with black; body and legs beneath greyish-white; middle and hind femora above brown.

Expanse, ♂ 3 to  $3\frac{4}{10}$ , ♀  $3\frac{4}{10}$  inches.

HABITAT.—Upper Tenasserim; Malay Peninsula; Sumatra; Borneo.

DISTRIBUTION.—A male, taken by Colonel C. T. Bingham in the Yé Valley, Upper Tenasserim, in February, 1893, is in the British Museum Collection. Signor Leonardo Fea obtained it at Meteleo, Upper Tenasserim, in August. Capt. Pinwill took it at Malacca. Mr. L. de Nicéville records it as “decidedly rare in N.E. Sumatra, and always found only singly, on fæces and moist spots on forest roads” (J. A. S. Bengal, 1895, 417). It also occurs at Sarawak, Borneo.

MALAYAN SPECIES.—*Tacola Magindana* (*Athyma Magindana*, Semper, Reisen Phil. Lep. p. 140, pl. 27, fig. 10, ♂; *id.* pl. 28, fig. 1, 2, ♂ ♀ (1889). *Habitat.* Philippine Islands.—*Tacola Eulimene* (*Nymph. Eulimene*, Godart, Encyc. Méth. ix. p. 429 (1823). *Syn.* *Athyma Jocaste*, Felder, Wien. Ent. Monats. 1859, p. 182; *id.* Reise Novara, Lep. pl. 56, fig. 1-3, ♂ ♀. *Athyma Badoura*, Butler, Ann. Nat. Hist. 1866, p. 100. *Habitat.* Amboina; Celebes.

### Genus PANTOPORIA.

*Pantoporia*, Hübner, Verz. Schmett. p. 44 (1816). Moore, Lep. of Ceylon, i. p. 56 (1881).

*Athyma* (sect. 2, part), Felder, Neues Lep. p. 32 (1861). de Nicéville, Butt. of India, ii. p. 171 (1886).

*Athyma* (part), Westwood.

IMAGO.—Male. *Forewing* subtriangular; costa arched, apex obtuse, exterior margin oblique, slightly concave in the middle, and slightly scalloped; first subcostal branch emitted at two-fifths before end of the cell, second at one-seventh before the end; upper discocellular short, middle discocellular outwardly-oblique, concave anteriorly, lower discocellular concave, slender, but distinct; middle median emitted considerably before lower end of the cell. *Androconia*, or scent-scales, in a very limited number, are present, chiefly upon the basal area of the upperside, between the median and submedian vein; these scales are very minute, elongated, broadest and rounded anteriorly, and finely ciliated in front, the base being angled hindward on each side into a fine pointed hook longer than the basal shaft. *Hindwing* short, triangular; costa slightly convex, apex obtuse, exterior margin very oblique, convex, scalloped, anal angle obtusely pointed; precostal vein long, incurved; cell area

short, open; subcostal branch and radial at equal distances from the costa. *Body* moderately stout; palpi rather stout, apex sharply pointed, compactly clothed; antennal club elongated; eyes naked; sexes dissimilar.

CATERPILLAR.—(Inara). “Cylindrical, with six rows of fine branched-spines, the dorsal row longer than the lateral, and those on the 3rd and 4th segments longer than the rest; the 2nd segment unarmed; base of the legs set with short simple spines; head covered with short simple spines and tubercles.”

CHRYSLIS.—“Like that of *Athyma Mahesa*, but of the processes on the back the posterior one is much longer and more inclined forward” (Davidson and Aitken).

MIMICRY IN THE FEMALES.—The females of the species of this genus are, apparently, all mimetic. The female of *P. Kresna* has the coloration and pale dull olivescens-ochreous markings of a *Neptis*, and is probably a mimic of *N. Anjana* and its allies *Harita* and *Omeroda*. The females of *P. Inara* and *P. Cama* have ochreous-red markings, and both probably mimic the red-banded *Neptis Viraja* and its allies. The female of *P. Selenophora*, with its creamy-white markings, is an excellent mimic of the allied *Condochates Opalina*, even to the white band on the abdomen, which latter is not present in the male of *Selenophora*. The female of *P. rufula*, also, is probably a mimic of *Neptis Nar* and of *Neptis Mananda*. The female of *P. Zeroca*, both on the upper and underside resembles *Neptis Quilta* and its ally *N. Nashona*, of which it is probably a mimic.

TYPE.—*P. Nefte*.

#### PANTOPORIA NIVIFERA (Plate 262, fig. 2, 2a, b, ♂ ♀).

*Athyma nivifera*, Butler, Trans. Linn. Soc. Zool. 1877, p. 540, pl. 69, fig. 4, ♂. Moore, Journ. Linn. Soc. Zool. 1886, p. 37.

*Athyma Nefte*, var. *nivifera*, Distant, Rhop. Malay. p. 163, pl. 16, fig. 6, 7, ♂ ♂ (1883).

*Athyma Nefte*, Staudinger, Exot. Schmett. pl. 51, ♂ ♀.

IMAGO.—Male. Upperside purpurescent-black, with intervening blacker patches between the veins; cilia slightly alternated with white; markings bluish-white. *Forewing* with a narrow basal obscurely-divided bluish-white cell-streak joined to a large rounded spot at end of the cell and then to a narrow triangular discocellular spot beyond the cell, the basal and terminal portion being speckled with blue scales; three conjoined subapical outwardly-oblique ovate spots, below which are three discal inwardly-oblique spots, the upper situated between the middle and lower medians, being large, laterally elongated and oval, the two lower much narrower, the middle one being indented at its sides; beyond is a submarginal row of obscurely-defined very narrow brownish-white lunules, and then a less defined slender pale brown marginal line. *Hindwing* crossed by an inner-discal bluish-white

band, and a submarginal narrow lunulate macular band followed by a slender marginal pale brown line; the discal band inwardly-edged with blue scales. Under-side pale purpurescent-brown, with diffused blackish intervening patches between the veins; cell streak and the transverse markings, as on upperside, violaceous-white. *Hindwing* also with a violaceous-white narrow subbasal band; abdominal margin bluish-grey. *Body* and palpi above black; thorax and abdomen with a bluish-white band; body and palpi beneath, and legs beneath greyish-white; antennæ black, tip beneath reddish.

Female. Upperside dark brown, with blackish intervening bordering patches between the veins; markings, disposed as in the male, reddish-ochreous, palest in the dry-season specimens. Underside brownish-ochreous, with diffused blackish intervening patches; the markings as on upperside, but paler ochreous, in some sullied ochreous-white. *Hindwing* also with a narrow subbasal band. Thorax and abdomen above with an ochreous band.

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

HABITAT.—Mergui, Tenasserim; Malay Peninsula, etc.

DISTRIBUTION.—Males were taken by Dr. J. Anderson on Kisserang Island, and in Mergui, in December (J. Linn. Soc. Z. 1886, 37). Mr. Moti Ram also took a "male in Tavoy" (J. A. S. Bengal, 1887, 423). The type was taken in Malacca. Mr. Distant records it from Province Wellesley and Malacca (l.c. p. 163). It also occurs on Nias Island, Sumatra, and Borneo.

**PANTOPORIA KRESNA** (Plate 263, fig. 1, 1a, b, c, ♂ ♀).

*Athyma Kresna*, Moore, Proc. Zool. Soc. 1858, p. 12, pl. 50, fig. 4, ♂. Distant, Rhop. Malay. pp. 161, 445, pl. 16, fig. 3, ♂ (1883). Moore, Journ. Linn. Soc. Zool. 1886, p. 37. de Nicéville, Butt. of India, etc., ii. p. 173 (1886).

*Athyma Subrata*, Moore, P. Z. S. 1858, p. 13, pl. 51, fig. 1, ♀. Druce, P. Z. S. 1873, p. 344. Distant, Rhop. Malay. p. 164, pl. 16, fig. 4, ♀. de Nicéville, Butt. of India, etc., ii. p. 181, ♀.

IMAGO—Male. Upperside purpurescent brownish-black, with blacker intervening borderings to the markings; cilia slightly alternated with white; markings very prominent and bluish-white. *Forewing* with a bluish-white claviform cell-streak divided into three portions, the division of the two basal portions being more or less incomplete and slightly defined; a very large broadly-triangular discocellular spot beyond; three subapical oblique oval spots, a large rounded discal spot and two lower narrow spots, the upper one slightly indented at the sides; beyond is a submarginal row of distinctly-defined lunules, followed by a slightly-defined pale brown marginal line. *Hindwing* crossed by a narrow inner-discal band and a submarginal row of narrower lunulate spots, followed by a pale brown



marginal line. Underside ochreous-brown, with blackish diffused patches intervening between the veins; markings bluish-white as above. *Forewing* also with a short narrow subbasal white band, and bluish-grey abdominal margin.

Female. Upperside dark olivescient ochreous-brown; markings pale dull olivescient-ochreous, these are similar in shape and are disposed as in the female of *P. Nepte* and *nivifera*, but are all narrower and much less defined. Underside paler, and duller ochreous-brown than the upperside, with diffused blackish intervening patches between the veins; markings as on upperside, but duller and very pale violaceous-white. *Hindwing* also with a pale violaceous-white subbasal band. *Body* and palpi above brownish-black; thorax and abdomen with a bluish-white band in the male, and a pale olivescient-ochreous band in the female; body, palpi, and legs beneath greyish-white; antennæ black, tip reddish.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{5}{10}$ , ♀  $2\frac{6}{10}$  to  $2\frac{8}{10}$  inches.

HABITAT.—Assam; Eastern Bengal; Burma; Tenasserim; Malay Peninsula, etc.

DISTRIBUTION.—A male, labelled, Assam, is in Mr. Walter Rothschild's collection. A female, verified as *Subrata*, was taken in Eastern Bengal by Mr. A. E. Russell (P. Z. S. 1865, 763). Captain E. Y. Watson obtained a "single male at Pougadaw, Upper Burma" (J. Bombay N. H. Soc. 1888, 5). Dr. J. Anderson took "two males at Minthantoung in December, and three females (*Subrata*) in Mergui, in December and March" (J. Linn. Soc. Zool. 1886, 37). Mr. W. L. Distant records it from Malacca and Province Wellesley, Malay Peninsula (l.c. p. 161). It also occurs in Sumatra, and Borneo. We have verified specimens of both sexes from Sandakan, N. Borneo, in Mr. D. Cator's collection, taken in January, February, April, May, and July. We have it also from Malacca, Singapore, and Sarawak.

MIMICRY.—The female of this species has the coloration and markings of a *Neptis*, and is probably a mimic of *N. Anjana*, *Harita*, or *Omeroda*.

#### PANTOPORIA INARA.

*Dry-season brood* (Plate 264, fig. 1, 1a, b, ♂ ♀).

*Limnitis Inara*, Doubleday and Hewitson, Gen. D. Lep. ii. pl. 34, fig. 3, ♂ (1850).

*Athyma Inara*, Westwood, Gen. D. Lep. ii. p. 274 (1850). de Nicéville, Butt. of India, etc., ii. p. 179 (1886).

IMAGO.—Male. Upperside purpurescent brownish-black, with blacker intervening bordering to the markings; cilia slightly alternated with white. Both wings crossed by a broad discal bluish-white band edged with darker blue scales. *Forewing* also with a narrow bluish-white speckled obscure ochreous streak in the cell, a more prominent whiter spot at its end, and a white-speckled obscure triangular spot beyond the cell; the discal band composed of three large white subapical oblique

conjoined spots and a subcostal very slender speckled streak above, four lower discal inwardly-disposed conjoined spots, the upper being very small and triangularly ovate, the others very broad and quadrate, the third indented at the sides; a submarginal row of irregular reddish-ochreous lunules, which are much the widest anteriorly and palest posteriorly, followed by a marginal pale greyish-brown line. *Hindwing* crossed by a broad white discal band, which is narrowest anteriorly, a submarginal reddish-ochreous broad lunular band decreasing anteriorly, followed by a marginal pale greyish-brown line. Underside pale dull reddish-ochreous, with very obscure darker-clouded intervening discal patches between the markings; the discal broad band and cell spots as above, violaceous-white. *Forewing* also with a slight whitish-bordered blackish spot below the cell, and the two outer marginal series of lunules violaceous-white posteriorly. *Hindwing* also with a basal short curved violaceous-white streak above the costal vein; the submarginal broad lunular band violaceous-white posteriorly; the outer marginal line also violaceous-white; abdominal margin bluish-grey.

Female. Upperside paler brownish-black, with reddish-ochreous cell-streak, discal band and submarginal lunular band; the cell-streak prominent, lengthened, the parts fused together but thrice indented on the upper edge; the discal band touching the submarginal lunules above the upper and lower medians; marginal line pale greyish-brown. Underside pale dull reddish-ochreous with slightly darker intervening discal patches; cell-streak and basal spot on forewing, and transverse bands on both wings, as in male, but all broader, more obscurely defined, and mostly suffused outwardly with ochreous. *Body* and palpi above brownish-black; a bluish-white band on thorax and abdomen in male, and ochreous-white in female; body and palpi beneath and legs greyish-white; antennæ black above, reddish beneath.

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

*Wet-season brood* (Plate 264, fig. 1, c, d, e, ♂ ♀).

*Athyma Inarina*, Butler, Annals Nat. Hist. 1885, p. 304. de Nicéville, Butt. of India, etc., ii. p. 179 (1886). Davidson and Aitken, Journ. Bombay Nat. Hist. Soc. 1896, p. 254.

*Athyma Inara*, Moore, Proc. Zool. Soc. 1858, pl. 1, fig. 6, ♂.

IMAGO.—Male and female somewhat larger than the dry-season form. Male. Upperside with similar but brighter-coloured markings. *Forewing* differs only in the narrow basal cell-streak being more reddish-ochreous, its end spot prominently white, and the discocellular spot beyond more or less distinct; the transverse discal white band on both wings is narrower, and on the hindwing the submarginal ochreous-red lunular band is also narrower. Underside brighter reddish-ochreous than in dry-season form, markings the same but more prominent, the transverse discal bands narrower, as on the upperside, with distinct black intervening patches

on the forewing, and a distinct row of small black patches between the discal and submarginal band on the hindwing; the extreme outer border of both wings being also blackish.

Female. Upperside similar to the *dry-season* form, the ground-colour and markings brighter, the discal bands variable in width but comparatively narrower, the discoidal streak more distinctly divided. Underside of a deeper and brighter reddish-ochreous, the markings more defined, with intervening blackish diffused patches as in male.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{8}{10}$ , ♀  $2\frac{6}{10}$  to  $3\frac{2}{10}$  inches.

CATERPILLAR.—“Cylindrical; with six rows of fine branched-spines, the dorsal being longer than the lateral, and those on the third and fourth segments longer than the rest, the second segment unarmed; the bases of the legs set with short simple spines; colour pure green, with a large brown patch on the ninth segment; spines brown, and head dark brown; head covered with short simple brown spines and white tubercles” (Davidson and Aitken, J. Bombay, N. H. S. 1896, 254).

CHRYSALIS.—“Like that of *Athyma Mahesa*, but of the processes on the back the posterior one is much longer and more inclined forward” (*id.* 254).

HABITAT.—Nepal; Sikkim; Bhotan; Assam; Cachar; Silhet; Khasias; Orissa; South India.

DISTRIBUTION.—“This is a very common species, occurring in Sikkim at low elevations, and in the Terai, and Eastward as far as Sibsagar in Upper Assam, but it is rare in South India. There is a single male from the Wynaad in the Indian Museum, Calcutta, taken by Mr. R. Morgan. Mr. W. C. Taylor has taken it in Orissa” (de Nicéville, l.c. 180). We have specimens from Nepal, taken by the late General G. Ramsay. Mr. H. J. Elwes says it is “common at low elevations in Sikkim from March to December” (Tr. Ent. Soc. 1888, 356). Colonel C. Swinhoe records it as “fairly common in the Khasias” (Tr. Ent. Soc. 1893, 283). Mr. J. Wood-Mason obtained “six males and four females in the forests near Silcurei, Cachar, in June and August” (J. A. S. Beng. 1886, 360). In South India, Messrs. Davidson and Aitken observes that “males are common on the Hill tops from August onwards. We get few females. We obtained the larva feeding on *Glocnidion velutinum* and *zeylanicum*” (J. Bombay N. H. S. 1896, 254). Colonel Swinhoe has specimens from “Karwar, N. Kanara, taken in August, October, and November” (Tr. Ent. Soc. 1893, 283). Mr. G. F. Hampson obtained “two males and one female on the Nilgiris at 3000 feet elevation” (J. A. S. Beng. 1888, 354). Captain E. Y. Watson records “one male taken at Kathlekan, Mysore, in November” (J. A. S. Beng. 1890, 5). Mr. H. S. Ferguson found it “very rare in Travancore, one specimen only being taken in July, near Trevandrum” (J. A. S. Beng. 1891, 9).



**PANTOPORIA ASITA** (Plate 263, fig. 2, 2a, ♂ ♀).

*Athyma Asita*, Moore, Proc. Zool. Soc. 1858, p. 13, ♂. de Nicéville, Butt. of India, etc., ii. p. 180 (1886).

IMAGO.—Male. Upperside with similar markings to *P. Inara*. Differs on the *forewing* in the portions of the discoidal streak being all bluish-white, the discal band comparatively narrower, and the lower submarginal lunules from the upper median being also white. *Hindwing* also with the inner band and the submarginal lunular band both white. Underside similar to *Inara*, except that the submarginal lunular band on hindwing is entirely white.

Female. Upperside similar to *Inara*, but with all the markings paler ochreous, the submarginal lower lunules on the forewing being also ochreous and broader. Underside also similar, but duller coloured, the submarginal lunular band on both wings being whitish throughout.

Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{8}{10}$  inches.

HABITAT.—Burma; Shan States; Tenasserim, etc.

NOTE.—The above descriptions are taken from the type male, now in Mr. H. Grose-Smith's collection, and from a female in our own possession.

DISTRIBUTION.—We have verified a male and female in Colonel C. H. E. Adamson's collection, taken in "Burma, where it is a common insect on hilly ground throughout the rains. Specimens from the South have, as a rule, less orange than those from further North" (List of Burm. Butt. p. 23). A female, taken by Colonel C. T. Bingham in the Yunzalee Valley, in April, is in the British Museum Collection. A female from the Shan States is in our own collection. Mr. Otto Limborg obtained both sexes at Ponsekai, in Tavoy (J. A. S. Beng. 1887, 423). A male and female, from Hong Kong, is in Mr. P. Crowley's collection. We have verified specimens of both sexes of this species, taken in Hong Kong by Mr. J. J. Walker, who refers to them as "*Nefte*" (Tr. Ent. Soc. 1895, 456), as being "not uncommon from December to May, a fresh brood appearing at the end of March."

**PANTOPORIA RUFULA** (Plate 265, fig. 1, 1a, ♂ ♀).

*Athyma rufula*, de Nicéville, Butt. of India, etc., ii. p. 181, ♀ (1886); *id.* Journ. As. Soc. Beng. 1888, p. 277, ♂ ♀.

IMAGO.—Male. Upperside dark purpurescent-brown, with intervening discal black patches between the veins. *Forewing* with a prominent bluish-white oval spot at end of the cell, and an indistinctly defined broken basal narrow white streak; a transverse discal interrupted bluish-white macular band composed of three small oval oblique subapical spots, the middle one being the largest, and three lower inwardly oblique larger spots, the upper one broadly oval, the next quadrate and laterally-indented, the lowest narrow; sometimes there is also a very small upper

white spot present between the middle and upper medians; followed beyond by a submarginal and marginal indistinct pale ochreous-brown lunular line, the former anteriorly ending in a brighter ochreous-red larger lunule. *Hindwing* crossed by a moderately broad bluish-white discal band, the bases of the subcostal veinlets being also white-lined, and a broad white patch on base of the costal margin; a submarginal row of indistinct pale ochreous-brown lunules, and a marginal narrow line. Underside dull brownish-ochreous, with more or less black intervening patches between the veins; the discal bluish-white band as on upperside. *Forewing* also with a bluish-white discoidal streak formed of four portions, the submarginal and marginal lunules being mostly whitish. *Hindwing* also with a bluish-white curved subbasal streak; a medial discal recurved row of distinct small black spots, a submarginal white macular band, and a marginal whitish lunular line inwardly bordered by blackish patches; abdominal margin bluish-grey.

Female. Upperside dark purpurescent-brown, with intervening black diffused patches between the veins; markings similar to male but less distinct. *Forewing* with the discoidal broken-streak obscure and sullied with ochreous, the transverse discal series of spots broader than in male and also outwardly sullied with bright ochreous, the marginal lunular lines pale ochreous-brown, the upper lunule of the submarginal being brighter ochreous. *Hindwing* with the white discal band slightly sullied with ochreous along its outer edge; submarginal lunular band and marginal line pale ochreous-brown. Underside dull brownish-ochreous; markings similar to the male; the discal series of white spots on the forewing being outwardly sullied with ochreous. *Body* and palpi above dark brown, beneath and legs greyish-white; antennæ black above, reddish beneath; a bluish-white band on thorax and abdomen above in both sexes.

Expanse, ♂  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—South Andamans.

DISTRIBUTION.—The late Mr. F. de Roëpstorff obtained several females of this species, but no males. Mr. R. Wimberley recently obtained the male described by Mr. de Nicéville. Specimens of both sexes are in Mr. P. Crowley's collection. It is nearest allied to *Athyma Glora*, from the Island of Nias.

MIMICRY.—The female of this species is an excellent mimic of *Neptis Nar*.

#### PANTOPORIA CAMA.

*Wet-season brood* (Plate 265, fig. 2, 2a, b, c, ♂ ♀).

*Dry-season brood* (Plate 266, fig. 1, 1a, b, c, d, e, ♂ ♀).

*Athyma Cama*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 174, pl. 5, a, fig. 5, ♂ ♀ (1857); Proc. Zool. Soc. 1858, p. 14. de Nicéville, Butt. of India, etc., ii. p. 178 (1886). Staudinger, Exot. Schmett. pl. 51, ♂.



IMAGO.—Male. Upperside rich purpurescent brownish-black; cilia very slightly alternated with white. *Forewing* with a narrow indistinctly-defined sullied reddish-ochreous discoidal streak; an interrupted discal transverse prominent bluish-white band, widest in *dry-season* examples, composed of two, or more generally three, subapical outwardly-oblique ovate spots, the lowest, when present, being the smallest, and three lower inwardly-oblique larger spots from the middle median, the upper rounded, the next quadrate and laterally indented, the lowest narrow, these three being laterally inwardly-edged with blue scales; very rarely there is a minute conjoined spot also present between the upper medians; beyond is a submarginal pale brown lunular line ending at its costal end in a bright reddish-ochreous spot, followed by a marginal pale brown line, these two lines being palest in *dry-season* forms. *Hindwing* crossed by a prominent bluish-white inner-discal band inwardly edged with blue scales, followed by a submarginal pale brown lunular fascia, and a marginal line. Underside yellowish-ochreous, palest in the *dry-season* form, darker in the *wet-season* form; discal transverse white band as on upperside. *Forewing* also with prominent unbroken but irregular-edged discoidal streak and the marginal lunular lines pale violet-blue; the discal interspaces anteriorly clouded with brownish-ochreous and posteriorly with brownish-black, darkest in *wet-season* form; a basal black spot below the cell. *Hindwing* also with a prominent subbasal curved subcostal streak, submarginal lunular band and marginal line pale violet-blue; a medial discal row of dark ochreous-brown lunate patches; abdominal margin bluish-grey.

Female. Upperside dark olivescient brownish-black; markings yellowish-ochreous, darkest and brightest in *wet-season* form. *Forewing* with a prominent yellowish-ochreous sharply-defined discoidal streak which is entire to beyond the cell, its lower edge being straight and its upper edge irregular but not distinctly indented; a discal interrupted band composed of larger and broader subapical and lower spots, the marginal pale brown lunular lines distinct. *Hindwing* with yellowish-ochreous inner-discal broad band and submarginal band of nearly equal width, but widest in the *dry-season* form; the pale brown marginal line distinct. Underside pale yellowish-ochreous in *dry-season* form, darker ochreous in *wet-season* form; markings as in the male, but less prominent, the discal white macular band on forewing sullied externally with pale ochreous. *Body* and palpi above black; abdomen with a broad bluish-white band; body and palpi beneath and legs pale bluish-grey; antennæ black, tip reddish beneath.

Expanse, ♂  $2\frac{5}{10}$  to 3, ♀  $2\frac{5}{10}$  to  $3\frac{4}{10}$  inches.

HABITAT.—Western and Eastern Himalayas; Assam; Upper Burma.

DISTRIBUTION.—Capt. A. M. Lang records a male of this species taken in his own garden at Masuri, on May 14th, 1863, observing (MS. Notes, p. 201), “this is



the first which I have taken or seen alive, though I have specimens from Sikkim. I at once distinguished it in flight and colour from *Opalina*, which is abundant in my garden." Mr. W. Doherty obtained it at Almora, and in Eastern Kumaon generally, being common from 2000 to 5000 feet elevation (J. A. S. Beng. 1886, 125). Mr. de Nicéville states that it is "a common species, occurring from Kumaon to Upper Assam; specimens were obtained in Upper Burma by the Yunan Expedition" (Butt. Ind. 178). In Sikkim, "it is found at the same elevations and seasons as *Zeroca*; the female is rare" (H. J. Elwes, Tr. Ent. Soc. 1888, 355). We possess specimens of both the dry and wet-season forms from Nepal, and others from Sikkim and Bhotan. Col. C. Swinhoe notes it as being very common in the Khasias. Dr. G. Watt obtained "a single male in Manipur" (Ann. N. H. 1885, 304). A female from the Ruby Mines District, Upper Burma, is in Mr. H. Grose-Smith's collection. Dr. N. Manders records it as "rather an uncommon species in the Shan States at from 3000 to 4000 feet elevation" (Tr. Ent. Soc. 1890, 524).

#### PANTOPORIA SELENOPHORA.

*Limenitis Selenophora*, Kollar, Hügel's Kaschmir, iv. pt. 2, p. 426, pl. 7, fig. 1, 2, ♂ (1844).—*Dry-season brood*.

*Athyma Selenophora*, Westwood, Gen. D. Lep. ii. p. 276 (1850). Moore, Catal. Lep. Mus. E. I. Company, i. p. 175 (1857); P. Z. S. 1858, p. 14. de Nicéville, Butt. of India, etc., ii. p. 176 (1886).

*Athyma Bahula*, Moore, Proc. Zool. Soc. 1858, p. 12, pl. 50, f. 2, ♀.—*Wet-season brood*.

*Wet-season brood* (Plate 267, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male. Upperside rich purpurescent brownish-black, with blacker bordering to the markings; cilia slightly alternated with white. *Forewing* with very obscure traces of an ochreous-red interrupted discoidal streak; a distinct subapical oblique series of three small decreasing bluish-white ovate spots, the lowest being more lunate and more or less obsolescent; below which is a discal transverse bluish-white band composed of four conjoined-spots of variable width in their course, and edged with blue scales, extending from the upper median to the posterior margin, the upper spot being the smallest and triangularly ovate, the second larger, broader, and somewhat quadrate, the third and fourth transversely narrower, the third being laterally indented,—this band is of varying width in individual examples; followed by a submarginal obscure row of pale brown narrow lunules, and a marginal narrower line. *Hindwing* crossed by a discal bluish-white band edged with blue scales, followed by an obscure submarginal row of pale brown lunate spots, and a marginal narrow line. Underside brownish-ochreous, the extreme costal base of both wings being yellowish-ochreous, brighter and darker reddish-ochreous on the outer borders and the intervening patches between the veins, those within the discal area being somewhat diffusedly-blackish; the white

subapical spots and discal band on both wings as on the upperside, the former with some slender streaks on the costa. *Forewing* also with a prominent violaceous white discoidal streak divided into three portions by two blackish bars crossing the cell near its middle, the discocellular spot beyond inwardly defined by another blackish bar; below base of the cell are two prominent black spots bordered by violaceous-white; the submarginal and marginal lunular lines also violaceous-white. *Hindwing* also with a short broad violaceous-white subbasal band between the precostal and costal veins; a pair of short reddish-black slender bars across the cell and two similar bars in continuation above the cell; an outer discal series of diffused rich dark ochreous-brown broad spots, followed by a submarginal row of violaceous-white lunular spots and then a marginal line; abdominal margin bluish-grey.

Female. Upperside olivaceous fuliginous-black, with blacker intervening discal interspaces between the veins; markings creamy-white, very similar in shape and position to those in female of *Condochates Opalina*, but narrower. *Forewing* with a creamy-white discoidal streak divided into four narrow portions, three being within the cell, the fourth beyond the discocellular veinlet and this latter portion is elongated and disposed mostly between the radials—whereas in *Opalina*, it is disposed wholly between the lower radial and upper median; a transverse discal series of spots somewhat narrow, the three between the upper median and submedian oval and having their base directed inward (in *Opalina* these are directed outward); submarginal lunules distinct; marginal pale lunular line narrow. *Hindwing* with a moderately broad inner-discal creamy-white band, and a submarginal macular band composed of broad lunate spots; marginal pale lunular line distinct. Underside. Both wings with the reddish-ochreous ground colour and intervening darker patches as in the male, but all somewhat brighter. *Forewing* with the discoidal streak, black bars, and basal marks on both wings as in male; the transverse white discal and submarginal band, and marginal lunular line on both wings, as on upperside, but all more prominent. *Hindwing* also with a subbasal white band as in male. *Body* and palpi above brownish-black; abdomen of male entirely black above; thorax and abdomen of female with a bluish-white band; body and palpi beneath, and legs, pale greyish-white; antennæ black, tipt with reddish-ochreous.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀  $3\frac{2}{10}$  to  $3\frac{4}{10}$  inches.

*Dry-season brood* (Plate 267, fig. d, e, ♂ ♀).

IMAGO.—Male. Smaller than wet-season brood. Upperside with the ground-colour somewhat paler, the white subapical spots on forewing comparatively larger, and the discal band variable in width but generally somewhat broader, both the submarginal and marginal lunular bands more distinct, and pale brownish-grey; the



discoidal streak of forewing obscure ochreous-red, the portion at end of cell being sometimes whitish. Underside duller and paler brownish-ochreous than in wet-season examples, all the markings being less prominent.

Female. Upperside with the ground colour and markings as in the wet-season brood; the discal bands being slightly broader. Underside paler ochreous-red and less prominently defined markings than in wet-season examples, the discal bands broader, as on upperside.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

CATERPILLAR.—“Very like that of *Inara*, but the dorsal patch is much smaller, and there are some white spots on the sides. Feeds on *Adina cordifolia* (Rubiaceæ)” (Davidson and Aitken, J. Bombay N. H. S. 1896, p. 254).

CHRYsalis.—“Distinguished from that of *Inara* by slight differences in the shape of the grotesque processes on the head and thorax” (*id.*).

HABITAT.—Western and Eastern Himalayas; Assam; Cachar; Silhet; Manipur; Upper Burma; S. India.

DISTRIBUTION.—Kollar records the type specimen from Masuri. Mr. W. Doherty obtained it in the “Kali and Gori Valleys, E. Kumaon, at 2000 to 3000 feet elevation” (J. A. S. Beng. 1886, 125). We possess specimens of the sexes of both wet and dry-season forms from Nepal, taken by the late Gen. G. Ramsey; others also from Sikkim, and Buxa in Bhotan. “It is common in Sikkim and Eastwards to Upper Assam, and specimens were taken by Dr. J. Anderson, during the Yunan Expedition. It also occurs in Manipur, Cachar, and Silhet” (L. de Nicéville, *l.c.* 177). Mr. H. J. Elwes says it is “a common species in Sikkim from 1000 to 3000 or 4000 feet, from March to December. Males common, female rare” (Tr. Ent. Soc. 1888, 355). Col. Swinhoe has received numerous specimens from the Khasia Hills. Mr. J. W. Mason records “three males taken in forests near Silcuri, Cachar, in July” (J. A. S. Beng. 1886, 359). A male from Lushai is in Mr. P. Crowley’s collection. Capt. E. Y. Watson obtained “numerous males and females at Tilin from October to March, during the Chin-Lushai Expedition of 1889-90” (J. Bombay N. H. S. 1891, 40). Col. C. H. E. Adamson records it as occurring “on the low ranges of hills throughout Burma” (List, p. 23). Both Mr. W. Doherty and Signor L. Fea obtained it in the Karen Hills, East Pegu. Specimens of both forms from the Shan States are in Mr. W. Rothschild’s collection. Mr. Moti Ram took it in Tavoy (J. A. S. Beng. 1887, 423). Dr. N. Manders records it as abundant in the Shan States, Upper Burma (Tr. Ent. Soc. 1890, 523).

In South India it has been taken in the Wynaad. Mr. J. Davidson took it in the “North Kanara District from August onwards, but it is comparatively scarce; the males basking on the tops of the Hills, but the females haunt the forest-clad sides and are seldom seen. The larva was found feeding on *Adina cordifolia*”



(J. Bombay N. H. S. 1896, 254). Mr. G. F. Hampson found it "very rare on the Nilgiris at 3000 to 5000 feet elevation" (J. A. S. Beng. 1888, 354). Capt. E. Y. Watson took a male at the Gersoppa Falls, Mysore, in January (J. Bombay N. H. S. 1890, 5). Mr. H. Ferguson found it "not uncommon on the Travancore Hills" (*id.* 1891, 9).

Mr. J. J. Walker obtained it in "Hong Kong, in April and May" (Tr. Ent. Soc. 1895, 457).

#### PANTOPORIA ZEROCA.

*Athyma Zeroca*, Moore, Proc. Zool. Soc. 1872, p. 564, ♂. de Nicéville, Journ. Asiatic Soc. Bengal, 1883, p. 94; *id.* 1886, p. 359, pl. 16, fig. 6, ♂; *id.* Butt. of India, etc., ii. p. 177 (1886).

*Wet-season brood* (Plate 268, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male. Forewings comparatively shorter and more rounded at the apex than in the closely allied *P. selenophora*. Male. Upperside rich purpurescent brownish-black, with blacker intervening bordering patches between the veins. *Forewing* with a very obscure ochreous-brown entire, but distorted, cell-streak and a discocellular spot beyond; three subapical oblique small sullied bluish-white spots, the two upper being more or less lunate, the third very small or obsolescent; a lower transverse discal bluish-white band (slightly varying in width in individual specimens) edged with blue scales, composed of four portions of nearly equal width; followed by a submarginal pale brown lunular line and a marginal narrow line. *Hindwing* crossed by a bluish-white inner-discal band edged with blue scales, followed by a submarginal pale brown lunular line and a marginal narrow line. Underside deep reddish-ochreous, the extreme base of costal borders of both wings being yellowish-ochreous; subapical lunular spots, and discal band on both wings bluish-white, as on the upperside. *Forewing* also with a prominent irregular-edged entire cell-streak and sagittate spot beyond, and also the marginal lunular lines violaceous-white; the apical and discal interspaces between the veins with black diffused patches; a black mark below base of the cell bordered with violaceous-white. *Hindwing* also with a short curved subbasal streak, submarginal lunular line and narrow marginal line violaceous-white; two very obscure dusky bars within the cell and two similar bars above the cell; an outer discal row of distinct reddish-black diffused spots; abdominal margin bluish-grey.

Female. Upperside olivescient fuliginous-brown, with blackish intervening discal interspaces between the veins; markings sullied brownish-white with slightly diffused edges, very similar in both colour and pattern to those of *Neptis carticooides* and its allies. *Forewing* with a sullied brownish-white irregular-edged but entire narrow cell-streak and an elongated triangular discocellular streak beyond; a transverse discal series of three subapical outwardly-oblique narrow spots, the third

being lunate, the others disposed obliquely inward and are narrow, followed by a submarginal row of diffused lunules, and a marginal slender lunular line. *Hindwing* with a moderately narrow inner-discal sullied brownish-white band and a lunulated submarginal band, followed by a marginal slender line. Underside ochreous-red, with darker dusky reddish-black intervening patches as in the male; the markings as on the upperside but all violaceous-white; the hindwing also having a subbasal violaceous-white streak; abdominal margin bluish-grey. *Body* and palpi above brownish-black; abdomen of female above with a narrow bluish-white band; body and palpi beneath, and legs, greyish-white; middle and hind legs above brownish-white; antennæ black, tip beneath reddish.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{6}{10}$  to  $2\frac{8}{10}$  inches.

*Dry-season brood* (Plate 268, fig. 1, d, e, ♂ ♀).

IMAGO.—Male. Smaller than the *wet-season* form. Upperside with the discal white band comparatively broader and its edges more even, the subapical spots on forewing more prominent and larger, the marginal pale lines similar. Underside with the ground-colour duller ochreous-red, markings the same but less prominent.

Female. Upperside, ground-colour slightly paler, and the markings somewhat broader than in *wet-season* female. Underside paler and duller red, the markings less prominent than in the *wet-season* form.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{4}{10}$ , ♀  $2\frac{5}{10}$  inches.

HABITAT.—Kumaon; Sikkim; Bhotan; Assam; Khasias; Manipur; Upper Burma; Tenasserim.

DISTRIBUTION.—Mr. W. Doherty records specimens taken in the "Gori and Kali Valleys, East Kumaon, 2000 to 3000 feet elevation—the specimens varying considerably in markings" (J. A. S. Beng. 1886, 125). "Males of *Zeroca* are not uncommon at low elevations in Sikkim, but the female is much less often met with. It occurs Eastward in the Assam Valley as far as Sibsagar, and was obtained by Dr. Anderson during the Yunan Expedition" (de Nicéville, Butt. Ind. ii. 177). Mr. H. J. Elwes says it is "found in Sikkim at the same elevations and seasons as *Selenophora*, but not so common. The female is rare" (Tr. Ent. Soc. 1888, 355). Mr. de Nicéville records it as "occurring in Sikkim from the level of the Terai up to 4000 feet, from March to December" (Sikkim Gaz. 1894, 141). Mr. G. C. Dudgeon has taken it at Buxa in Bhotan. It occurs in Assam, Manipur, and the Khasia Hills. Signor L. Fea obtained it in the Karen Hills, and at Meleleo in August. Mr. Moti Ram took males in Tavoy (J. A. S. Beng. 1887, 423).

MIMICRY.—The female resembles, both on the upper and underside, *Neptis Quilta* and its ally *N. Nashona*, of which it is probably a mimic.

INDO-MALAYAN SPECIES.—*Pantoporia Nefte* (Pap. Nefte, Cramer, Pap. Exot. iii.



pl. 256, fig. E F, ♀ (1782). *Pantoporia Nefte*, Hübn. Verz, p. 44 (1816). *Lim. Nefte*, Boisd. Spec. Gen. Lep. pl. 8 (4 B), fig. 6 (1836). *Athyma Nefte*, Moore, Proc. Zool. Soc. 1858, p. 13, pl. 50, fig. 5, ♂ ♀. *Syn. Lim. Jadera*, Boisd. in D'Orbigny's, Dict. H. N. Atlas, pl. 4, fig. 3, ♂ (1849). *Habitat.* Java.—*Pantoporia Reta* (*Athyma Reta*, Moore, P. Z. S. 1858, p. 12, pl. 50, fig. 3, ♂. *Syn. Athyma Gandara*, Felder, Reise Nov. Lep. iii. p. 429, ♀ (1867). Female (type), similar to same sex of *Kresna*, but differs on upperside and underside in the discal band on both wings being broader, the submarginal macular band more defined, and in having the small pale discal spot between the upper and middle medians, this latter spot being absent in both sexes of *Kresna*. *Habitat.* Sumatra.—*Pantoporia Jadava* (*Athyma Jadava*, Felder, Reise Novara Lep. iii. p. 429, ♀ (1867). Male, upperside and underside very similar to *Selenophora*, in Coll. H. Grose-Smith; female (type) in Coll. W. Rothschild. *Habitat.* Java.—*Pantoporia Amharina* (*Syn. Athyma Amhara*, Butler, Tr. Linn. Soc. Zool. 1877, p. 540. Distant, Rhop. Malay. p. 162, pl. 16, fig. 5, ♂. de Nicéville, J. A. S. Beng. 1895, p. 419. *Lim. Selenophora*, var. Snellen, Nat. Hist. Mid. Sumatra, Lep. p. 15, pl. 1, fig. 4, 5, ♂ (1892). *Habitat.* Malay Peninsula; Sumatra.—*Pantoporia Amhara* (*Athyma Amhara*, Druce, P. Z. S. 1873, p. 344, pl. 32, fig. 2, ♂. Female, upper and underside with markings similar to *Selenophora*. *Habitat.* Borneo.—*Pantoporia Assa* (*Athyma Assa*, de Nicéville, Journ. Bombay N. H. Soc. 1893, p. 42, pl. K, fig. 8, ♂. Female with ochreous-red bands. Coll. Grose-Smith. *Habitat.* N.E. Sumatra.—*Pantoporia Glora* (*Athyma Glora*, Kheil, Rhop. Nias Isl. p. 25, pl. 3, fig. 18 (1884). *Habitat.* Nias Island.—*Pantoporia Zoroastes* (*Athyma Zoroastes*, Butler, P. Z. S. 1877, p. 811, ♂ ♀. *Habitat.* Formosa.—*Pantoporia Godmani* (*Athyma Godmani*, Staudinger, Stett. Ent. Zeit. 1889, p. 63. *Habitat.* Palawan.—*Pantoporia Mæna* (*Athyma Mæna*, Felder, Wien. Ent. Monats. 1863, p. 116, ♀). *Habitat.* Burias, Philippines.—*Pantoporia Semperi* (*Athyma Mæna*, Semper, Reis. Philip. Lep. p. 139, pl. 27, fig. 4, 5, 6, ♂ ♀ (1889). *Habitat.* Mindanao.—*Pantoporia Ambra* (*Athyma Ambra*, Staudinger, D. Ent. Zeit. 1892, p. 452, ♂). *Habitat.* N. Borneo.—*Pantoporia Venata* (*Athyma Venata*, Staudinger, D. Ent. Zeit. 1889, p. 68). *Habitat.* Palawan.—*Pantoporia Karita* (*Athyma Karita*, Doherty, J. As. Soc. Bengal, 1891, p. 175, ♂. *Habitat.* Sumba Island.—*Pantoporia Hollandii* (*Athyma Hollandii*, Doherty, J. As. Soc. Beng. 1891, p. 177). *Habitat.* Sumbawa Island.

INDO-MALAYAN ALLIED GENERA.—Genus ZABANA.—Male. *Forewing* comparatively narrower and more triangular than in *Pantoporia*; costa less arched, exterior margin more oblique, uneven, posterior margin shorter; first subcostal branch emitted at two-fifths before end of cell, second at one-sixth before the end; middle discocellular short, obliquely concave, lower absent; cell open. *Hindwing* short, conically-triangular, less produced posteriorly than in *Pantoporia*, exterior margin



more obliquely convex, scalloped; abdominal margin shorter. *Body* moderately stout; palpi less robust; eyes naked. **TYPE.** Z. Urvasi.—*Zabana Urvasi* (*Athyma Urvasi*, Felder, Wien. Ent. Monats. 1860, p. 400; *id.* Reise Novara, Lep. iii. p. 429, pl. 56, fig. 4, ♂ (1866). Distant, Rhop. Malay. p. 164, pl. 16, fig. 12, ♂ (1883). *Habitat.* Malay Peninsula.

**Genus PSEUDOHYPOLIMNAS.**—Male. *Forewing* short, triangular; costa slightly arched, apex rounded, exterior margin oblique, slightly concave in the middle, uneven, posterior angle obtuse, posterior margin very slightly recurved; first subcostal branch emitted at two-fifths before end of the cell, second at one-eighth before the end; upper discocellular extremely short, middle discocellular deeply concave, lower discocellular almost erect, slender; middle median emitted at a short distance before lower end of the cell. *Hindwing* short, broadly ovate; exterior margin very convex, scalloped, anal angle rounded; precostal vein extremely long, incurved; radial wide apart from base of subcostals. *Body* moderately slender; palpi rather short, stout, laxly hairy; antennal club long and slender; eyes naked. **TYPE.** P. punctata.—*Pseudohypolimnas punctata* (*Athyma punctata*, Leech. Entom. 1890, p. 33; *id.* Butt. of China, etc., p. 176, pl. 16, fig. 5, ♂. A Mimic of the Nymphalid butterfly, *Hypolimnas Misippus*. *Habitat.* C. China.

**Genus SABANIA.**—Male. Wings comparatively broader and shorter than in typical *Pantoporia*. *Forewing* broader and more rounded at the apex; first subcostal branch emitted at two-fifths before end of the cell, second at one-sixth before the end; upper discocellular extremely short, middle outwardly-oblique, lower slender. *Hindwing* broader and more convex posteriorly, exterior margin less oblique and less scalloped; eyes naked; sexes alike. **TYPE.** S. speciosa.—*Sabania speciosa* (*Athyma speciosa*, Staudinger, D. Ent. Zeit. 1889, p. 70, pl. 1, fig. 1, ♀). *Habitat.* Palawan.

**Genus BALANGA.**—*Athyma* (part), Semper, Reisen Phil. Lep. p. 35 (1889).—**IMAGO.**—Male. *Forewing* triangular; costa slightly arched, apex rounded, exterior margin oblique, concave in the middle, scalloped; first subcostal branch emitted at two-fifths before end of the cell, second at one-seventh before the end; middle discocellular concave, long, outwardly-oblique; lower discocellular slender, recurved; two upper medians emitted immediately before lower end of the cell. *Hindwing* short, triangular; exterior margin obliquely convex, scalloped; cell open. *Body* moderate; palpi rather slender, porrect, compactly clothed below, apex pointed; antennæ slender; eyes naked; sexes alike. **CATERPILLAR.**—Heady spiny. Segments armed with two dorsal rows of branched-spines, and a lateral row of similar spines. **CHRYSALIS.**—Abdomen narrow; thorax broad, with a medio-dorsal and anterior prominence, quadrate laterally, wing-cases dilated anteriorly and posteriorly; head-piece truncate, cleft in front and laterally divergent. (Described from Semper's

figure.) TYPE. B. Kasa.—*Balanga Kasa* (Athyma Kasa, Moore, P. Z. S. 1858, p. 19, pl. 51, fig. 6, ♀. Semper, Reisen Philip. Lep. p. 135, pl. 26, fig. 1, 2, ♂ ♀, pl. A, fig. 10, larva and pupa (1889). Syn. L. Epithoe, Boisd. MS. *Habitat.* Luzon.—*Balanga Parakasa* (Athyma Parakasa, Semper, *l.c.* p. 136, pl. 26, fig. 5, 6, ♂ ♀ (1889). *Habitat.* Camotes, Phil. Isles.—*Balanga Separata* (Athyma Separata, Staudinger, Iris, 1889, p. 69). *Habitat.* Palawan.—*Balanga Gordia* (Athyma Gordia, Felder, Wien. Ent. Monats. 1863, p. 118. Semper, *l.c.* p. 137, pl. 26, fig. 7, 8, ♂; *id.* pl. 27, fig. 1, ♂. *Habitat.* Mindanao.—*Balanga Paragordia* (Athyma Paragordia, Semper, *l.c.* p. 137 (1889). *Habitat.* Bohol, Phil. Isles.—*Balanga Epimethis* (Athyma Epimethis, Felder, Wien. Ent. Monats. 1863, p. 117. Semper, *l.c.* p. 136, pl. 26, fig. 3, 4, ♂ (1889). *Habitat.* Mindoro.—*Balanga Tarpa* (Athyma Tarpa, Staudinger, D. Ent. Zeit. 1889, p. 66). *Habitat.* Palawan.

GENUS ZAMBOANGA.—Male. *Forewing* subtriangular; costa slightly arched, apex rounded, exterior margin oblique, slightly scalloped; first subcostal branch emitted at fully one-half before end of cell, second at one-sixth before the end; middle discocellular outwardly oblique and concave, lower discocellular slender, convex; middle median emitted at a short distance before lower end of cell. *Hindwing* short, triangular; exterior margin obliquely convex, scalloped. *Body* moderate; palpi slender; antennæ slender; eyes hairy; sexes alike. TYPE. Z. Gutama.—*Zamboanga Gutama* (Athyma Gutama, Moore, P. Z. S. 1858, p. 20, pl. 51, fig. 7, ♀. Semper, Reisen Phil. Lep. p. 138, pl. 26, fig. 9, 10, ♂ ♀ (1889). *Habitat.* Manilla.—*Zamboanga Cosmia* (Athyma Cosmia, Semper, Verh. N. U. K. 1878, p. 110; Reisen Phil. Lep. p. 138, pl. 26, fig. 11, 12, ♂ ♀ (1889). *Habitat.* Mindanao.—*Zamboanga Brunijni* (Limenitis Brunijni, Oberthür, Trans. Ent. Soc. 1879, p. 231, pl. 8, fig. 3, ♂. *Habitat.* Sanghir Island.

### Genus KIRONGA.

*Athyma* (sect. 2, part), de Nicéville, Butt. of India, etc., ii. p. 170 (1886).

IMAGO.—Male. *Forewing* triangular; costa slightly arched towards the end, apex rounded, exterior margin oblique, concave in the middle, scalloped, posterior margin somewhat recurved; cell fully one-half length of the wing, closed; first subcostal branch emitted at two-fifths before end of the cell, second at one-sixth before the end; middle discocellular concave, lower slender, recurved; middle median emitted at a very short distance before lower end of the cell; minute *Androconia* or scent-scales, similar to those in *Pantoporia*, are found sparingly in the same position. *Hindwing* short, triangular, costa broadly-lobed at base, thence straight to the end, exterior margin oblique, convex in the middle, scalloped, anal angle somewhat prolonged; precostal vein stout, incurved; cell area broad, open.

*Body* stout ; thorax robust ; palpi stout, compactly clothed, second joint hairy above, third joint pointed ; antennæ rather slender, with a lengthened club ; eyes hairy ; sexes similar.

TYPE.—K. Ranga.

CATERPILLAR.—(See p. 211.)

CHRYSLIS.—(See p. 211.)

### KIRONGA RANGA.

*Wet-season brood* (Plate 269, fig. 1, 1a, b, c, d, e, f, g, ♂ ♀).

*Athyma Mahesa*, Moore, Catal. Lep. Mus. E. Ind. Company, i. p. 176, pl. 5, a, fig. 7, ♂ (1857) ; *id.* Proc. Zool. Soc. 1858, p. 15. Butler, Ann. Nat. Hist. 1885, p. 304. de Nicéville, Butt. of India, etc., ii. p. 171 (1886). Davidson and Aitken, Journ. Bombay N. H. Soc. 1896, p. 254, pl. 2, fig. 4, 4a, larva and pupa.

IMAGO.—Male. Upperside dark purpurescent fuliginous-black ; freshly caught specimens with the basal two-thirds glossed with green and blue in certain lights. *Forewing* with two more or less indistinctly-defined sullied-white spots in the cell and having still less-defined intervening pale patches ; a similar discocellular patch at end of the cell ; below base of the cell are two indistinct greenish-speckled spots ; a transverse discal interrupted series of seven purpurescent-white spots, the upper three being subapical, outwardly oblique, and narrow, the third very small, the next two are situated on the middle of the disc between the medians and disposed obliquely-outward, the upper one being small, the fifth much larger and irregularly oval, the sixth and seventh narrow and disposed obliquely-inward ; beyond is a submarginal and a marginal row of more or less defined pale brown or sullied-white lunules. *Hindwing* crossed by a vein-divided inner discal purpurescent-white band, followed by a submarginal row of conical spots, which are either more or less defined, pale brown or of a sullied-white, and then by a similar coloured marginal lunular line. Underside ferruginous-brown or dusky olivescient-brown with blackish intervening patches between the markings. Both wings with white markings, as above, but more distinctly defined and olivescient-white. *Forewing* with the cell and basal marks also distinctly defined and white. *Hindwing* also with prominent olivescient-white basal marks.

Female. Upperside with the ground-colour paler than in male and of an olivescient-brown tint ; markings the same but somewhat larger and duller white. Underside as in male. Thorax and palpi above dark iridescent greenish-brown ; head and collar white-spotted ; abdomen above black with white lateral spots ; body and palpi beneath and legs greyish-white ; antennæ black.

Expanse, ♂  $2\frac{6}{10}$  to 3, ♀ 3 to  $3\frac{2}{10}$  inches.



*Dry-season brood* (Plate 270, fig. 1, larva and pupa, 1a, b, ♂ ♀).

*Athyma Ranga*, Moore, Catal. Lep. Mus. E. I. Company, i. p. 175, pl. 5a, fig. 6, ♂ (1857); P. Z. S. 1858, p. 15. de Nicéville, Butt. of India, ii. p. 172 (1886).

IMAGO.—Male. Upperside similar to the *wet-season* form. Differs only in both wings having the white discal band broader, the submarginal and marginal lunules distinct and sullied white; the submarginal row of conical spots on the hindwing being also broader. Underside dusky ferruginous-brown or olivaceous-brown; markings as in *wet-season* form, but all broader, as on the upperside.

Expanse, ♂  $2\frac{3}{10}$  to  $2\frac{4}{10}$ , ♀  $2\frac{8}{10}$  inches.

CATERPILLAR.—Head spined. Segments with a subdorsal row of branched-spines, of which the anterior are longest, and a lateral row of shorter similar branched-spines. Head and segmental spines brownish ochreous; segments green, with a pale ochreous-white band round the ninth segment. (Described from Davidson's figure, *l.c.*)

CHRYSLIS.—“Suspended perpendicularly. Abdominal segments slender, thorax larger and expanded laterally; two long sharp horns issuing from sides of the head in front, which are at first parallel and then diverge and point laterally; a prominent medio-dorsal and a thoracic process curved towards each other; and many smaller points, or tubercles. Colour mostly brilliant silver, the segments and parts being outlined with brown” (Davidson, *l.c.* 1890, 350).

HABITAT.—Nepal; Sikkim; Bhotan; Assam; Daffla Hills; Khasias; Burma; Tenasserim; South India.

DISTRIBUTION.—K. Mahesa “is a common species in Sikkim at low elevations, and occurs Eastwards as far as Sibsagar in Upper Assam, and again in South India. There is a single specimen of the dry-season form (*Ranga*) in the Indian Museum, Calcutta, from the Daffla Hills. All the specimens of *Ranga*, of which the date of capture is known, have been taken in the winter months, November, December and March” (de Nicéville, Butt. Ind. ii. 172). Mr. H. J. Elwes states that “Mr. Möller found both forms at various seasons in Sikkim from March to December, in the warm valleys up to about 3000 feet elevation, *Mahesa* as the commoner form” (Tr. Ent. Soc. 1888, 353). We possess examples of the *wet-season* form from Nepal, taken by the late General G. Ramsay. Colonel C. Swinhoe has received numerous specimens of the *dry-season* form (*Ranga*) from the Khasia Hills. Capt. E. Y. Watson obtained a single specimen at “Tilin in March, during the Chin-Lushai Expedition of 1889-90” (J. Bombay, N. H. S. 1891, 40). Colonel C. H. E. Adamson took “two specimens of *Mahesa* in December at Hpapoon on the Yunzalee River, and a single *Ranga* near Mogoung in February” (List of Burmese Butt. 23). Colonel C. T. Bingham captured a male of the *dry-season* form in the Yunzaleen Valley in November,

and males in the Hills North of Papun also in November. A male, from Siam, is in Mr. W. Rothschild's collection. Mr. Moti Ram took "two males and one female in Tavoy, Tenasserim" (J. A. S. Bengal, 1887, 423). Mr. W. Doherty took "a single male of *Mahesa* in the Karen Hills in March" (P. Z. S. 1891, 277). In South Indian specimens, the *wet-season* form, in both sexes, have the submarginal and marginal lunules of the upperside, in both wings, broader and of a dark grey colour; and on the underside all the markings are broader and dark greenish-grey; the *dry-season* female also has all the markings on the upper side broader than in that of the N.E. Indian specimens, and on the underside all the markings are also broader, the discal and submarginal band on the hindwing being coalesced posteriorly. Mr. G. F. Hampson records it as "rare on the Nilgiris, from 3000 to 4000 feet" (J. A. S. Bengal, 1888, 354). Messrs. J. Davidson and E. H. Aitken, in their Notes on the butterflies of the North Kanara District, Bombay, say "this is perhaps the commonest of the *Athymas* with us. Larvæ are found from August, feeding on *Olea dioica* and *Lonicera malabarica*, and the butterfly becomes common in September, and continues through the dry-season" (J. Bombay N. H. S. 1896, 254). "A female was noticed on the 19th September laying eggs on *Olea dioica*. Only one egg was secured, but by the most affectionate care this was successfully reared. In form the larva was exactly similar to that of *L. Procris*; in colour it was green, with a whitish band round the ninth segment" (*id.* 1890, 350). "Very rare in Travancore, only one taken at 2000 feet elevation" (H. S. Ferguson, J. Bombay N. H. S. 1891, p. 9). "Three males taken at Gersoppa Falls, Mysore, in January" (Capt. E. Y. Watson, *id.* 1890, p. 5).

HABITS and FOOD-PLANT of LARVA.—Feeds on *Olea dioica* and *Lonicera malabarica*. Habits very like those of *Limenitis Procris*, but not quite the same. It selected one of the side-nerves of a leaf and ate away the soft part on each side till the bare nerve stood out; then having barricaded the approach to this with fragments of leaf which it had contrived to cut off in feeding, mixed with excrement and silk, it rested motionless on the very point of the rib, unapproachable by ants or spiders. After the last moult it gave up these habits, and rested on the upperside of a leaf, where it was conspicuous enough. We infer that the worst enemies of this species are not birds, or parasites, but small spiders and predacious insects" (J. Davidson and E. H. Aitken, J. Bombay Nat. Hist. Soc. 1890, 350).

Of our illustrations of this species on Plate 269, fig. 1, 1a, d, e, f, g, are Sikkim males and females, and fig. 1, b, c, a S. Indian female of the *wet-season* form, and on Plate 270, fig. 1, the larva and pupa, reproduced from Mr. Davidson's drawing (*l.c.*), and fig. 1, a, a Khasia male, and fig. 1, b, a Sikkim female of the *dry-season* form.

**KIRONGA ABIASA** (Plate 270, fig. 2, 2a, ♂ ♀).

*Athyma Abiasa*, Moore, Proc. Zool. Soc. 1858, p. 16, pl. 50, fig. 7, ♂. de Nicéville, Butt. of India, etc., ii. p. 174 (1886).

*Athyma Clerica*, Butler, Trans. Linn. Soc. Zool. 1877, p. 540, pl. 69, fig. 5, ♀. Moore, Journ. Linn. Soc. Z. 1886, p. 37.

*Athyma Abiasa*, var. *Clerica*, Distant, Rhop. Malay. p. 161, pl. 16, fig. 8, ♀ (1883).

*Athyma Adunora*, Kheil, Rhop. Nias, p. 25, pl. 3, fig. 7, ♂ (1884).

IMAGO.—Male. Upperside dark olivescent-black; markings bluish-white; cilia slenderly alternated with white. *Forewing* with an ill-defined slender short bluish-white streak from lower base of the cell, followed by a less-defined blue-speckled transverse broken bar and then by a large obtusely-triangular prominent white spot before end of the cell, beyond which is a transverse discocellular blue-speckled bar; below the cell are some very obscure blue-speckled pale patches; a transverse discal interrupted series of white spots, the upper three obliquely subapical ovate spots, with a slight slender costal streak above the upper, the lower being smallest; two discal oval spots disposed obliquely outward, the upper one small, the next very large; below these are two small inwardly-oblique spots on middle of the posterior margin; beyond is a submarginal row of slender bluish-white lunules and an obscure pale brown marginal line. *Hindwing* crossed by a moderately broad bluish-white inner discal band, and an outer discal recurved row of broadly-lunate spots, followed by an obscure pale brown marginal line. Underside dusky olivescent-brown with blackish intervening patches between the veins; markings as above, deeper bluish-white; the cell-streaks, basal marks, marginal lines, and a subbasal band on hindwing also bluish-white; abdominal margin dark bluish-grey.

Female. Upperside as in the male, but with the markings somewhat narrower. Underside duller brown; markings as in the male. *Body* and palpi above olive-black, abdomen with a bluish-white band; body and palpi beneath and legs olivescent-white.

Expanse, ♂ 2 to  $2\frac{4}{10}$ , ♀  $2\frac{5}{10}$  inches.

HABITAT.—Mergui; Malay Peninsula; Nias; Sumatra; Java; Sarawak.

DISTRIBUTION.—Dr. J. Anderson took "a single male in the Mergui Archipelago during the cold weather" (J. Linn. Soc. Zool. 1886, 37). Capt. S. Pinwill obtained a female (described as a male, under the name of *Clerica*, by Mr. Butler) in Malacca. A male from Perak is in Col. Swinhoe's collection. Herr N. M. Kheil has described a male (*Adunora*) from Nias Island. A male from Sumatra is in the collection of Mr. H. Grose-Smith. The type male was taken in Java by Dr. Horsfield. Specimens of both sexes from Sarawak, Borneo, are in our own and the British Museum Collection.



CHINESE AND MALAYAN SPECIES.—*Kironga Serica* (*Athyma Serica*, Leech, Butt. of China, etc., p. 168, pl. 17, fig. 10, ♂ (1892). *Habitat.* Moupin, W. China.—*Kironga Aryata* (*Athyma Aryata*, Felder, Wien. Ent. Monats. 1863, p. 116. Semper, Reisen Philip. Lep. p. 138, pl. 27, fig. 2, 3, ♂ (1889). *Syn.* A. Aranda, Boisd. MS. (Coll. Mus. Oxford). *Habitat.* Luzon.

E. EUROPEAN, CHINESE AND INDO-MALAYAN GENERA.—Genus PARANEPTIS.—*Limenitis* (part), Ochsenheimer, Schmett. Eur. iv. p. 17 (1816); Boisduval, Ind. Méth. 1829, p. 14. *Acca* (part), Hübner. Verz. Schmett. p. 44 (1816). *Neptis* (part), Auctorum. *Neptis* (sect. 4), Felder, Neues Lep. p. 31 (1861).

IMAGO.—Male. Wings short. *Forewing* subtriangular; costa very slightly arched at the base, apex obtuse; exterior margin almost erect, very slightly convex and slightly scalloped; posterior margin long, recurved; first subcostal branch short, emitted at one-fifth before end of the cell, second at end of the cell and also short, third at two-fifths beyond the cell and terminating at the apex; upper discocellular short, second also short, bent inward and with a short projecting point at its lower end extending inward beyond the emission of the lower radial; cell area short, open; middle median veinlet straight, lower median recurved. *Hindwing* transversely narrow, outwardly rather elongated, ovate; anterior margin long, convexly-oblique to the apex; exterior margin very oblique, slightly convex and slightly but acutely scalloped, anal angle rounded; base of costal border above with a glossy satiny-grey, and a small unglossed brownish-grey patch of scales between bases of costal vein and lower subcostal; precostal vein bent outward at half its length; costal vein terminating at some distance before the apex; subcostal branch and radial at equal distances from the costal vein, radial concave at the base; cell open; lower and middle medians widely apart, the lower being emitted opposite the base of radial. *Body* slender; palpi very densely hairy; antennæ slender; eyes naked. CATERPILLAR.—Head cleft at vertex; third, fourth, sixth, and twelfth segments with two subdorsal thick spur-shaped spines. *Type.* P. Lucilla.—*Paraneptis Lucilla* (Pap. Lucilla, Denis et Schieff. Wien. Verz. p. 173 (1776). *Neptis Lucilla*, Godt. Tabl. Meth. p. 46 (1823). Pap. Camilla, Esper. Schmett. i. 2, pl. 59, fig. 1. Berge, Schmett. pl. 47, fig. 5. *Neptis innominata*, Lewis, Zool. 1872, p. 3074. *Habitat.* E. Europe.—*Paraneptis Ludmilla*, Herr. Schöff. Sch. Eur. i. 546 (1851-56). *Habitat.* Siberia; Japan.—*Paraneptis Pryeri* (*Neptis Pryeri*, Butler, Trans. Ent. Soc. 1871, p. 403. *Syn.* L. Arboretorum, Oberthür, Etud. Ent. 1876, pl. 3, fig. 3. *Habitat.* C. and N. China; Japan.

Genus KALKASIA.—Male. *Forewing* elongated, triangular; costa comparatively straight, apex convex, exterior margin very oblique and scalloped, posterior margin short, recurved; cell area long, open; first subcostal branch emitted at about one-third before end of the cell, second at one-eighth before the end; upper discocellular

outwardly-oblique, second outwardly concave, both extremely short. *Hindwing* short, obtusely ovate; apex, exterior margin, and anal angle convex, scalloped; costal border above glossy livid-grey, and with a broad unglossed brownish-grey patch of scales extending medially from the costal vein to below the second subcostal; pre-costal vein bifid, emitted above the junction of the subcostal; second subcostal emitted near base of first; radial at twice the distance beyond base of second subcostal; costal vein extending to the apex. *Body* slender; palpi densely clothed with fine long hairs; antennæ short, slender; eyes naked. TYPE. *K. Alwina*.—*Kalkasia Alwina* (Limenitis Alwina, Bremer and Grey, Schmett. N. China, p. 7 (1853). Ménétries, Catal. Mus. Petrop. pl. 9, fig. 1 (1857). Leech, Butt. China, etc., p. 201. *Syn.* L. Kæmpferi, de L'Orza, Lep. Japon. p. 40 (1869). *Habitat.* Nikko, Japan.—*Kalkasia excellens* (Neptis excellens, Butler, Cistula Entom. ii. p. 282 (1878). *Habitat.* Yokohama, Japan.—*Kalkasia Dejeanii* (Neptis Dejeanii, Oberthür, Etud. Entom. 1894, p. 15, pl. 7, fig. 61. *Habitat.* W. China.—*Kalkasia Philyra* (Neptis Philyra, Ménétries, Bull. Acad. Petr. 1859, p. 214; Schrenck's Reise Amurland, ii. p. 25, pl. 2, fig. 8 (1859). *Habitat.* Amur Land.—*Kalkasia Philyroides* (Neptis Philyroides, Staudinger, Rom. Mém. iii. p. 146 (1887); Fixsen, *id.* p. 294, pl. 14, fig. 1, 1a, ♀. *Habitat.* Amur Land.—*Kalkasia Speyeri* (Neptis Speyeri, Staudinger, Rom. Mém. iii. p. 145, pl. 7, fig. 3 (1887) ♀. *Habitat.* Amur Land.

Genus HAMADRYODES (Neptis, sect. 2, pt., Felder, Neues Lep. p. 30 (1861).—Male. *Forewing* elongate; costa very much arched, apex and exterior margin very convex, exterior margin slightly oblique and even, posterior angle very obtuse, posterior margin deeply recurved; first and second subcostal branches emitted before end of the cell; the cell area broad, open; submedian vein much recurved. *Hindwing* ovate, rather narrow; anterior margin slightly convex, apex and exterior margin very convex, exterior margin waved; pre-costal vein with a lengthened slender bifid tip; costal vein terminating before the apex; radial nearer to base of second subcostal than the latter is to the costal. *Body* slender; head, thorax, and abdomen almost naked; palpi porrect, slender, laxly clothed with short very fine hairs; antennæ with a short truncated club; eyes naked. NOTE.—The species of this genus are mimics of the Euplœine butterflies of the genus *Hamadryas* of Boisduval. TYPE. *H. Lactaria*.—*Hamadryodes ampliata* (Neptis ampliata, Butler, Ann. and Mag. Nat. Hist. 1882, p. 42. *Habitat.* New Britain.—*Hamadryodes Praslina* (Limenitis Praslina, Boisd. Voy. Astrolabe Lep. p. 131 (1832). de Nicéville, Journ. As. Soc. Bengal, 1897, p. 534, fig. Staudinger, Exot. Schmett. pl. 50. *Habitat.* New Ireland.—*Hamadryodes Lactaria* (Neptis Lactaria, Butler, Ann. Nat. Hist. 1866, p. 98. de Nicéville, Journ. Asiatic Soc. Beng. 1897, p. 535, fig. *Habitat.* Aru.—*Hamadryodes Papua* (Neptis Papua, Oberthür, Ann. Mus. Civ. Genova, 1878, p. 118. *Habitat.* Dorei, N. Guinea.—*Hamadryodes Dorcas* (Neptis



Dorcas, Grose-Smith, Novitates Zool. i. p. 354 (1894); Rhop. Exot. 1895, p. 4. *Nept.* pl. 1, fig. 7, 8. de Nicéville, l.c. p. 539. *Habitat.* Humboldt Bay, New Guinea.—*Hamadryodes Nausicaa* (*Neptis Nausicaa*, de Nicéville, Journ. As. Soc. Bengal, 1897, p. 537, fig. *Habitat.* New Guinea.—*Hamadryodes Nemeus* (*Neptis Nemeus*, de Nicéville, l.c. p. 538. fig. *Habitat.* New Britain.

Genus *ACCA*.—Hübner, Verz. Schmett. p. 44 (1816). Scudder, Proc. Amer. Acad. Arts and Sci. 1875, p. 10.—*Neptis* (part), Auctorum.—*Neptis* (sect. 5), Felder, Neues Lep. p. 31 (1861). **IMAGO**.—Male. Forewing elongate, triangular; costa arched at the base, apex rounded, exterior margin oblique, convex below the apex and almost even, posterior margin deeply concave in the middle; first subcostal emitted at about one-fifth before end of the cell, second at some distance beyond the end, both short; upper discocellular rather long, outwardly oblique, second discocellular shorter than the upper; cell area rather broad, open; two upper medians emitted at a little beyond the opposite discocellulars; lower median opposite nearly half the upper end of the cell; submedian vein deeply recurved. *Hindwing* triangularly ovate; anterior margin arched, exterior margin obliquely convex, slightly uneven; costal border basally glossy grey, with an unglossed brownish-grey patch extending medially from the costal vein to below base of subcostals, and with an elongated fusiform glandular patch of raised scales extending along the anteriorly dilated middle of the costal vein; precostal vein bifid at half its length, inner point short; subcostal branch and radial at equal distance from the costal vein; costal vein short, laterally dilated in the middle, ending at some distance before the apex. *Body* slender; head, thorax, and base of abdomen hairy; palpi very slender, finely hairy to the tip; antennæ slender, with an elongated slender pointed club; eyes naked. **TYPE**. *A. Venilia*.—*Acca Venilia* (Pap. *Venilia*, Linn. Syst. Nat. x. edit. p. 478 (1758). Clerck, Icones, pl. 32, fig. 4 (1764). Fabr. Ent. Syst. iii. i. p. 134. Cramer, Pap. Exot. iii. pl. 219, fig. B.C. *Acca Venilia*, Hübn. Verz. p. 44 (1816), Scudder, l.c. p. 100 (1875). *Habitat.* Ceram; (?) Java.—*Acca Evanesceus* (Staudinger, Exot. Schmett. p. 147, pl. 51 (1886). *Habitat.* Batchian.—*Acca mortifacies* (*Neptis mortifacies*, Butler, Trans. Ent. Soc. 1875, p. 5. *Habitat.* Cape York, Australia.—*Acca cyanifera*, Butler, Ann. Nat. Hist. 1878, p. 481. *Habitat.* New Guinea.—*Acca anceps* (*Neptis anceps*, Grose-Smith, Nov. Zool. i. p. 353 (1894). Rhop. Exot. 1895, p. 3, *Nept.* pl. 1, fig. 5, 6. *Habitat.* New Guinea.—*Acca satina* (*Neptis satina*, Grose-Smith, Nov. Zool. i. p. 352 (1894). de Nicéville, J. As. Soc. Bengal, 1897, p. 539. *Habitat.* New Guinea.—*Acca Brebissoni* (Lim. Brebissoni, Boisd. Voy. Astr. Lep. p. 132 (1832). *Neptis Brebissoni*, de Nicéville, l.c. p. 540, fig. *Habitat.* New Guinea; Waigiou.

Genus *PHÆDYMA*.—Felder, Neues Lep. p. 31 (1861). Semper, Reis. Philip. Lep. p. 143 (1889). *Acca* (part), Hübner, Verz. p. 44.—Male. *Forewing* elongated, sub-



triangular; costa very slightly arched, apex rounded, exterior margin slightly concave in the middle and very slightly scalloped, posterior margin recurved; first and second subcostal branches emitted before end of the cell; both discocellulars very short; cell open; posterior border of the underside from below the median vein glossy pale brownish-grey, and enclosing a broad elongated glossy dark bluish-grey patch of scales between the median and submedian, this patch being densely clothed, in transverse slightly ridged waves, with long very slender more or less curved sabre-shaped opaque scales, the outer curved edge of these scales being slightly but perceptibly notched. *Hindwing* broad, circular, anterior and exterior margin regularly rounded, the latter broadly scalloped, anal angle rounded; precostal vein bent inward near the end; costal vein terminating at the apex; costal and subcostals regularly arched, the subcostals emitted close to costal; costal border glossy brownish-grey, the area below the costal vein to the radial being brilliantly glossed with violet-grey scales. *Body* moderate; palpi stout, densely clothed with fine hairs to the tip; antennæ rather long, slender, club elongated; eyes naked. TYPE. P. Amphion (Heliodora, Cram.).—*Phædyma Amphion* (Papilio Amphion, Linn. S. N. x. ed. p. 486 (1758); Seba, Thesaurus iv. pl. 16, fig. 3, 4; Neptis Amphion, Aurivillius, Kongl. Vet. Akad. Handl. 1882, p. 103. *Syn.* Pap. Heliodora, Cram., Pap. Exot. iii. pl. 212, fig. E. F. Herbst. Nat. Sch. ix. pl. 241, fig. 1. Pap. pellucida, Goeze, Ent. Beyt. 1779, p. 120. Phædyma Heliodora, Felder, Neues Lep. p. 31 (1861). *Habitat.* Amboyna.—*Phædyma Shepherdi* (Nep. Shepherdi, Moore, P. Z. S. 1858, p. 8, pl. 50, fig. 1. *Habitat.* New South Wales, Australia.—*Phædyma Astrea* (Athyma Astrea, Butler, Ann. Nat. Hist. 1866, p. 99. *Habitat.* Aru.—*Phædyma latifasciata* (Neptis latifasciata, Butler, Tr. Ent. Soc. 1875, p. 4). Seba, Thesaurus iv. pl. 16, fig. 8, 9. *Habitat.* Cape York, Australia.—*Phædyma melaleuca* (Lim. melaleuca, Boisd. Voy. Astrol. Lep. p. 131 (1832). *Habitat.* Moluccas.—*Phædyma Cerne* (Athyma Cerne, Butler, Ann. N. H. 1866, p. 99. *Habitat.* Moluccas.—*Phædyma Pisiás* (Neptis Pisiás, Godman and Salvin, Ann. Nat. Hist. 1888, p. 98. *Habitat.* Soloman Islands.—*Phædyma fissigonata* (Neptis fissigonata, Butler, Ann. Nat. Hist. 1882, p. 43. Grose-Smith and Kirby, Rhop. Exot. 1895, *Nept.* p. 2, pl. 1, fig. 3, 4. *Habitat.* Soloman Islands.—*Phædyma Heliopolis*, Felder, Reise Nov. Lep. iii. p. 427 (1867). *Habitat.* Gilolo; Timor.—*Phædyma Ganina* (Neptis Ganina, Grose-Smith, Novitates Zool. i. p. 353, pl. xii. fig. 4 (1894). *Habitat.* New Guinea.—*Phædyma Nectens* (Neptis (Phædyma) Nectens, de Nicéville, J. As. Soc. Bengal, 1897, p. 548, pl. i. fig. 3, ♀. *Habitat.* Ké Islands.

## Genus ANDRAPANA.

*Neptis* (part), Auctorum.

*Neptis* (sect. 1, part), Felder, Neues Lep. p. 30 (1861).

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

IMAGO.—Male. *Forewing* elongated, subtriangular; costa very slightly arched, apex obtuse, exterior margin oblique, scalloped, posterior margin recurved; first subcostal branch emitted about one-fourth before end of the cell, second near the end; discocellulars very short; cell open; posterior border of the underside pale glossy grey, enclosing a broad elongated greyish-brown patch of scales above the submedian vein, these scales being similar to those in *Phælyma Heliodora*. *Hindwing* broad, conically-ovate; anterior margin very convex to the end, apex rounded, exterior margin obliquely convex, scalloped, anal angle rounded; with a slender glossy greyish-white basal costal band, and a broad slightly glossed violet-grey patch extending from above the costal vein to below the subcostals; precostal vein short, bent inward near its end; costal vein long, much curved, and extending to the apex; subcostal branch emitted from below first branch almost at the emission of the latter from the costal; cell area short, broad, open. *Body* rather stout; palpi rather short, and stouter than in typical *Neptis*, pilose; antennæ slender; eyes naked.

CATERPILLAR.—(Jumba) Somewhat fusiform, anterior and anal segments narrowed, the middle segments thickened laterally; armed with two dorsal long anteriorly-divergent fleshy spiny processes on the fourth segment, and two shorter posteriorly-divergent similar processes on the twelfth segment, two very short dorsal spiny tubercles on the third and sixth segment. Head cleft and pointed at the vertex.

CHRYsalis.—Suspended vertically. Abdomen slender, thorax much stouter and broader, with sharp angular dorsal ridge; wing cases expanded laterally; head-piece with two sharp points.

TYPE.—A. *Columella*.

## ANDRAPANA COLUMELLA.

*Papilio Columella*, Cramer, Pap. Exot. iv. pl. 296, fig. A, B, ♀ (1782).

*Neptis Columella*, Doubleday and Westwood, Gen. D. Lep. p. 272 (1851). Moore, Catal. Lep. Mus. E. I. Company, i. p. 166 (1857); *id.* P. Z. S. 1858, p. 7, pl. 49, fig. 5, ♂ ♀. Butler, Tr. Linn. Soc. Zool. i. p. 542 (1877).

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

*Neptis Ophiana*, Moore, Proc. Zool. Soc. 1872, p. 561, ♂. Distant, Rhop. Malay. p. 153, pl. 17, fig. 12 (1883). de Nicéville, Butt. of India, etc., ii. p. 105 (1886).

*Neptis Martabana*, Moore, Trans. Ent. Soc. 1881, p. 310, ♂ (*wet-season*).

*Neptis Nilgirica*, Moore, Journ. As. Soc. Bengal (1888), p. 353.

*Wet-season brood* (Plate 271, fig. 1, 1a, b, ♂ ♀).

IMAGO.—Male. Upperside dark fuliginous-black; markings bluish-white. Cilia alternated with white. *Forewing* with a narrow discoidal bluish-white streak, increasing in width to a broad truncate end, near which it is anteriorly more or less indented; beyond is a widely separated large broad triangular discocellular spot, a transverse curved series of six spots disposed in pairs, the two upper oval and placed obliquely before the apex, the next pair on middle of the disc between the median veinlets, its upper one somewhat elongated and oval, the lower larger and generally of a broader triangularly-oval shape, and disposed obliquely downward and outward; the third pair disposed obliquely inward, its upper one being extremely small and slender, and even sometimes entirely absent, the lower one elongated and extending inward to a point along middle of the posterior margin; beyond is a very obscure pale brownish slender sinuous inner submarginal line, then a submarginal broken row of very small decreasing lunate white spots, followed by a marginal obscure slender pale brownish lunular line. *Hindwing* crossed by a broad inner discal bluish-white band ending anteriorly in a very small spot above the lower subcostal veinlet, this upper spot being sometimes absent, and a less prominent submarginal narrower macular band, between which is a very obscure medial discal slender pale brownish lunular line, and beyond a marginal similar line; the costal border to below the subcostals glossed with silvery pinkish-grey. Underside dark brownish-ferruginous, in some almost purplish-chestnut-brown; markings as above, but all more prominent, somewhat broader, and all, including the marginal lines, tinted purplish-white. *Forewing* also with the posterior border from the lower median veinlet glossed with silvery purplish-grey. *Hindwing* also with a narrow purplish-white basal costal band and a broad subbasal radiating fascia.

Female. Upperside. Ground-colour duller black, markings the same as in male, except that the cell-streak is somewhat narrower and less indented, the spot beyond more elongatedly-triangular. Underside as in the male.

*Body* and palpi above fuliginous-black; thorax and palpi beneath, forelegs, middle and hind femora greyish-white; middle and hind tibiæ and tarsi, and abdomen beneath pale greyish-ochreous; antennæ black above, tip reddish.

Expanse, ♂  $2\frac{6}{10}$  to  $2\frac{8}{10}$ , ♀ 3 inches.

*Dry-season brood* (Plate 271, fig. 1c, d, e, ♂ ♀).

Male and female. Generally smaller than the *wet-season* brood. Upperside with markings the same, but those on the forewing comparatively larger and nearer



together. Underside. Ground-colour paler and of a uniformly brighter red; markings the same but somewhat broader and less prominent.

Expanse, ♂  $2\frac{4}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{8}{10}$  to 3 inches.

HABITAT.—Southern and Eastern Indian; Burma; Tenasserim; Siam; S. China; Malay Peninsula; Sumatra.

DISTRIBUTION.—We possess specimens of both seasonal forms from Sikkim, the Khasia Hills; Maungbhoom, Bengal; the Nilgiris, a dry-season male from Kallaur, Travancore, 1000 feet, taken in February (the S. Indian representatives—named *nilgirica*, having the white discal spots on forewing somewhat larger than in N. Eastern and Burmese examples, the upper spot of the lowest pair being also proportionately large, and on the hindwing the white discal band is also broader); a wet-season male from Burma, and a dry-season male taken in February, by Col. C. H. E. Adamson. Mr. L. de Nicéville records specimens in the Indian Museum, Calcutta, from Sikkim; Calcutta; Cachar; North Khasia Hills; Orissa; Rhutnagherry, Bangalore and Ootacamund, S. India; Mepley valley and Thoungyeen forests, Upper Tennasserim (Butt. Ind. ii. 105). “In Sikkim, it is common at low elevations from March to December” (*id.* Sikk. Gazetteer, 1894, 138). Mr. E. H. Aitken records “a few specimens taken at Mahableswhar, Bombay, in March” (J. Bombay N. H. Soc. 1886, 1333). Capt. E. Y. Watson took “a male at Kadur, Mysore, in November” (*id.* 1890, 4). A female from Ranche, and a male from Bhotan are in Mr. H. Grose-Smith’s collection, and a dry-season male from Siam in Mr. P. Crowley’s. Col. Adamson has the wet-season form from Kindat, Burma, taken in July, and the dry-season from Yemna Choung in February and November; Col. Adamson also obtained the dry-season form commonly in Upper Burma in the hilly country, especially in February and March, and the wet-season form at Bhamo and on the Upper Salween River” (MS. Note). Capt. Watson records it from Tilin in October and November, and at Tilin from December to May, taken during the Chin-Lushai Expedition of 1889-90” (J. Bombay N. H. Soc. 1891, 39). He also records “two specimens taken at Kelawa on the Chindwin River, Burma, in March” (*id.* 1897, 654). Dr. N. Manders found it “not uncommon in the Shan States, E. Burma” (Tr. Ent. Soc. 1890, 522). Cramer’s type, *Columella*, is recorded, by him, from China. Both sexes, which I have verified, were taken in Hong Kong by Mr. J. J. Walker, R.N., where it occurs sparingly in March, April, and May” (Tr. Ent. Soc. 1895, 454). Mr. de Nicéville records it as “very rare in Sumatra” (J. A. S. Beng. 1895, 410).

#### ANDRAPANA JUMBAH.

*Neptis Jumbah*, Moore, Catal. Lep. Mus. East India Company, i. p. 167, pl. 4, a, fig. 5, ♀ (1857).  
de Nicéville, Butt. of India, etc., ii. p. 106 (1886).

*Neptis Jumba*, Moore, Proc. Zool. Soc. 1858, p. 7; Lep. of Ceylon, i. p. 55, pl. 28, fig. 2, 2a, ♂ 2b, larva and pupa (1881).

*Wet-season brood* (Plate 272, fig. 1, 1a, larva and pupa; 1, b, c, d, ♂ ♀).

IMAGO.—Male. Upperside fuliginous-black, with blacker intervening spaces between the veins; markings either white, bluish-white, or sullied white. *Forewing* with a slender longitudinal cell-streak, which is slightly indented near its upper end; a contiguous broad triangular spot beyond it, a discal transverse curved series of small oval spots, of which the upper two are disposed obliquely subapical, and sometimes with an additional very slender costal streak above, the next two discal, the lower one being larger, and disposed obliquely outward, the lower pair smaller; an inner submarginal obscure pale sinuous line, a middle row of very small more or less defined whitish lunules, and an outer marginal obscure slender pale line. *Hindwing* crossed by an inner discal broader macular band, a submarginal row of more or less obscure very narrow pale lunules, and a marginal slender line; an obscure medial discal line also present; the costal border being broadly glossy silvery-grey. Underside dark ferruginous or brownish-ferruginous; markings as above, somewhat broader, and prominent, the cell-streak and discal band white, the three outer marginal lines lilacine-white. *Forewing* also with a dusky or black linear streak between the upper veins, the posterior border being glossy silvery-grey. *Hindwing* also with a short narrow basal costal lilacine-white fascia, containing a small ferruginous spot within the cell; between the white discal band and the submarginal lunules is a lower row of dusky-ferruginous or blackish spots.

Female. Upperside as in the male; markings the same, but somewhat larger, the marginal lines on forewing more distinct, and the submarginal row of narrow lunules more or less obscure white. Underside as in the male; markings very prominent, and slightly broader.

*Body* and palpi above fuliginous-black; palpi and thorax beneath, forelegs, middle and hind femora greyish; abdomen beneath and middle and hind tibiæ and tarsi pale ochreous; antennæ black, tip ochreous.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{5}{10}$  to 3 inches.

*Dry-season brood* (Plate 272, fig. 1, e, f, ♂ ♀).

Male and female. Upperside as in *wet-season* brood; the white markings somewhat broader, the marginal lines in female more defined and whiter. Underside paler ferruginous than in *wet-season* brood, markings broader, and less prominent.

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

CATERPILLAR.—Somewhat fusiform; anterior and anal segments narrowed, the middle segments being thickened laterally; armed with two dorsal long anteriorly-divergent fleshy spiny-processes on the fourth segment, and two shorter posteriorly-



divergent similar processes on the twelfth segment, also two very short dorsal spiny-tubercles on the third and sixth segment. Head cleft and pointed at the vertex. Colour brownish-purple, anal segments dark purple-brown, spotted with green, and bordering an oblique line extending laterally from anal spine to base of spine on fourth segment; two short oblique subdorsal anteriorly-oblique lateral streaks along middle segments. (Described from Dr. Thwaites drawing in Lep. of Ceylon, which was probably taken from a larva just previous to pupation.) In Mr. E. H. Aitken's Bombay drawing (our figure 1) the colour of the larva is paler, the dorsal area greenish with darker green oblique lateral stripes.

CHRYsalis.—“Suspended vertically; abdomen slender, thorax much stouter and broader, with sharp angular dorsal ridges; wing cases expanded laterally; head-piece with two sharp points. Colour varying from dark brown to dull white, suffused and tipped at points with gold” (Davidson and Aitken, Journ. Bombay Nat. Hist. Soc. 1890, 273).

HABITAT.—Eastern and Southern India; Ceylon; Burma; Tenasserim; S. Andamans.

DISTRIBUTION.—“It is very common in Calcutta; the Indian Museum possesses specimens from Cachar, Rangoon, Upper Tenasserim, Mergui, Orissa, Trevandrum, Ceylon, and South Andamans” (Butt. Ind. ii. 107). We possess specimens of both sexes from Malabar; Travancore, taken in April; Ceylon (Trincomali and Kanthalla); Rangoon; Mergui; S. Andamans. Mr. Wood-Mason records two males taken at “Silcuri, Cachar, in June and July” (J. A. S. Beng. 1886, 357). Mr. G. F. Hampson found it “not uncommon in the Nilgiris, from 3000 to 5000 feet elevation” (J. A. S. Beng. 1888, 353). Mr. H. S. Ferguson records it as “fairly common in the low country of Travancore, and up to 3000 feet in the Hills” (J. Bombay N. H. Soc. 1891, 8). In Ceylon, Capt. Hutchison says, it is “found in the Western and Central Provinces; both in the plains and up to 4000 feet elevation, in forest land, at all times, but chiefly during the S.W. Monsoon. Mr. F. Mackwood records it occurring everywhere in Ceylon; February and March in fair numbers. Joins the up-country flights” (Lep. Ceylon i. 55). Col. J. W. Yerbury obtained it on the Kandy road in October, and at Kanthalla in October, also at Trincomali in October and November.

In Burma, Col. C. H. E. Adamson records it as “common on the Arakan coast in the cold season” (List 1897, 21). Dr. J. Anderson took it in the Mergui Archipelago, at “Minthantoung, December, and Elphinstone Island in March” (J. Linn. Soc. Zool. 1886, 36).

FOOD-PLANTS OF LARVA.—According to the observations of Messrs. J. Davidson and E. H. Aitken, the larva “is a most promiscuous feeder. We found it in the Kanara District, Bombay, on *Helicteris isora*, *Grewia microcos*, *Zizyphus rugosa*,



and several other plants, from August to October" (J. Bombay N. H. Soc. 1890, 273).

HABITS OF IMAGO.—Mr. L. de Nicéville states that "it has a much bolder and stronger flight than the other species of *Neptis* occurring in Calcutta" (J. A. S. Beng. 1885, 45). Capt. Hutchison says "its flight is slow and heavy, and settles with wings open. Easy to capture" (Lep. Ceylon i. 55).

Of our illustrations of this species on Plate 272, fig. 1 represents the larva and pupa reared in Kanara by Mr. Davidson (l.c.), fig. 1a, that of the larva reared in Ceylon by Mr. Gregory, figs. 1, b, c, d, the male and female of *wet-season* form, and figs. e, f, the female of *dry-season* form.

**ANDRAPANA MAGADHA** (Plate 273, fig. 2, 2a, b, ♂ ♀).

*Neptis Magadha*, Felder, Reise Novara, Lep. iii. p. 427, ♂ (1867). de Nicéville, Butt. of India, etc., p. 100 (1886).

*Neptis Charon*, Butler, Annals and Mag. Nat. Hist. (Dec. 1867), p. 400, pl. 9, fig. 1, ♀. Distant, Rhop. Malayana, p. 155, fig. 43, ♀.

*Neptis cineracea*, Grose-Smith, Annals and Mag. Nat. Hist. 1886, p. 151, ♂.

IMAGO.—Male and female. Upperside purpurescent-black; markings bluish-white; cilia alternated with white. *Forewing* with a somewhat narrow bluish-white cell-streak and a broad short triangular spot beyond the cell; three outwardly-oblique subapical spots, the upper one being slender and short, the two lower large and oval; two medial discal similar spots, the upper one small, the other large and broad; below are two narrow ersmaller spots; beyond is a submarginal row of eight small narrow lunular spots, preceded by an inner submarginal, and followed by an outer marginal slender obscure pale lunular line. *Hindwing* with a bluish-white transverse inner discal band strongly divided by black veins, and an outer discal macular band composed of seven somewhat quadrate spots, between these bands is a medial discal slender obscure pale fascia, and beyond is a submarginal slender obscure pale lunular line. Underside paler; purpurescent-brown; the markings, as above, prominent, and opalescent bluish-white, the inner submarginal line on forewing and medial discal line on hindwing being obscurely violescent-white; hindwing also with a short basal costal bluish-white band.

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

HABITAT.—Burma; Tenasserim; Malay Peninsula; Sumatra.

NOTE.—This species is closely allied to *A. Duryodana*; it differs from it in having longer wings, and may be distinguished from it, on the forewing, by the

shorter and broader discocellular spot, and on the hindwing by the broader basal white band, and also in the absence of a subbasal virescent-white fascia, which latter is always present on both sexes of *Duryodana*. We have compared the type specimen of Felder's *Magadha* with that of *cineracea*, both of which are males, the type of *Charon* being a female.

DISTRIBUTION.—The type specimen of *cineracea*, a male, in Mr. H. Grose-Smith's collection, is recorded from Burma. A male, also from Burma, is in the Hewitson collection, British Museum. A female, taken in Burma, is in Col. C. H. E. Adamson's collection. Specimens are also in the British Museum, from Tilin Yaw, taken in December, February, March, and April, by Captain E. Y. Watson during the Chin-Lushai Expedition of 1889-90, and from Thoungyeen Valley, Upper Tenasserim, taken by Capt. C. T. Bingham. We possess a male from the Upper Mekong, Shan States, Burma, taken by Mr. R. Roberts, C.E. The type specimen of *Charon* is recorded from Singapore. A specimen from Singapore, and one from Sumatra are in Mr. P. Crowley's collection. Mr. W. Rothschild possesses Felder's type specimen of *Magadha*, which we have verified, and also one from Perak, Malay Peninsula. A female from Ardjiano is in Colonel Swinhoe's collection.

**ANDRAPANA KHASIANA** (Plate 273, fig. 1, 1a, b, ♂ ♀).

*Neptis Khasiana*, Moore, Proc. Zool. Soc. 1872, p. 562, pl. 32, fig 7, ♂. de Nicéville, Butt. of India, etc., ii. p. 100 (1886).

IMAGO.—Male. Upperside purpurescent-black; markings very small, slender, bluish-white; cilia alternated with white. *Forewing* with a very slender cell-streak, and a small triangular spot beyond; a discal transverse curved series of six small spots, two being obliquely subapical and oval in shape, two discal, the upper of which is the smallest, the second somewhat triangular, the two lower small and inwardly oblique; beyond is a very obscure inner submarginal pale sinuous line, a submarginal row of minute white oblique lunules, and then an obscure pale marginal lunular line. *Hindwing* crossed by a very narrow inner-discal macular band, and an outer-discal row of small somewhat dentate spots; a very obscure pale medial discal line, and a submarginal lunular line. Underside dark purpurescent-brown, with black intervening spaces between the veins; markings as above, all very prominent, broader, and of a deeper bluish-white. *Hindwing* also with a bluish-white basal costal band.

Female. Upperside with all the markings narrower and smaller than in the male. Underside as in male, markings narrower, as above. *Body* and *palpi* above

black; palpi and thorax beneath, forelegs, middle and hind femora grey; abdomen beneath, middle and hind tibiæ and tarsi dusky-grey.

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

HABITAT.—Bhotan; Khasia Hills; Burma.

DISTRIBUTION.—The type specimen was obtained by Major Godwin-Austen in the Khasia Hills. Colonel C. Swinhoe has received several examples of both sexes from the Khasias and Cherra Punji. "Two specimens are in the Indian Museum, Calcutta, from Buxa, Bhotan" (de N. l.c. 100). Col. C. H. E. Adamson obtained it in "Upper and Lower Burma, both in the rainy season and in the cold weather" (List, 1897, 20). Capt. E. Y. Watson took it at "Tilin; not common; during the Chin-Lushai Expedition" (J. Bombay N. H. Soc. 1891, 39). Capt. Watson also records "a single specimen taken at the foot of the Chin Hills, Burma, in March" (J. Bombay N. H. S. 1897, 654).

MALAYAN SPECIES.—*Andrapana Bataviana*, n. sp. Male. Nearest to *Columella*. Upperside. Forewing with the white spot beyond the cell larger, broader, and more conical in shape, the two subapical and the two discal spots more elongated, the latter pair placed nearer the discocellular spot; and the submarginal lunular spots obscure. Hindwing with the white discal band broader, and the submarginal macular band narrower, lunular, and somewhat obscure. Underside paler chestnut-red, the markings as above. Female. Upperside with the markings similar to male; the upper discal spot on the forewing touching the discocellular spot. Underside similar to male; the upper discal spot as on the upperside. Expanse ♂  $2\frac{4}{10}$ , ♀  $2\frac{2}{10}$  to  $2\frac{4}{10}$ . Habitat. Batavia, Java.—*Andrapana Duryodana* (Neptis Duryodana, Moore, Proc. Zool. Soc. 1858, p. 10, pl. 49, fig. 8, ♂). Syn. *Neptis Bahalla*, Pryer and Cator, Brit. North Borneo Herald, Oct. 1894, p. 260. Habitat. Borneo; Sumatra.—*Andrapana Ophianella* (Neptis Ophianella, Staudinger, Iris, 1889, p. 65). Habitat. Palawan.—*Andrapana Angara* (Neptis Angara, Semper, Reisen Phil. Lep. 143, pl. 28, fig. 8, 9, 10, ♂ ♀). Habitat. Mindanao.—*Andrapana Soror* (Neptis Soror, Semper, l.c. p. 143, pl. 28, fig. 6, 7, ♂ ♀ (1889). Habitat. Camotes; Mindoro.—*Andrapana Eremita* (Phædyma Eremita, Felder, Reise Novara, Lep. iii. p. 678 (1867). Semper, l.c. p. 142, pl. 28, fig. 3, 4, 5, ♂ ♀ (1889). Habitat. Luzon; Manilla.—*Andrapana Sarabaita* (Phædyma Sarabaita, Felder, Reise Nov. Lep. iii. p. 428 (1867). Habitat. ? Celebes.—*Andrapana Ida* (Neptis Ida, Moore, Proc. Zool. Soc. 1858, p. 10, pl. 49, fig. 7). Syn. *N. Celebensis*, Hopffer, Stett. Ent. Zeit. 1874, p. 36. Habitat. Macassar.—*Andrapana Daria* (Neptis Daria, Felder, Reise Novara, Lep. iii. p. 428, pl. 56, fig. 5, 6 (1867). Habitat. Celebes.—*Andrapana albescens* (Neptis albescens, Rothschild, Iris, Dresden, v. p. 438, pl. 7, fig. 3, ♂). Habitat. Celebes.—*Andrapana variabilis* (Neptis variabilis, Rothschild, l.c. p. 438, pl. 7, fig. 1, 2, ♂ ♀). Habitat. Celebes.



## Genus NEPTIS.

- Neptis*,\* Fabricius, Syst. Gloss. (Illiger's Mag. vi. p. 282 (1807). Horsfield, Desc. Catal. Lep. E. I. C. Expl. pl. 5, 7 (1829). Crotch, Cist. Ent. i. p. 66 (1872). Moore, Lep. of Ceylon, i. p. 54 (1881).  
*Neptis*, (part), Westwood, Gen. D. Lep. ii. p. 270 (1850). Distant, Rhop. Malay. p. 149 (1883).  
 de Nicéville, Butt. India, etc., ii. p. 75 (1886). Staudinger, Exot. Schmett. p. 145 (1886).  
 Staudinger and Schatz, Exot. Schmett. p. 152 (1887). Semper, Reis. Philip. Lep. p. 144 (1889).  
 Leech, Butt. of China, etc., p. 190 (1892).  
*Limenitis* (part), Ochsenheimer, Schmett. p. 17 (1816). Boisd. Ind. Méth. 1829, p. 14.  
*Neptis* (sect. 1, part), Felder, Neues Lep. p. 31 (1861).  
*Acca* (part), Hübner, Verz. Schmett. p. 44 (1816).  
*Philonoma* (part), Billberg, Enum. Ins. p. 78 (1820).

IMAGO.—Male. Wings short. *Forewing* subtriangular; costa much arched from the base, apex obtuse, exterior margin short, slightly obliquely-convex and scalloped, posterior margin long and recurved from the base; costal vein extending to about the middle of the margin; first and second subcostal branches very short, first subcostal emitted at about one-fifth before end of the cell, second at a short distance before its end, third at nearly half length beyond the cell and ending at the apex, fourth and fifth at about two-thirds beyond the end; upper discocellular very short and outwardly oblique; middle discocellular inwardly-oblique, concave; cell open, area broad; two upper median veinlets emitted at a considerable distance beyond the discocellulars; lower median branch from opposite discocellulars, recurved; submedian much recurved. *Hindwing* short, broadly

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\* *Historical Note on the genus Neptis*.—The genus NEPTIS of Fabricius is founded upon two species, namely, *Melicerta* and *Aceris*. The first an African species, the other a European. Billberg (Enum. Ins. p. 78 (1820) changed the name to *Philonoma*. Horsfield, in 1829, uses *Neptis* for *Aceris*. Crotch, in 1872, cites *Aceris* as type of *Neptis*, but this is disputed by Scudder (Proc. Amer. Acad. A. & Sci. 1875, 226) on the ground that *Aceris* belonged to *Nymphalis* since 1823—presuming that *Aceris* is congeneric with *Lucilla*, which, however, is not the case. Billberg's name *Philonoma* may be used for *Melicerta* (*Agatha* Cram.), which species we diagnose below, as being generically distinct from *Aceris*.

Genus PHILONOMA, Billberg, Enum. Ins. p. 78 (1820). *Neptis* (part), Fabr. Illiger's Mag. vi. p. 282 (1807). *Acca* (part), Hübner, Verz. Schmett. p. 44 (1816). *Neptis* (sect. 3), Felder, Neues Lep. p. 31 (1861). *Neptis*, Scudder, Proc. Amer. Acad. A. et Sci. Boston, 1875, p. 226. Trimen, S. African Butt. p. 268 (1887).

IMAGO.—Male. Wings comparatively shorter and broader than in typical *Neptis* (*Aceris*). *Forewing* subtriangular; first subcostal branch emitted at about one-third before end of the cell, second at one-sixth before the end, the first extending close to the costal; discocellulars outwardly oblique, short; cell open. *Hindwing* conically-ovate; anterior margin much arched at the base and oblique towards the end, apex obtuse; exterior margin obliquely-convex, scalloped; anal angle rounded; costal vein ending at one-fourth before the apex; precostal vein short, straight; subcostals and radial at equal distances from the costal. *Body* slender; palpi very slender, compactly clothed, and with but a very few fine long hairs present beneath; eyes naked. TYPE.—*P. Agatha*, Cram. (*Melicerta* Fabr.).

ovate; anterior margin very convex in the middle; exterior margin convex and scalloped; anal angle rounded; with a glossy virescent-white costal band, and an unglossed pale brown patch medially disposed from costal vein to below base of subcostals; precostal vein short, straight, emitted opposite to the subcostal, its tip slightly furcate; costal vein short, ending at fully one-third before the apex; subcostal branch emitted near to the costal, the radial at a nearly equal distance beyond; cell open, area very short and broad; lower median from opposite base of radial; two upper medians emitted at an equal distance from lower and base of the cell; submedian straight; internal vein recurved. *Body* slender; palpi ascending, slender, laxly clothed with very fine long hairs to the tip, third joint of nearly equal length of the second, third very slender and pointed; legs slender; antennæ with a gradually formed, rather short club; eyes naked. Sexes alike. TYPE. *N. Aceris*.

CATERPILLAR.—Head larger than anterior segments, vertex with two short-pointed spines, cheeks obtusely spined; third, fourth, sixth, and twelfth segments armed with a subdorsal pair of stout fleshy spiny-processes, those on the fourth segment longest.

CHRYSALIS.—Rather short; head-piece bluntly cleft in front, vertex pointed; thorax dorsally prominent and angular; dorsum angular at base; abdominal segments slightly angled dorsally; wing cases somewhat dilated laterally. (Described from S. N. Ward's original drawing of *N. Varmona*).

CHARACTERISTICS OF VARIOUS SPECIES OF NEPTIS.—In the species named *Astola*, *Adara*, and *Andamana*, the lower discal series of four spots on the forewing are placed in an inwardly-oblique regular row, as in *Varmona*, in which latter species this regularity is very decided, and which is also apparent in the Chinese *Eurynome*, as well as in the quite distinct species named *intermedia*. This characteristic is also observable in the European *Aceris*. Whereas, in *Nicobarica*, in *Ombalata*, and in the Javan species *Matuta* (= *Leucothoë*, Cramer (*nec* Linn.), the position of these four spots is different, being disposed more like those in the Genus *Andrapana*, the upper two being somewhat widely separated from the lower, the first of the upper pair being longer, and it is placed comparatively more inward, the second of the upper pair positioned obliquely downwards and outward, thus giving a visibly wider separation of the two pairs. This peculiarity of the sequence of these spots, will serve as a sure character in separating *Leucothoë* (Cram.) from *Varmona* and its allies.

#### NEPTIS ASTOLA.

*Neptis Astola*, Moore, Proc. Zool. Soc. 1872, p. 560 (*dry-season*). de Nicéville, Butt. of India, etc., ii. p. 99 (1886).

*Neptis Emodes*, Moore, Proc. Zool. Soc. 1872, p. 561, pl. 32, fig. 2 (*wet-season*).



*Dry-season brood* (Plate 274, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescient-black; markings olivescient-white; cilia alternated with white. *Forewing* with a broad cell-streak, which is slightly indented or partially broken by black scales near its end; discocellular spot large and lobately-triangular; a transverse discal curved series of short broad more or less ovate spots, and a submarginal row of seven extremely small spots, the upper five more or less rounded, the lower two lunular; an inner submarginal and an outer marginal very obscurely-defined pale line. *Hindwing* crossed by an inner discal broad band, and a submarginal rather broad band composed of quadrate spots; a medial discal and a marginal very obscure slender pale line. Underside rich dark ferruginous-red; markings as above, all being white and very slightly blackish-edged. *Hindwing* also with a short narrow white basal costal streak and a subbasal fascia. *Body* and palpi above fuliginous-black, beneath and legs greyish; antennæ blackish above, beneath and tip reddish.

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

*Wet-season brood* (Plate 274, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Wings slightly shorter and broader than in *dry-season* brood. Upperside. *Forewing* with the markings somewhat smaller and narrower, and less sharply defined, the discoidal spot more or less narrowly prolonged in the female. *Hindwing* with the submarginal macular band somewhat narrower and slightly sullied. Underside darker red than in *dry-season*; markings more prominent.

Expanse, ♂ 2, ♀  $2\frac{2}{10}$  to  $2\frac{5}{10}$  inches.

HABITAT.—W. and E. Himalayas; Khasia Hills; Upper Burma.

DISTRIBUTION.—We possess the type specimens of the *dry-season* form from Simla and Masuri; a male from Thundiani, taken in May, and a female from Kali Pani, in August, by Major J. W. Yerbury, also both sexes of *dry* and *wet-season* form from Kashmir, Masuri, and Simla, taken by Major H. B. Hellard from June to October. Also others from Nepal, Sikkim, Khasia Hills, Cherra Punji; and both sexes of the *dry* form from Upper Burma, the latter agreeing with typical *Astola*. In the British Museum are specimens from Thundiani (Yerbury), Almora, Nepal (Hardwicke), Landour, Dalhousie, and Kulu, and of the *wet* form from Tilin Yaw, November (Watson), Sikkim, July (Dudgeon). Specimens of both sexes, from Sikkim, taken by Otto Möller, in February and March, are in Mr. W. Rothschild's collection. Colonel Swinhoe has several specimens from the Khasias and Cherra Punji. Capt. A. M. Lang took it "in gardens at Umballa in winter" (Ent. Mo. Mag. 1864, 132). Major J. W. Yerbury took it in "Thundiani in September, and at Hurripur and Chittar in October" (Ann. N. H. 1888, 143). Mr. W. Doherty records it as "common all over Kumaon from 2000 to 7000 feet elevation" (J. A. S. Bengal,



1886, 125). N.W. Himalayan specimens in Mr. J. H. Leech's collection are from Chumba Valley, September; Kuti, 8500 feet, July; Narkunda, July; Kotser, July; and Dana, June.

HABITS OF IMAGO.—Capt. A. M. Lang writes that it is “common in woods and gardens in the Western Himalayas. It has a beautiful flight, floating in and out of the sunlight in the chequered shade of trees, occasionally basking on the sun-bathed foliage, or resting, in groups of half a dozen or more, on the moist fern-covered rocks in the midst of the stream in some Himalayan glen” (Ent. Mo. Mag. 1864, 132). In his MS. Notes, Capt. Lang also writes, “at Kasauli I observed it floating mostly up and down the dry watercourses, from one bramble or raspberry bush to another, in April and May.” Mr. de Nicéville writes, “to be met with everywhere, in the W. Himalayas, where there are trees, and at all seasons of the year. It has a very beautiful, floating flight, and it is a particularly pretty sight to observe two of these insects courting,—they fly round and round each other, making endless circles in the air, and with so little apparent exertion, hardly moving their wings at all, they always seem to be spread wide open” (Indian Agriculturalist, July, 1880).

#### NEPTIS ADARA.

*Neptis Adara*, Moore, Proc. Zool. Soc. 1878, p. 830 (*dry-season*). de Nicéville, Butt. of India, etc., ii. p. 97 (1886).

*Neptis Meetana*, Moore, *id.* p. 830 (*wet-season*).

*Neptis Mamaja*, Butler, Trans. Linn. Soc. Zool. 1879, p. 541, pl. 69, fig. 3, ♂. Distant, Rhop. Malayana, p. 156, pl. 16, fig. 14 ♀ (1883).

*Dry-season brood* (Plate 275, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Forewing elongate, as in *Varmona*. Upperside; markings olivescence-white, similar to *Varmona*, except that on the *forewing* the discoidal spot is, comparatively, somewhat shorter, broader, and less pointed; the discal spots smaller and narrower, and the submarginal white spots less prominent. On the *hindwing* the outer discal macular band is narrower, the medial discal and marginal pale line obscure. Underside; ground-colour brighter ferruginous than in *Varmona*; markings differ, comparatively, as on upperside, and are slightly black-edged.

Expanse, ♂  $1\frac{6}{10}$  to  $2\frac{4}{10}$ , ♀  $2\frac{2}{10}$  to  $2\frac{4}{10}$  inches.

*Wet-season brood* (Plate 275, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Wings comparatively broader than in *dry-season* brood. Upperside; markings more or less comparatively smaller, narrower, and less sharply defined, and in some extreme examples of this brood the white markings are still

smaller, narrower, and are more or less sullied. Underside dark ferruginous; markings as on upperside, very prominently black-edged.

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

HABITAT.—Burma; Tenasserim; Malay Peninsula; Sumatra.

DISTRIBUTION.—We possess specimens of the *dry-season* form from Toungoo, Moulmain, Meetan, Moolai, and Nithoung Upper Tenasserim, taken by Mr. Wood-Mason and Otto Limborg; from Sagaing, Mandalay, taken in February by Major C. H. E. Adamson; Karen Hills, taken by Signor Fea, and from Mergui, taken by Dr. J. Anderson. Of the *wet-season* form from Rangoon, taken in June by Capt. C. T. Bingham; Moolai; Chittagong, taken in August and September by Major Adamson; Bhamo, November, and Mandalay, from Signor Fea. In the British Museum are *dry-season* specimens from Tilin Yaw, taken in January, February, April, and May, by Capt. E. Y. Watson. Dr. Anderson obtained it in "Mergui in December, and on King Island in February" (J. Linn. Soc. Zool. 1886, 36).

#### NEPTIS VARMONA.

*Neptis Varmona*, Moore, Proc. Zool. Soc. 1872, p. 561 (*wet-season*); Lep. of Ceylon, i. p. 54, pl. 28, fig. 1, 1a (1881). de Nicéville, Butt. of India, etc., ii. p. 95 (1886).

*Neptis Kamarupa*, Moore, Proc. Zool. Soc. 1874, p. 570 (*dry-season*).

*Neptis Swinhoei*, Butler, Proc. Zool. Soc. 1883, p. 145, pl. 24, fig. 9, ♂ (*wet-season*).

*Neptis Eurymene*, Butler, *l.c.* p. 145, pl. 24, fig. 5, ♂ (*dry-season*).

*Neptis disrupta*, Moore, Ann. Nat. Hist. 1877, p. 39; Lep. of Ceylon, i. p. 55, pl. 28, fig. 4, 4a, ♀ (*aberration*).

*Dry-season brood* (Plate 276, fig. 1, *larva* and *pupa*; 1, a, b, c, d, ♂ ♀).

IMAGO.—Male and female. Forewings elongated and subtriangular. Upperside olivescence-black; markings white, prominent and sharply defined; cilia alternated with white. *Forewing*. Upperside with the cell-streak broad, more or less slightly indented near upper end or slightly partially divided by blackish scales; triangular spot beyond large, broad, and more or less prolonged to an acute point; discal curved series of spots large; submarginal row of white lunular spots prominent; an inner submarginal sinuous lunular line and an outer marginal lunular pale line. *Hindwing* with a broad inner-discal band, and an outer-discal broad macular band composed of quadrate spots; a medial-discal more or less obscurely-defined whitish lunular line, and a submarginal slender more defined white lunular line. Underside yellowish-ferruginous; white markings, as above, prominent, very slightly blackish-edged. *Forewing* also with an inner submarginal slender white lunular line, and an outer marginal lunular line. *Hindwing* also with a white short basal band and a short

subbasal fascia, and two marginal lunular lines. *Body* and palpi above blackish; thorax iridescent; body and palpi beneath, and legs white; antennæ above black, tip and beneath reddish.

*Wet-season brood* (Plate 276, fig. 1, e, f, g, h, ♂ ♀).

Male and female. Forewings elongated, as in dry-season. Upperside with the cell-streak narrower and the spot beyond more or less smaller; the discal spots also more or less narrower; the bands on hindwing narrower in the female, and the marginal line less defined. Underside darker ferruginous than in dry-season, the white markings more prominent and blacker edged; veins of forewing discally black lined.

Expanse (Dry), ♂  $1\frac{8}{10}$  to  $2\frac{2}{10}$ , ♀ 2 to  $2\frac{2}{10}$  inches.

(Wet) ♂ 2, ♀  $1\frac{8}{10}$  to  $2\frac{3}{10}$  inches.

CATERPILLAR.—Head larger than anterior segment, vertex with two short pointed spines, cheeks obtusely spined; third, fourth, sixth, and twelfth segments armed with a subdorsal pair of stout fleshy spiny-processes, those on the fourth segment longest. Colour pale green; face, tip of processes, and segments slightly washed with pale pinkish; a slight pinkish oblique lateral fascia from anal process; a small dark lateral spot on sixth segment.

CHRYSLIS.—Rather short; head-piece bluntly cleft in front, vertex pointed; thorax dorsally prominent and angular; dorsum angular at base; abdominal segments slightly angled dorsally; wing cases somewhat dilated laterally. Colour pale brownish-ochreous, with lateral thoracic golden spots. (Described from S. N. Ward's drawing.)

HABITAT.—E. Kumaon; Sikkim; Continental India; Ceylon.

DISTRIBUTION.—Mr. W. Doherty records *Varmona* from the "Kali Valley, Eastern Kumaon, and Haldwani in the Terai, from 1000 to 3000 feet elevation" (J. As. Soc. Bengal, 1886, 125). "In Sikkim," Mr. L. de Nicéville says, "it is a very common species, and occurs everywhere at from 7000 feet elevation to the level of the plains throughout the warm months" (Sikkim Gazetteer, 1894, 138). We possess a series of specimens of the *dry* and *wet-season* forms of this common species, as follows:—Mount Aboo, 3930 feet, West Central India; Wangui, Thanah District, November and December; Mhow, February; Malda, April; Ahmednuggur, Poona, January; Mahableshtar, May; and Bombay, November, all taken by Colonel C. Swinhoe. Coonoor, Kanara (S. N. Ward); Nilgiris (G. F. Hampson); Shevaroy Hills (Dr. J. Shortt); Quilon, Travancore, May; Mynall, Travancore, 1500 feet; Ceylon (Mackwood, Yerbury). Also of the *dry-season* form from Calcutta (Farr); Khasias (Swinhoe); Shillong, Assam, taken in May; *wet-season* form from Nowgong, Assam (Mrs. Span); Bhotan (Dudgeon); and *dry-season* form from Sikkim and



Bhotan. Two males of *dry-season* form from Tuckoor, Darjiling, 4500 feet, are in Mr. W. Rothschild's collection. Mr. de Nicéville records it from "Bombay; Kandeish District; Malda; Bangalore; Calicut; Trevandrum; Orissa; Calcutta; Silhet; Cachar; Assam; and Sikkim" (Butt. of India, ii. 95). Mr. G. F. Hampson records it from the "Nilgiris, *Eurymene* as the dry-season form of *Varmona*, and *Swinhoei* as a variety" (J. A. S. Bengal, 1888, 353). Mr. H. S. Ferguson found it "common in the Travancore Hills and Plains all the year round" (J. Bombay N. H. Soc. 1891, 8). Capt. E. Y. Watson records "numerous specimens of *Varmona* from Kathlekan, Mysore, taken in November, December, and January, and of *Swinhoei* a few specimens in December, and at Gorsoppa Falls in January" (J. Bombay N. H. S. 1890, 4). Capt. Watson also records the wet form (*Varmona*) "from Madras, taken in April and August" (J. A. S. Beng. 1890, 266). In Ceylon, Capt. Hutchison found it "widely distributed, occurring in the Hills and Plains, both in forest and cultivated land all the year" (Lep. Ceylon, i. 54). The specimen of the aberration, named *disrupta*, was taken at Ambegamoa, in the Central Province of Ceylon, by Mr. F. M. Mackwood.

HABITS OF IMAGO.—"This is by far the commonest and most widely spread of the genus. It may be found in any month of the year and anywhere (in the N. Kanara District of Bombay), frequenting gardens and cultivated land" (J. Davidson and E. H. Aitken, J. Bombay N. H. Soc. 1896, 251). "It is common in Bombay and Poona after the Monsoon, and still more so on the Hills as late as March. It frequents gardens and hedges, and has a characteristic flight, steady and straight, with jerky strokes of its wings, between which they remain stiffly expanded" (E. H. Aitken, *id.* 1886, 133). In Ceylon, Capt. Hutchison found it "widely distributed. Flight slow, floating, alights on bushes with wings generally, if not always, open" (Lep. Ceylon, i. 54).

FOOD-PLANT OF LARVA.—According to the observations of Messrs. Davidson and Aitken, made in the N. Kanara District of Bombay, "the larva feeds on various Peas" (J. Bombay N. H. Soc. 1896, 251).

Of the illustrations of this species on our Plate 276, fig. 1 represents the larva and pupa from Mr. S. N. Ward's original drawing made in Kanara; figs. 1, 1a, b, c, d, the male and female type specimen of *Kamarupa* (dry-season), and figs. 1e, f, g, h, the male and female types of *Varmona* (wet-season).

#### NEPTIS ANDAMANA.

*Neptis Andamana*, Moore, Proc. Zool. Soc. 1877, p. 586. de Nicéville, Butt. of India, etc., ii. p. 94 (1886).

*Dry-season brood* (Plate 277, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male. Upperside black; markings white, prominent. *Forewing* with

a broad white cell-streak and rather elongated dentate spot beyond, a discal curved series of widely separated spots, a submarginal row of slightly-defined slender white lunules, an inner submarginal obscure sinuous pale line, and a less apparent outer marginal line. *Hindwing* with a moderately broad white discal band, which is more or less attenuated anteriorly, and a submarginal row of very narrow whitish lunules, the medial discal and outer marginal pale line very obscure. Underside ferruginous; markings as above, including a basal and subbasal streak, all prominently white and slightly black-edged.

Female. Upperside as in male. Underside somewhat darker ferruginous than in male; markings more distinctly black-edged.

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

*Wet-season brood* (Plate 277, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Upperside olivescient-black; markings less prominent and sullied-white than in dry season. *Forewing* with the cell-streak and contiguous spot narrower, the discal series of spots smaller, the submarginal lunular line very slender. *Hindwing* with the discal band more or less narrower and attenuated anteriorly, the submarginal row of lunules very slender. Underside dusky ferruginous; markings with blacker edges.

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

HABITAT. South Andamans.

DISTRIBUTION.—Confined to the Andaman Isles, where it is, apparently, a common species. Numerous specimens are in the Indian Museum, Calcutta; we possess a series, taken by the late F. de Roëpstorff.

### NEPTIS NICOBARICA.

*Neptis Nicobarica*, Moore, Proc. Zool. Soc. 1877, p. 586. de Nicéville, Butt. of India, etc., ii. p. 94 (1886).

*Dry-season brood* (Plate 278, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside black; markings broad, white, and sharply defined. Differs from *N. Varmona*, on the *forewing*, in the discal series of spots being less curved, and separated into three distinct portions; the subapical pair less outwardly-oblique, the discal pair of more equal length and widely separated from the lower pair, the upper spot of the discal pair being also placed comparatively more inward, and the lower spot of the same pair positioned obliquely downward and outward, both the latter having their outer-edge obliquely concave; the

submarginal row of small white spots is complete and very prominent. On the *hindwing*, the inner discal band is broader, but the outer discal macular band is generally narrower, and with wider vein intersections; marginal whitish slender line lunular. Underside brighter ferruginous than in *N. Varmona*; white markings as above, prominent, and black-edged, the ordinary medial discal lunular line on hindwing being very slender and obscure, in some obsolete; the marginal lunular lines very prominent and rather broad.

Expanse, ♂  $2\frac{1}{10}$  to  $2\frac{3}{10}$ , ♀  $2\frac{2}{10}$  to  $2\frac{4}{10}$  inches.

*Wet-season brood* (Plate 278, fig. 1, d, e, f, g, ♂ ♀).

IMAGO.—Male and female. Upperside with all the markings narrower, smaller, shorter, and less prominent than in the dry-season brood. *Forewing* with the discocellular triangular spot comparatively narrower, the discal series of spots half, or, in some, less than half the size. *Hindwing* with the inner discal band half the width, the submarginal row of spots also narrower and more lunular. Underside duller ferruginous; the white markings smaller and narrower, as above.

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

HABITAT.—Nicobar Islands.

DISTRIBUTION.—We possess numerous specimens of both sexes of the *dry-season* form, taken on the Islands of Nankouri, Kamorta, and Katchall, and of the *wet-season* brood from Pulokondull, which we received from Mrs. F. de Roëpstorff. Specimens of the dry-season form, from the island of Trinkat, are also in Mr. W. Rothschild's collection. Mr. de Nicéville records it also from the islands of Takoin, Kar Nicobar, and Great Nicobar.

#### NEPTIS MAHENDRA.

*Neptis Mahendra*, Moore, Proc. Zool. Soc. 1872, p. 560, pl. 32, fig. 3, ♂. de Nicéville, Butt. of India, ii. p. 104 (1886).

*Neptis Ambigua* et *Himalayica*, Felder MS. (Coll. Rothschild).

*Dry-season brood* (Plate 279, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside black; markings white, prominent. *Forewing* with the cell-streak broad at its end and very slightly indented with black scales near upper end, triangular spot beyond very broad and obtuse, widely separated; discal series of spots large and broad, separated into three distinct portions, the subapical widening on the costa, the two median spots of nearly equal size and superposed outwardly, as in *N. Leucothoë*, Cram., submarginal row of small white spots medially interrupted, the upper series rounded, the lower lunular; inner



submarginal and marginal line very obscure. *Hindwing* with a very broad inner discal band, which widens anteriorly to the costa; an outer discal broad quadrate macular band; a medial discal obscure pale line which is whitish posteriorly, and a marginal obscure slender pale lunular line. Underside brownish-ferruginous; markings as above, and, including a basal and subbasal streak on hindwing, all prominently pure white. *Body* and palpi above black, beneath and legs greyish-white; antennæ black above, tip reddish beneath.

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

*Wet-season brood* (Plate 279, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Upperside. Ground-colour blacker; markings all smaller and narrower, especially in the male; marginal lines less defined. Underside darker brownish-ferruginous, the posterior area of forewing blackish; markings as above, but less purely white, and blackish-edged.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{3}{10}$ , ♀  $2\frac{4}{10}$  to  $2\frac{6}{10}$  inches.

HABITAT.—N.W. Himalayas.

DISTRIBUTION.—This distinct species “occurs only in the N.W. Himalayas. Mr. de Nicéville took it at Kujiah near Dalhousie, and at Ulwas, Chumba, in May. Mr. A. Graham Young obtained it in the Kulu Valley in April and May; it occurs also in Simla, Kasauli and Masuri. Major Marshall has specimens from Kashmir, 8200 feet, taken in June, Chumba in May and June, Pangi, 8000 feet, in July, and Chini in June” (de Nicéville, *l.c.* 105). We possess specimens from Simla, taken in May by Capt. A. M. Lang. Major J. W. Yerbury found it “common at Murree in August and September; seen as far as Thundiani” (P. Z. S. 1886, 360). Capt. H. B. Hellard took it at “Pangi in Busahir, in July and August, and in Kashmir in August and September” (MS. Notes). Mr. W. Doherty found it “common in Kumaon, extending from the Sarju and Kali Valleys at 2000 up to over 9000 feet near Dwali, N.W. Kumaon, and at Budhi, in N.E. Kumaon” (J. A. S. Bengal, 1886, 125). Mr. J. H. Leech possesses specimens from Kuki, July; Dana; Kujiah, 6000, June; Narkunda, April; Murree, May; and from Rala, August.

### NEPTIS YERBURYI.

*Neptis Yerburyi*, Butler, Proc. Zool. Soc. 1886, p. 360; *id.* Ann. Nat. Hist. 1888, p. 143, ♀.

*Neptis Nandina* (part\*), Moore, Catal. Lep. Mus. E. I. Company, i. p. 168; Proc. Zool. Soc. 1858, p. 9. de Nicéville, Butt. of India, etc., ii. p. 104.

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\* The type specimen of *Nandina*, figured in Catal. Lep. E. I. C. pl. 4a, fig. 7, was taken in Java by the late Dr. Horsfield, and is distinct from this species.

*Dry-season brood* (Plate 280, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescence-black; markings yellowish-white. *Forewing* with a broad entire cell-streak; discocellular spot entirely separated but contiguous, large, broad, elongate and acute at tip; discal series of spots large and elongated, the lower four disposed in a regular oblique linear series, as in *N. Varmona*; submarginal row of small lunular spots very prominent; inner submarginal and marginal slender pale line obscure. *Hindwing* with a broad inner-discal band, which is widest anteriorly, and even-edged in the male but less regular in the female; an outer-discal broad quadrate macular band, a medial-discal and a marginal slender pale lunular line. Underside brownish-ferruginous; markings as above, very prominent, the cell-streak, discoidal spot, and discal bands paler yellowish-white; the marginal lines, basal streaks, and medial discal line in the hindwing being lilacine white, and all without any trace of black edging; the subapical spots widened out to the costal border. *Body* and palpi above black, thorax iridescent; body and palpi beneath and legs greyish-white; antennæ above black, reddish beneath.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{4}{10}$ , ♀  $2\frac{6}{10}$  to  $2\frac{8}{10}$  inches.

*Wet-season brood* (Plate 280, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Upperside with the markings somewhat smaller and narrower than in dry-season brood, and of a sullied olivescence yellowish-white. Underside purpurescent brownish-ferruginous; markings white, as in dry-season, but somewhat smaller and narrow as above, and tinged with brighter lilacine.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{6}{10}$ , ♀  $2\frac{3}{10}$  to  $2\frac{6}{10}$  inches.

HABITAT.—N.W. and E. Himalayas; Khasia Hills; Upper Burma.

DISTRIBUTION.—We possess examples of this species from Campbellpore, taken by Major Yerbury; Naini Tal; Murree; dry and wet-season forms from Nepal, taken by General G. Ramsay; Sikkim, taken in March by Mr. G. C. Dudgeon; Khasia Hills, and a male from the Upper Mekong, Shan States, Burma, taken by Mr. R. Roberts, C.E.; Major H. B. Hellard obtained it in "Kashmir, in September" (MS. Note). Major J. W. Yerbury obtained it at "Dhum Tower, near Abbottabad, in October" (Ann. N. H. 1888, 143). Mr. W. Doherty records it from "Loharkhet, N.W. Kumaon, at 5000 feet elevation" (J. A. S. Beng. 1886, 125). A female, labelled Afghanistan, is in Mr. W. Rothschild's collection. Mr. de Nicéville records it as "not uncommon in Sikkim, up to 4000 feet, from April to December. The larva, as observed in Masuri, feeding on *Celtis australis*" (Sikkim Gazetteer, 1894, 138).

NEPTIS HAMPSONI.

*Neptis Kallaura* et *Nandina*, Hampson, Journ. Asiatic Soc. Bengal, 1888, p. 353, *nec* Moore.

*Neptis Nandina*, Beetham, Journ. Bombay Nat. Hist. Soc. 1890, p. 281.

*Dry-season brood* (Plate 281, fig. 1, 1a, b, ♂ ♀).

IMAGO.—Male and female. Upperside black; markings white, similar to those in wet-season *Yerburyi*, except that on the *forewing*, the cell-streak is narrower, the discocellular spot both narrower and shorter, and the discal series of spots also narrower, the subapical decreasing to the costa; submarginal lunules small. On the *hindwing* the discal and outer band are both comparatively narrower. Underside darker brownish-ferruginous; the markings, as on upperside, narrower, the subapical spots on forewing decreasing to the costa.

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

*Wet-season brood* (Plate 281, fig. 1c, d, ♂).

Male. Upperside with all the markings narrower than in the dry-season; the submarginal lunules on forewing obscure. Underside with darker ground-colour; markings similar, but narrower.

Expanse, ♂  $2\frac{2}{10}$  inches.

HABITAT.—South India.

DISTRIBUTION.—There is a specimen of both sexes of the *dry-season* brood in the British Museum from Sir G. F. Hampson's collection, labelled as having been taken on the "Northern Slopes of the Nilgiris in January and October." Also a female from Ootacamund, taken in August. We also possess a male and female taken on the Nilgiris. Colonel C. Swinhoe has a male of both the *dry* and *wet-season* brood, from the same Nilgiri collection. This is also probably the species referred to as *N. Kallaura*, by Messrs. Davidson and Aitken (Journ. Bombay Nat. Hist. Soc. 1896, 282), who "bred a specimen from a pupa found, in February, in the Supa Taluka, N. Kanara District, hanging to a leaf of *Dalbergia confertifolia*, the larva having been feeding on the creeper." Capt. E. Y. Watson records a single female (as *Nandina*), taken at Kathlekan, Mysore, in November (J. Bombay, N. H. S. 1890, 4).

NEPTIS KALLAURA.

*Neptis Kallaura*, Moore, Trans. Ent. Soc. 1881, 309 (*wet-season*). de Nicéville, Butt. of India, etc., ii. p. 103 (1886).

*Wet-season brood* (Plate 281, fig. 2, 2a, ♀).

IMAGO.—Male and female. Upperside olivescence-black; markings very pale yellow; cilia slightly alternated with grey. *Forewing* with a slender somewhat



clavate cell-streak and narrow elongated pointed lobate spot beyond; discal series of spots small and more or less rounded, the submarginal row of small lunate spots more or less apparent and incomplete; an inner submarginal sinuous pale line and a marginal line obscure. *Hindwing* with a somewhat narrow inner discal band which is narrowest at both ends; a narrower outer-discal quadrate macular band; the medial discal and marginal pale line very obscure. Underside brownish-ferruginous; markings as above, with dusky edgings; the cell-streak and discal band on both wings pale yellow, the other markings on both wings and the basal streaks on hindwing being pale lilacine-grey; the discal band on hindwing narrowest at each end, and the medial-discal slender line bent upward to the costa. *Body* and palpi above black; thorax and palpi beneath and legs greyish-white; abdomen beneath ferruginous; antennæ black above, reddish beneath.

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

*Dry-season brood* (Plate 281, fig. 2b, ♀).

Female. Upperside; markings yellowish-white. *Forewing* with the cell-streak broader than in *wet-season* brood; discal spots more elongated, the middle pair more truncate exteriorly. *Hindwing* with broader inner-discal band; the outer band similar. Underside; ground-colour the same; markings broader as above, otherwise as in *wet-season*.

Expanse,  $2\frac{2}{10}$  inches.

HABITAT.—Travancore; Mysore; S. India.

DISTRIBUTION.—The type specimens were taken by Mr. Bourdillon on the Kallaur road, at 1200 feet elevation, Travancore, in April, and also at Mynall, 2700 feet elevation. A female, in the Indian Museum, Calcutta, is recorded from Trevandrum (Butt. Ind. 103). A female of the dry-season brood, taken by Capt. E. Y. Watson at Kathlekan, Kadur, Mysore, in November, is in the British Museum. Mr. H. S. Ferguson records it as rare in Travancore. Taken on the Hills near Mynall Estate and also on the high range (J. Bombay N. H. S. 1891, 8).

Our illustrations of this species on Plate 281, fig. 2, 2a, represents the female of *wet-season*, and fig. 2, b, the female of *dry-season* brood.

#### NEPTIS CLINIA.

*Neptis Clinia*, Moore, Proc. Zool. Soc. 1872, p. 563, pl. 32, fig. 5, ♂ (*dry-season*).

*Neptis Mananda*, Moore, Proc. Zool. Soc. 1877, p. 586, pl. 58, fig. 4, ♀ (*wet-season*). de Nicéville, Butt. of India, etc., ii. p. 101 (1886).

*Dry-season brood* (Plate 282, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescence-black, with blacker inter-

vening spaces between the veins; markings yellowish-white, cilia very slightly alternated with white. *Forewing* with a moderately broad yellowish-white cell-streak and a very contiguous elongated pointed streak beyond; a discal transverse curved series of clearer yellowish-white large spots; a submarginal row of slightly-defined whitish slender lunules, an inner submarginal obscure pale slender sinuous line, and an outer marginal lunular line. *Hindwing* crossed by a broad clear yellowish-white discal band, a submarginal very narrow sullied-white linear band; a less distinct slender pale medial discal line and an outer marginal line. Underside deep chestnut-red; markings as above, prominent; the slightly-confluent discoidal streak, and discal band on both wings yellowish-white; the marginal lines, the medial-discal line, and the two basal streaks on the hindwing being purpurescent-white. *Body* and palpi above fuliginous-black, beneath and legs pale greyish-white; antennæ black, tipped with red.

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

*Wet-season brood* (Plate 282, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Upperside. *Forewing* with the sullied-white cell and contiguous streak comparatively narrower, narrowest in the female, the latter more elongated; the discal spots more or less much smaller. *Hindwing* with the discal band somewhat narrower, the sullied brownish-white submarginal band more linear in the male. Underside with the ground-colour darker chestnut-red than in dry-season brood; markings as above.

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

HABITAT.—South Andamans.

DISTRIBUTION.—Confined to the Andaman Isles. Numerous specimens were taken at Port Blair by the late Mr. F. de Roëpstorff. We possess a series of both sexes of the *wet-season* form, and two males (types of *Clinia*) which we have assigned as being the *dry-season* form—the originally cited locality of which is erroneous,—and a female of the latter form from the Andamans.

Of our illustrations of this species on Plate 282, figs. 1, 1a, b, c, are male and female of the *dry-season* form—the male being the type specimen of *Clinia*; and figs. 1, d, e, f, g, the male and female type specimens of *Mananda*, the *wet-season* form.

#### NEPTIS SUSRUTA.

*Neptis Susruta*, Moore, Proc. Zool. Soc. 1872, p. 563, pl. 32, fig. 4, ♂ (*wet-season*). de Nicéville, Butt. of India, etc., ii. p. 103 (1886).

*Neptis Cacharica*, Butler, Trans. Ent. Soc. 1879, p. 3, ♀ (*dry-season*).

*Neptis leuconata*, Butler, Trans. Linn. Soc. Zool. 1879, p. 541, pl. 69, fig. 1, ♀ (*dry-season*). Distant, Rhop. Malay. p. 154, pl. 17, fig. 14 (1883).

*Dry-season brood* (Plate 283, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescence-black, with blacker intervening spaces between the veins; markings yellowish-white. *Forewing* with a broad cell-streak and elongated contiguous spot, discal curved series of spots rather large and oval; submarginal lunules slender and slightly defined, inner submarginal sinuous line and outer marginal pale line very obscure. *Hindwing* with a broad inner-discal band, and a narrower outer-discal linearly-lunular band; medial-discal and marginal pale line very obscure. Underside brownish-ferruginous; markings as above, prominently white; cell-streak and elongated spots slightly conjoined; inner and outer marginal line on forewing, basal streaks and medial discal sinuous line, and outer marginal lines on hindwing lilacine-white.

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

*Wet-season brood* (Plate 283, fig. 1, d, e, f, g, ♂ ♀).

Male and female. Upperside; ground-colour duller olivescence-black; with somewhat more or less narrower and smaller markings, which are more or less sullied fuliginous-white, the outer discal band on hindwing distinctly more fuliginous and linear. Underside darker brownish-ferruginous; markings brighter and washed with purpurescent-white.

Expanse, ♂  $2\frac{1}{10}$  to  $2\frac{3}{10}$ , ♀  $2\frac{3}{10}$  to  $2\frac{4}{10}$  inches.

HABITAT.—Kumaon; Sikkim; Assam; Khasia and Naga Hills; Burma; Tenasserim; Malay Peninsula.

DISTRIBUTION.—It is recorded by Mr. W. Doherty from "Kali Valley, 2-3000 feet elevation, Kumaon" (J. A. S. Beng. 1886, 125). In our own collection are several males of the *dry-season* form from Sikkim, taken in March by Mr. G. C. Dudgeon, both sexes from Cherra Punji, Khasias, males from the Upper Mekong, Shan States, Burma, taken by Mr. R. Roberts, C.E., and a female from Elphinstone Island, Mergui, taken in March by Dr. J. Anderson. Also both sexes of the *wet-season* form from Sikkim, taken in July, both sexes from the Khasias, a male from Bayah Chong, Burma, taken in February by Colonel C. H. E. Adamson, and a female from Chittagong Hills, taken in August. Colonel Swinhoe has numerous specimens from Cherra Punji and the Khasias. Both sexes of the *dry-season* form from Tuckvor, Darjiling, taken in May, males of both forms from the Naga Hills, and a male of the *wet* form from Muong Gnow, Shan States, taken in July, are in Mr. W. Rothschild's collection. Colonel Adamson records it as "common in the hilly parts of Burma" (List 1897,



20). The type specimens of *Susruta*, *Cacharica*, and of *leuconata* from Malacca, specimens from Tiliu Yaw, taken in March by Capt. E. Y. Watson, and a female from Pegu, are in the British Museum. Mr. de Nicéville records "specimens in the Indian Museum, Calcutta, from Sikkim, Assam, and Upper Tenasserim" (*l.c.* 103). Also, that it is "a common species in Sikkim, occurring throughout the warm months, up to 5000 feet elevation" (Sikkim Gazetteer, 1894, 138). Males of wet-season form from Perak, Sumatra, and Borneo, are in Mr. H. Grose-Smith's collection.

Of our illustrations of this species on Plate 283, figs. 1, 1a, b, c, are from typical *Cacharica*—the *dry-season* form, and figs. 1d, e, f, g, from typical *Susruta*—the *wet-season* form.

#### NEPTIS SOMA.

*Neptis Soma*, Moore, Proc. Zool. Soc. 1858, p. 9, pl. 49, fig. 6, ♀ (*wet-season*). de Nicéville, Butt. of India, etc., ii. p. 102 (1886).

*Dry-season brood* (Plate 284, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescence-black, with blacker intervening spaces between the veins; markings dull olivescence-white. *Forewing* with the cell-streak broadly truncate at its end, the discocellular triangular spot well separated and rather short in the male, longer in the female; a curved discal series of ovate spots, and a submarginal row of very small lunular spots; an inner submarginal pale sinuous line, and a less apparent outer marginal line. *Hindwing* with an inner discal moderately broad band, and a narrow outer discal lunular band; a medial discal and a submarginal slender obscure pale line. Underside deep purplish ferruginous, darkest in the male; markings as above, very prominent; cell-streak well separated from discocellular spot; inner submarginal line on the forewing, basal and subbasal streak, a medial-discal and outer marginal lines on hindwing lilacine white.

*Wet-season brood* (Plate 284, fig. 1d, e, f, ♂ ♀).

Male and female. Upperside with the cell-streak and triangular spot narrower, the discal spots smaller, the bands on hindwing also much narrower, and fuliginous-white. Underside richer purplish-ferruginous; markings as above, otherwise as in *dry-season*.

Expanse, ♂  $2\frac{4}{10}$ , ♀  $2\frac{5}{10}$  to  $2\frac{6}{10}$  inches.

HABITAT.—Kumaon; Sikkim; Assam; Silhet; Khasia Hills.

DISTRIBUTION.—Mr. W. Doherty records it from the "Sarju, Gori, and Kali Valleys from 2000 to 4000 feet elevation, in Kumaon" (J. A. S. Beng. 1886, 125). We possess both sexes of the *dry-season* form from the Khasia Hills, and males of

the wet-season form from Sikkim, taken by Mr. G. C. Dudgeon, Silhet, Cherra Punji, Khasias, and a female from Nowgong, Assam. Specimens from Silhet, including the type female, are in the British Museum.

### NEPTIS ADIPALA.

*Neptis Adipala*, Moore, Proc. Zool. Soc. 1872, p. 563, pl. 32, fig. 8, ♂ (*dry-season*); *id.* P. Z. S. 1878, p. 832. de Nicéville, Butt. of India, etc., ii. p. 102 (1886).

*Neptis gononata*, Butler, Trans. Linn. Soc. Zool. 1879, p. 541, pl. 69, fig. 2, ♂ (*wet-season*). Distant, Rhop. Malay. p. 154, pl. 18, fig. 2, ♂ (1883).

*Dry-season brood* (Plate 285, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside olivescient-black, with blacker intervening spaces between the veins; markings clear olivescient-white, very prominent and sharply defined; cilia alternated with white. *Forewing* with a narrow cell-streak and rather elongated narrow contiguous spot; discal curved series of spots moderately small, the upper series oval, the lower broadly ovate or rounded and somewhat obliquely truncate in the male, and more outwardly truncate in the female; a submarginal row of small lunular spots, a slightly-defined inner submarginal slender pale sinuous line and an outer marginal lunular line. *Hindwing* with a moderately broad inner-discal band, and an outer-discal narrower band formed of quadrate spots; a slightly-defined medial-discal and a submarginal pale line. Underside rich purplish-ferruginous; markings as above, all very prominent; the cell-streak and spot generally more or less partially confluent; the inner submarginal and outer marginal line on forewing, the medial-discal line, submarginal line, a more or less defined outer marginal line, and a basal and subbasal streak on hindwing being lilacine-white.

Expanse, ♂  $2\frac{2}{10}$  to  $2\frac{4}{10}$ , ♀  $2\frac{5}{10}$  inches.

*Wet-season brood* (Plate 285, fig. 1d, e, f, g, ♂ ♀).

Male and female. Upperside blacker than in dry-season; the markings smaller, narrower, and somewhat less sharply defined. Underside richer purplish-ferruginous, markings as above, otherwise as in dry-season.

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

HABITAT.—Sikkim; Assam; Khasia and Naga Hills; Burma; Tenasserim; Malay Peninsula.

DISTRIBUTION.—We possess males of the *dry-season* form from Sikkim, both sexes from the Khasias, a male of the *wet-season* form from Tounghoo, Burma, and

also both sexes from the Khasias. Colonel Swinhoe has a series of both the dry and wet-season form from Cherra Punji and the Khasias. A female of the wet form from Kathapa, Burma, is in Col. Adamson's collection. Mr. de Nicéville records it from "Sikkim, Sibsagar, Upper Assam, Naga and Khasia Hills, and Upper Tenasserim" (*l.c.* p. 102). Specimens of the dry-season form, from Tilin Yaw, taken in April, and of the wet form, taken in December, January, and March, and Karen Hills in December, by Capt. E. Y. Watson, the dry form from Upper Tenasserim, taken by Mr. J. Wood-Mason, the wet form from Atavan Valley, Burma, taken in February by Capt. C. T. Bingham, and also the type of *gononata* from Malacca, are in the British Museum. Dr. J. Anderson took it on Thaing Island, Mergui, in January. Males of the dry-season form from Gunong Ijang, Perak, are in Mr. W. Rothschild's collection, and a male of the wet form from Perak in Col. Swinhoe's collection.

Of our illustrations of this species on Plate 285, figs. 1, 1a, is from the type male *Adipala*, and figs. 1b, c, the female, both being the dry-season form; figs. 1d, e, f, g, are typical *gononata*, the wet-season form, from Burma.

#### NEPTIS NATA.

*Neptis Nata*, Moore, Catal. Lep. Mus. East India Company, i. p. 168, pl. 4a, fig. 6, ♂ (1857); Proc. Zool. Soc. 1858, p. 10. Distant, Rhop. Malayana, p. 154, pl. 18, fig. 1, ♂ (1883). de Nicéville, Butt. of India, etc., ii. p. 100 (1886).

*Neptis Duryodana*, var. Distant, *l.c.* p. 155, pl. 16, fig. 15, ♀.

*Neptis fulva*, Pryer et Cator, British North Borneo Herald, Oct. 1894, p. 260.

*Dry-season brood* (Plate 286, fig. 1, 1a, b, c, ♂ ♀).

IMAGO.—Male and female. Upperside deep purpurescent-black; markings bluish-white, very prominent, and with sharply-defined edges; cilia alternated with white. *Forewing* with the cell-streak broadly truncate at end, the broad discocellular spot beyond elongated to an acute point; discal curved series of spots of moderate size, the subapical rather elongated and oval, the lower four disposed linearly-oblique, the upper one small, oval, and placed very near the submarginal lunules, the two lowest smallest and narrow, the second being broad; a submarginal row of small white lunular spots, which are narrowest in the female, an inner submarginal slender sinuous obscure pale line, and a marginal obscure lunular line. *Hindwing* with a somewhat narrow inner-discal band, which ends at the upper subcostal vein, and a narrower outer-discal macular band; a medial-discal obscure pale slender lunular line, and a marginal even line; base of costa in male broadly glossy silvery-



grey, and with a duller grey medially disposed patch of scales from the costal vein to below base of the radial. Underside dusky olivaceous purplish-brown; markings as above, prominent, all bluish-white, except the inner and outer marginal line on forewing, and the medial discal and marginal line on the hindwing, as well as its two basal streaks, which are lilacine-grey. *Body* and palpi above black, thorax iridescent; abdomen above with a basal slight bluish-grey band; palpi and thorax beneath, forelegs, middle and hind femora bluish-grey; abdomen beneath, middle and hind tibiæ and tarsi pale ochreous-brown.

*Wet-season brood* (Plate 286, fig. 1, d, c, f, g, ♂ ♀).

Upperside with all the markings somewhat narrower; underside with the ground-colour reddish-brown; markings as above, except that on the hindwing the medial-discal white band extends anteriorly above the upper subcostal vein.

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

HABITAT.—Lower Burma; Tenasserim; Malay Peninsula; Sumatra; Borneo.

NOTE.—This species has somewhat the appearance of *Andropana Duryodana*, on both the upper and underside, even to the termination at the subcostal of the medial discal white band on the hindwing, but is readily distinguishable by the regular inward sequence of the four lower discal white spots on the forewing, whereas, in *A. Duryodana* the upper two of these spots are widely separated and disposed obliquely outward.

DISTRIBUTION.—Specimens were taken by Dr. J. Anderson in "Mergui, and at Minthantoung, Lower Tenasserim, in December" (Journ. Linn. Soc. Zool. 1886, 36). We possess a Burmese male. It occurs in the Malay Peninsula; Capt. Pinwill took it in Malacca. We have it from Singapore, Sumatra, Borneo and Sarawak. Colonel C. Swinhoe has it from Perak, and Nias Island. Mr. D. Cator possesses a series taken at Sandakan, N. Borneo, from January to August.

INDO-MALAYAN AND OTHER SPECIES OF NEPTIS.—*Neptis Aceris* (Pap. *Aceris*, Lepechin, *Tagenb. der Russ. Reise*, p. 203, pl. 17, fig. 5, 6 (1771-74). *Esper*, *Eur. Schmett.* i. 2, pl. 81, fig. 3, 4 (1783). *Fabr. Ent. Syst.* iii. i. p. 245 (1793). *Neptis Aceris*, *Fabricius*, *Illiger's Mag.* vi. p. 282 (1806). *Syn. Pap. Sappho*, *Pallas*, *Reise*, i. p. 471, No. 62 (1771). *Pap. Plautilla*, *Hübner*, *Eur. Schmett.* i. pl. 21, fig. 99, 100 (1799). *Habitat.* E. Europe; ? Amurland.—*Neptis intermedia*, *Pryer*, *Cistula Entom.* ii. p. 231, pl. 4, fig. 1 (1877). *Habitat.* N. China; Japan.—*Neptis Eurynome* (?*Pap. Hylas*, ♂-*nec* ♀), *Linn. Syst. Nat.* x. p. 486, No. 173 (1758). *Syn. Pap. Leucothoë*, *Clerck*, *Icones*, iii. (ined.) pl. 5, fig. 4, *sinistræ*. *Nym. Phal. Aceris* (ex *Indie*), *Esper*, *Eur. Schmett.* i. pl. 82, fig. 1, ♀ (1783). *Pap. Leucothoë*, *Donovan*, *Ins. China*, pl. 37, fig. 3, ♀ (1799). *Limenitis Eurynome*, *Westwood*,

2nd. Edit. Donovan. Ins. China, p. 66, pl. 35, fig. 4 (1842). *Neptis Eurynome*, Moore, Proc. Zool. Soc. 1874, p. 570. A female, identical with this species, labelled "*Leucothoë*, 780," is in Linnæus's Cabinet, possessed by the Linnean Society of London. Clerck's figure (l.c.), which we have examined, is also identical. *Habitat.* Hongkong; Chusan; S. China; W. and C. China; Formosa.—*Neptis Sangaica*, Moore, Annals of Nat. Hist. 1877, p. 47. *Habitat.* Shanghai, N. China.—*Neptis Hainana*, Moore, Proc. Zool. Soc. 1878, p. 697. *Habitat.* Hainan Island.—*Neptis Mindorana*, Felder, Wien. Ent. Monats. 1863, p. 110. Semper, Reis. Phil. p. 146, pl. 29, fig. 5, ♀. *Habitat.* Mindora.—*Neptis Ilocana*, Felder, Wien. Ent. Monats. 1863, p. 111. Semper, l.c. p. 147, pl. 29, fig. 1-4. *Habitat.* Luzon.—*Neptis matuta* (Pap. *Leucothoë*, Sulzer, Gesch. Ins. p. 36, pl. 18, fig. 2, 3 (1776)—*Dry-season*). Pap. *Leucothoë*, Cramer, Pap. Exot. iv. p. 15, pl. 296, fig. E. F. (1792); Herbst, Nat. Sch. ix. p. 91, pl. 239, fig. 5, 6—*Wet-season*). *Acça matuta*, Hübner, Verz. bek. Schmett. p. 44 (1816). *Neptis Leucothoë*, Moore, Proc. Zool. Soc. 1872, p. 561—*Wet-season*). *Neptis Surakarta*, Moore, *id.* p. 561—*Dry-season*). *Neptis Aceris*, Horsf. Catal. Lep. E. I. C. pl. 7, fig. 9, larva and pupa (1829). *Habitat.* Java; Sarawak; Borneo.—*Neptis Ombalata*, Kheil, Rhop. Nias, p. 24, pl. 3, fig. 15, 16 (1884). *Habitat.* Nias Island.—*Neptis Engano*, Doherty, Journ. As. Soc. Bengal, 1891, p. 27. *Habitat.* Engano Island.—*Neptis Papaja*, Moore, P. Z. S. 1874, p. 570. *Habitat.* Sumatra.—*Neptis Nandina*, Moore, Catal. Lep. E. I. Company, i. p. 168, pl. 4a, fig. 7, ♂ (1857). *Habitat.* Java.—*Neptis Nisæa*, de Nicéville, J. As. Soc. Bengal, 1894, p. 7, pl. 1, fig. 9, ♂. *Habitat.* Java.—*Neptis Clinioides*, de Nicéville, *id.* 1894, p. 6, pl. 1, fig. 8, ♂. *Habitat.* N.E. Sumatra.—*Neptis Florensis*, Snellin, Tijds. v. Entom. 1891, p. 238. *Habitat.* Flores.—*Neptis Sumba*, Doherty, J. As. Soc. Bengal, 1891, p. 174. *Habitat.* Sumba Island.—*Neptis Meridiei*, Doherty, *id.* 1891, p. 26. *Habitat.* Engano Island.—*Neptis Kechil*, Pryer and Cator, Brit. North Borneo Herald, Oct. 1894, p. 260. Allied to *N. Nata*. *Habitat.* N. Borneo.—*Neptis Tibetana*. Male. *Dry-season brood*. Upperside most like typical dry-season male of *Soma*; markings white. *Forewing* with the cell-streak and its well-separated discocellular spot slightly broader, the discal curved series of spots larger and broader, the subapical pair with outwardly-oblique edges. *Hindwing* with the inner-discal band slightly broader, the outer band narrow. Underside rich brownish-ferruginous. *Forewing* with the cell-streak and spot conjoined, being only partially separated by a slightly-defined speckled discocellular bar of the ground-colour; the discal curved series of spots as above; the middle marginal lunular line narrow. *Hindwing* with the inner-discal band, as above, of equal width across, in *Soma* it widens anteriorly; the outer discal band narrower; other markings similar. Expanse, ♂  $2\frac{3}{10}$  inches. *Wet-season brood*. Male. Upperside most like typical wet-season *Susruta*. *Forewing* with

the cell-streak and discocellular spot sullied-white and narrow; the upper and lower discal spots, as in dry-season, larger. *Hindwing* with the inner discal band broader, the outer discal band narrow, but distinctly white. Underside dusky brownish-ferruginous; markings as above, broader. Expanse, ♂  $1\frac{8}{10}$  to  $2\frac{2}{10}$  inches. (Described from several W. China examples in Mr. Walter Rothschild's collection). *Habitat.* Eastern Tibet, W. China.—*Neptis Sonula*, Staudinger. *Habitat.* Palawan.—*Neptis Boholica* (N. gononata, Semper, Reis. Phil. Lep. p. 145, pl. 29, fig. 8, 9, ♂ ♀ (1889). *Habitat.* Bohol.—*Neptis pseudosoma* (N. soma, Semper, *id.* p. 146, pl. 29, fig. 10, 11, ♂ ♀). *Habitat.* Mindanao.—*Neptis Pampanga*, Semper, *id.* p. 146, pl. 29, fig. 6, 7, ♂ ♀ (1889). *Habitat.* Luzon.—*Neptis Cymela*, Semper, *id.* p. 145, pl. 29, fig. 12, 13, ♂ ♀ (1889). *Habitat.* Luzon.—*Neptis Cyra*, Semper, *id.* p. 148, pl. 29, fig. 14, ♀. *Habitat.* Luzon.



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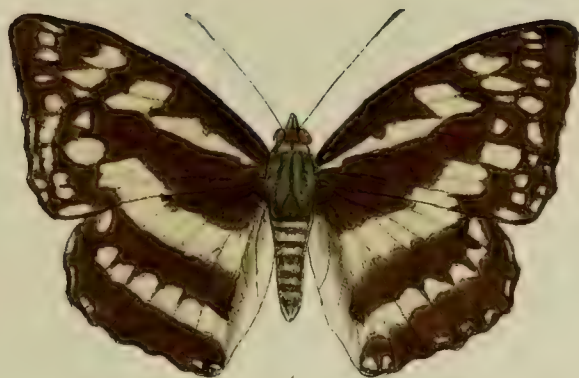


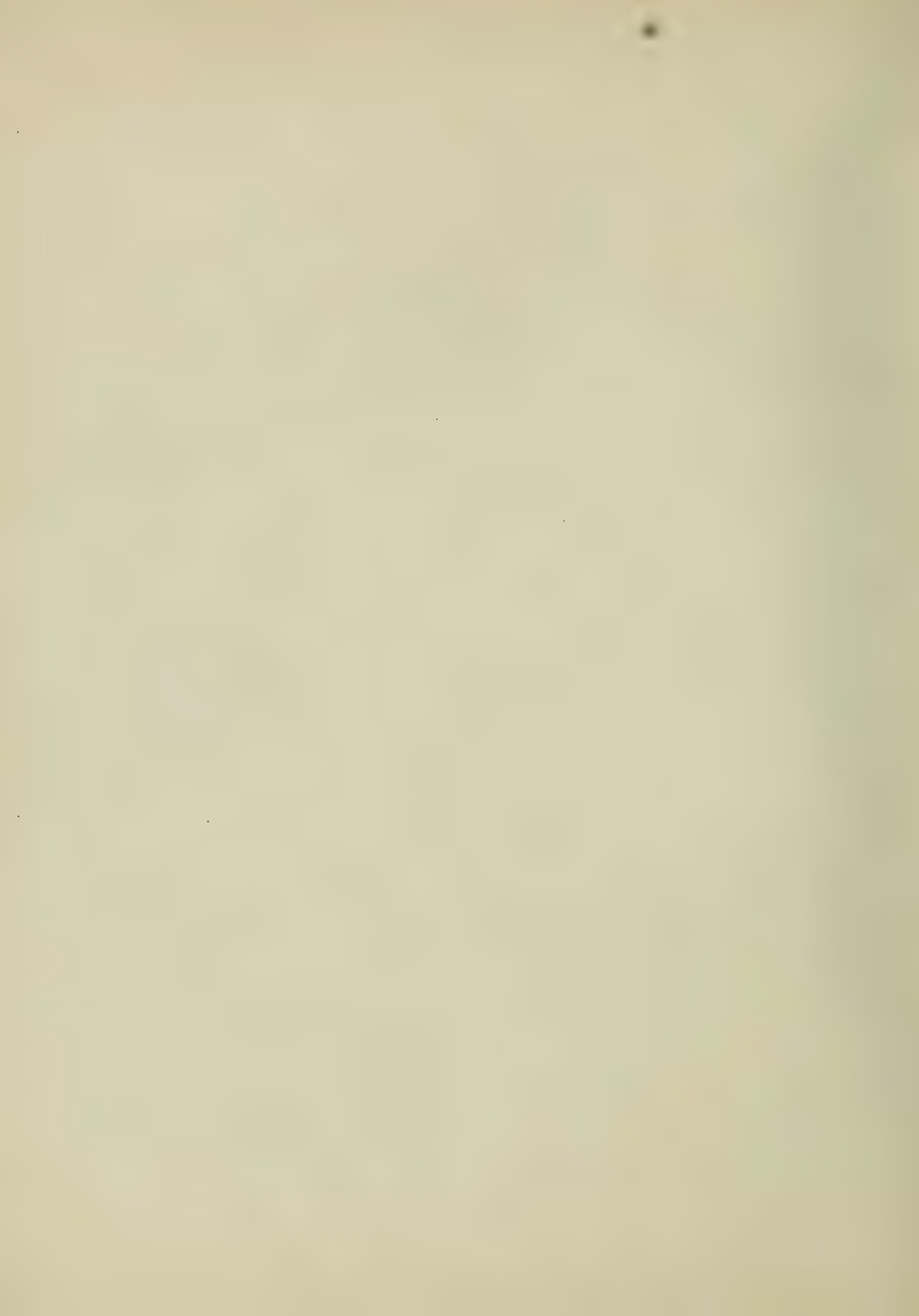






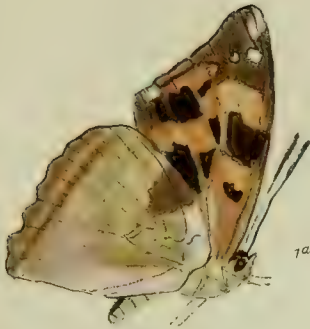








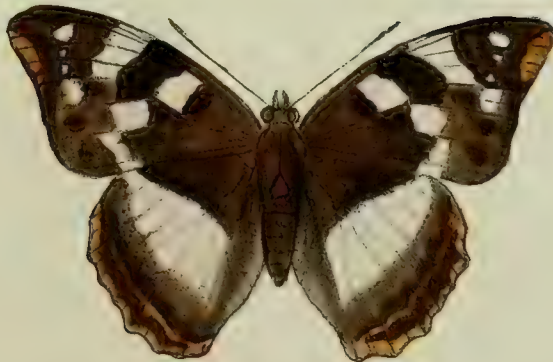
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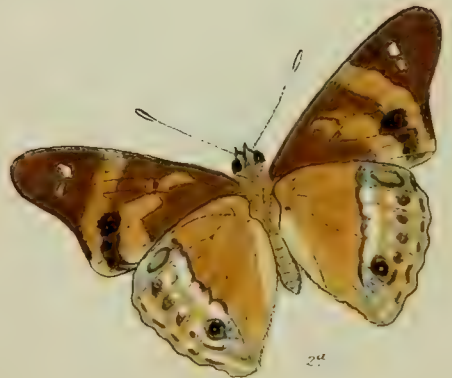
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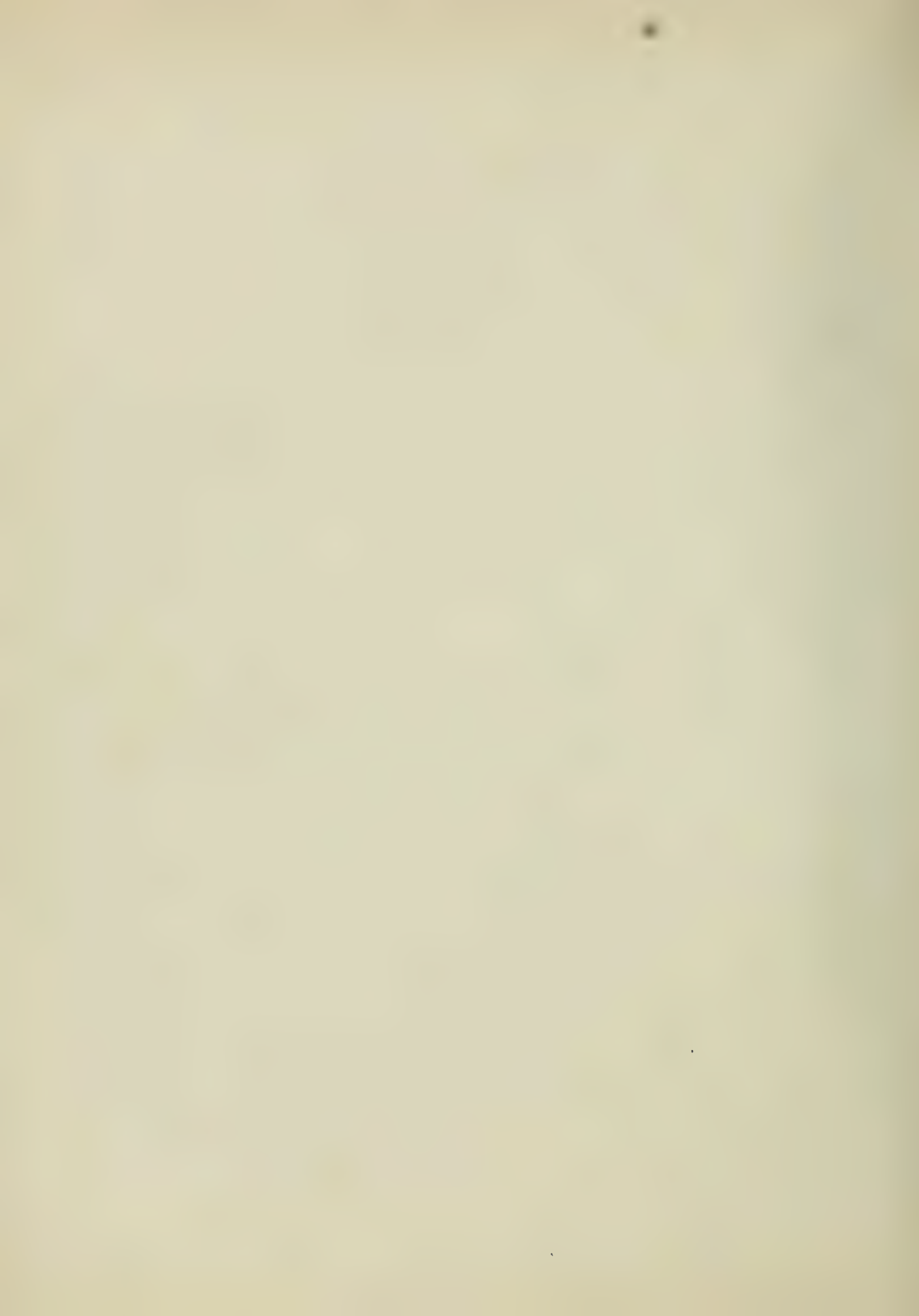


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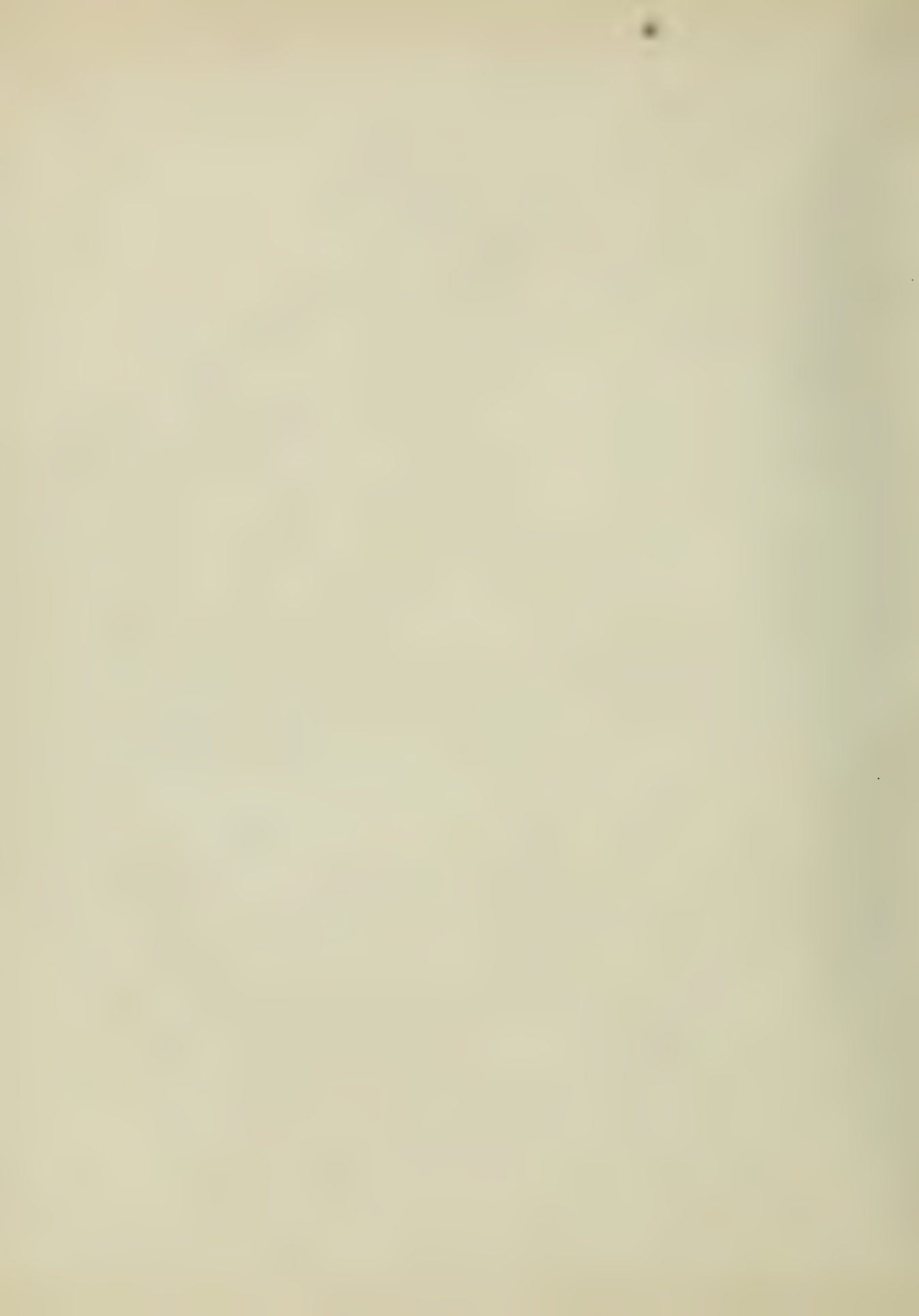


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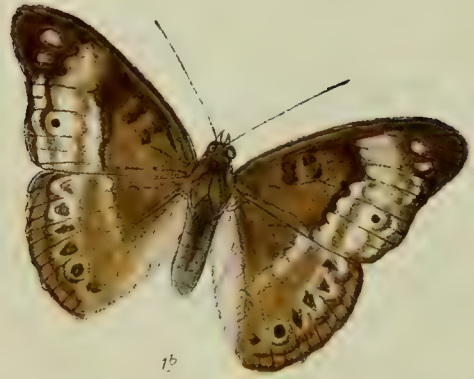
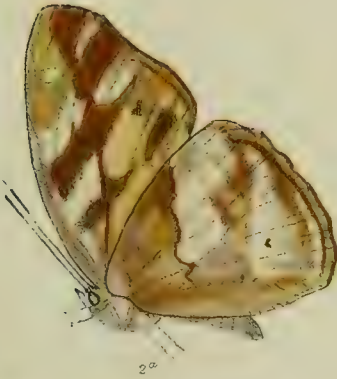




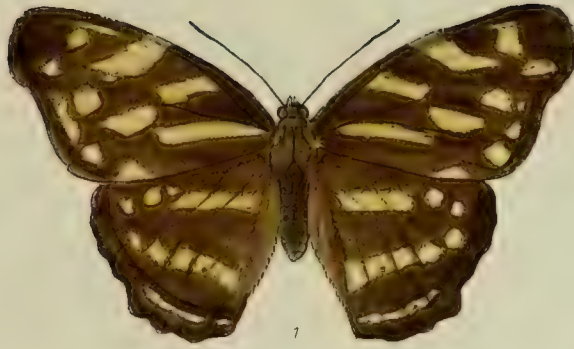


















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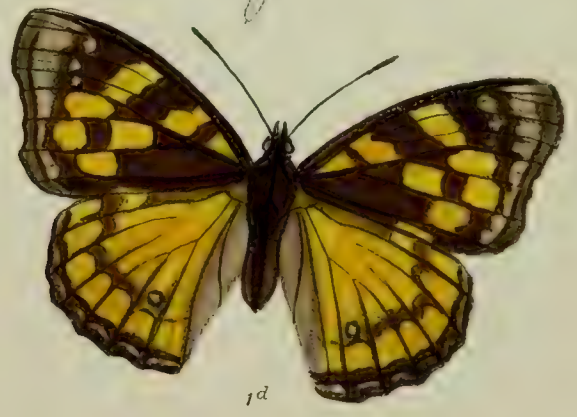
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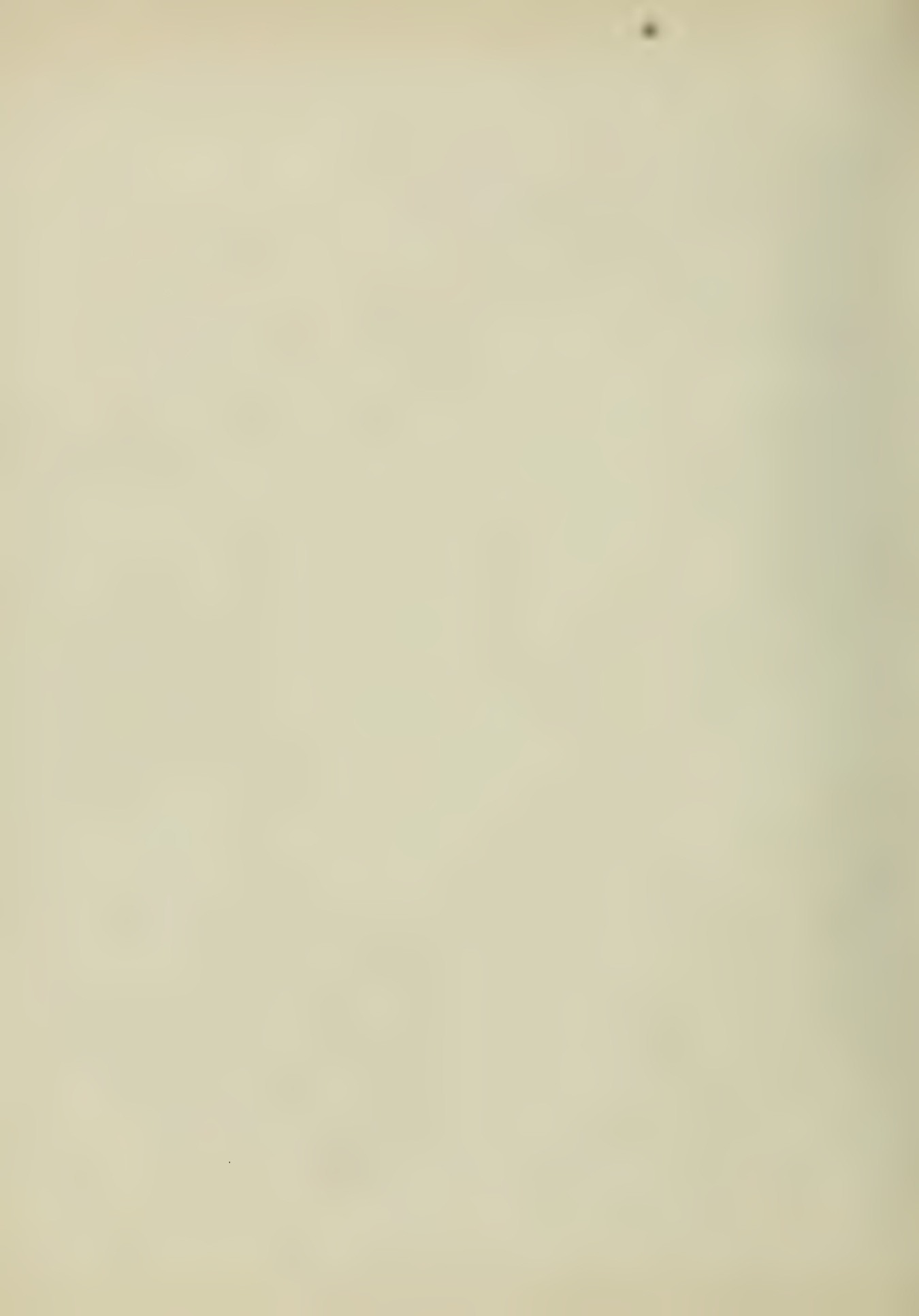
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1<sup>a</sup>



1<sup>c</sup>



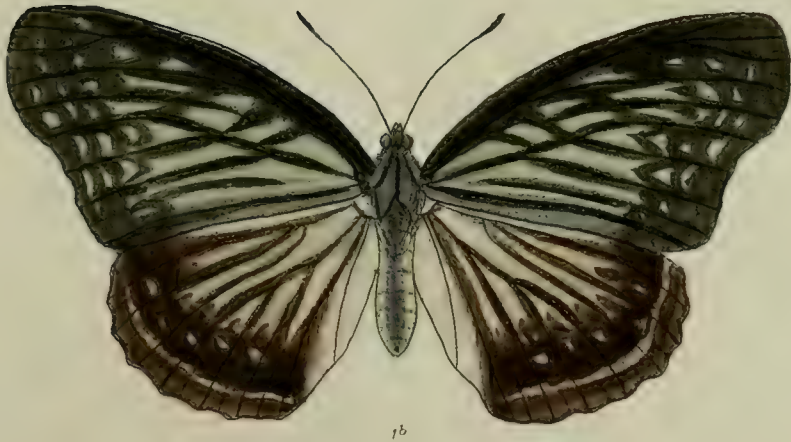
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1<sup>a</sup>



1<sup>b</sup>



2



2<sup>a</sup>



2<sup>b</sup>





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1<sup>a</sup>

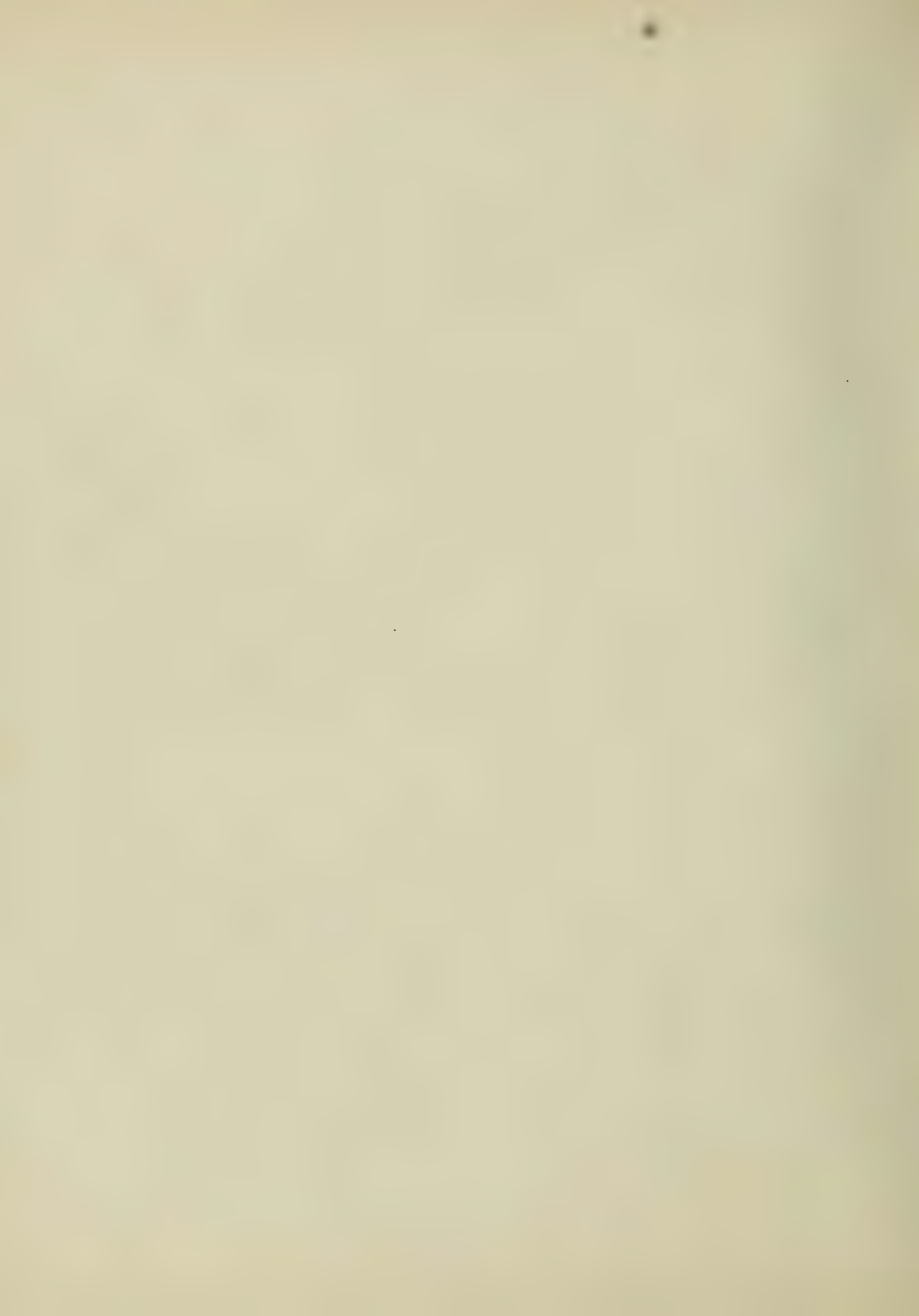


2<sup>a</sup>



2























1<sup>f</sup>



1<sup>a</sup>



1<sup>g</sup>







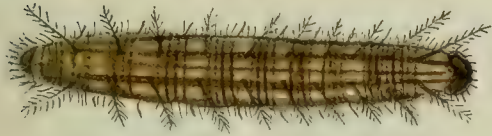




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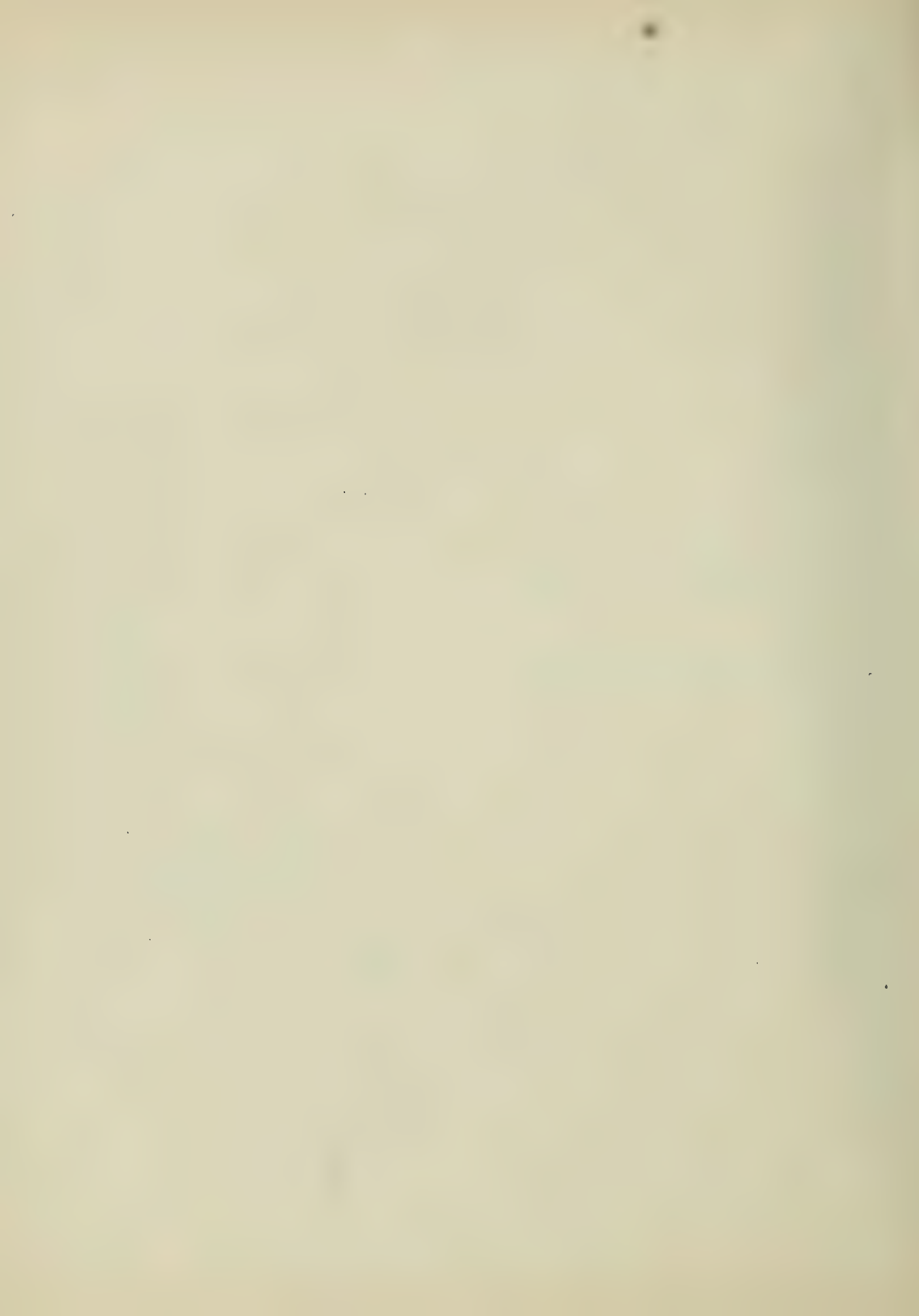


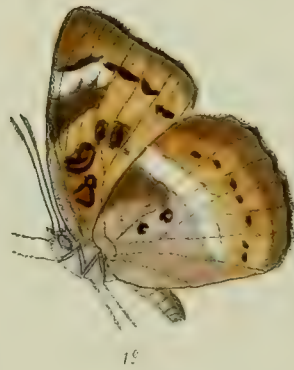
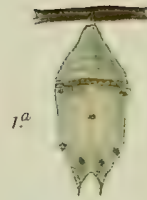
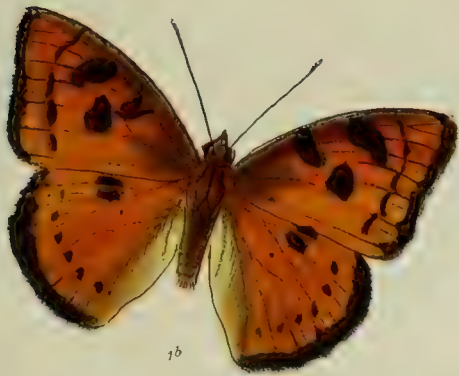
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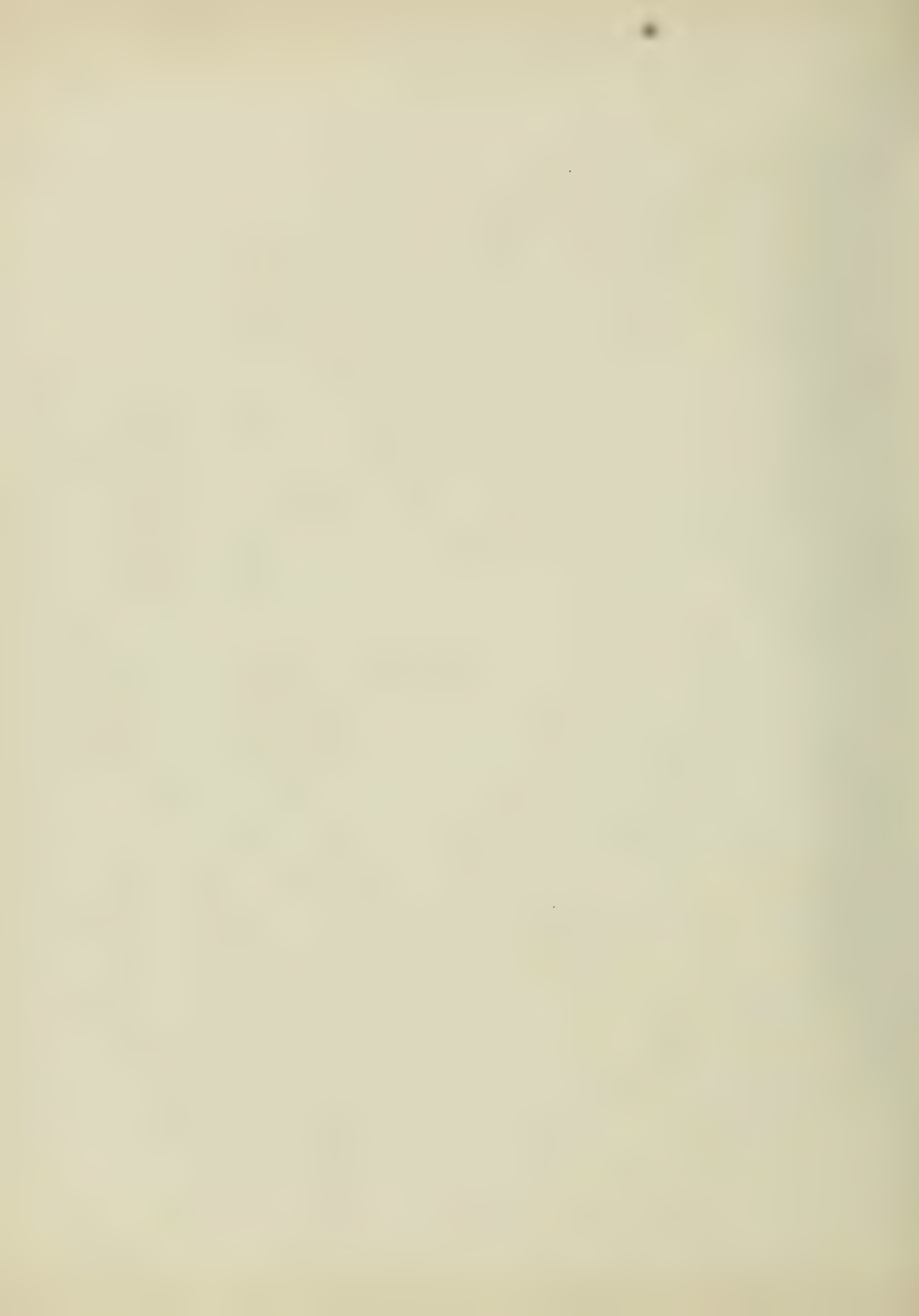


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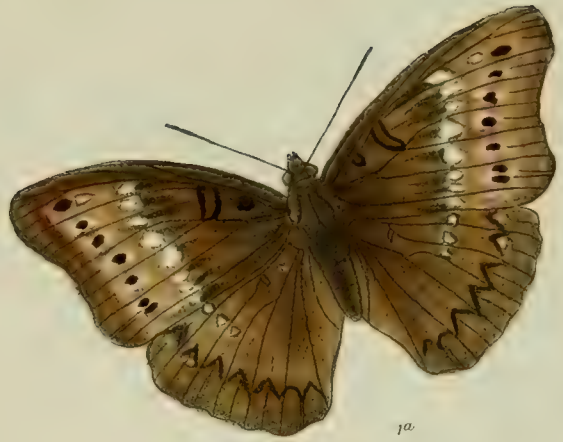








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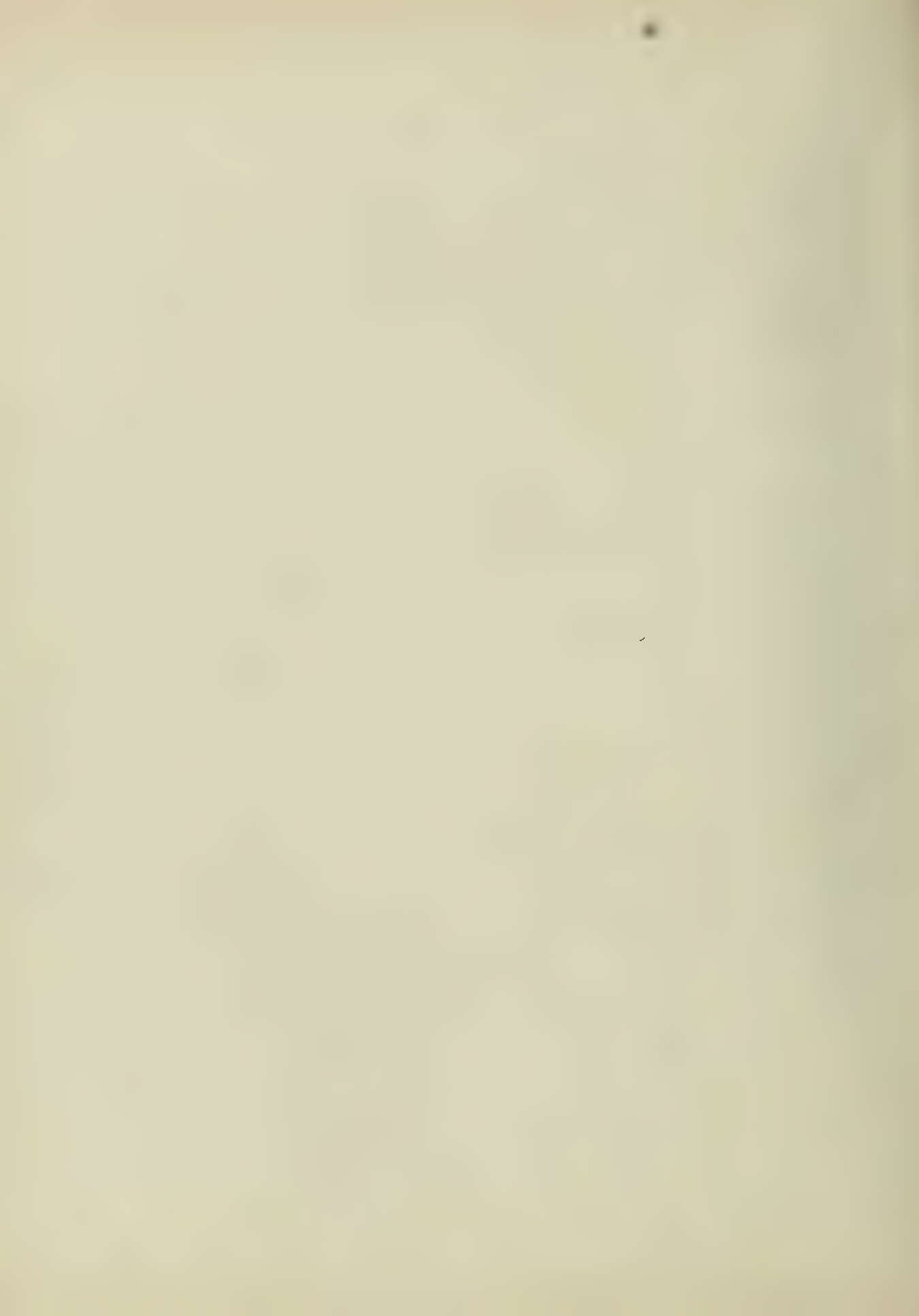
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3a











19



20



21







1<sup>a</sup>



1<sup>b</sup>







1



1a

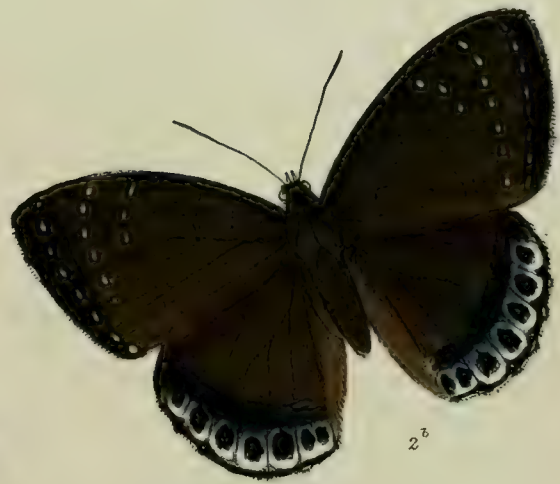


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2a





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1<sup>a</sup>



1<sup>b</sup>



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1<sup>c</sup>



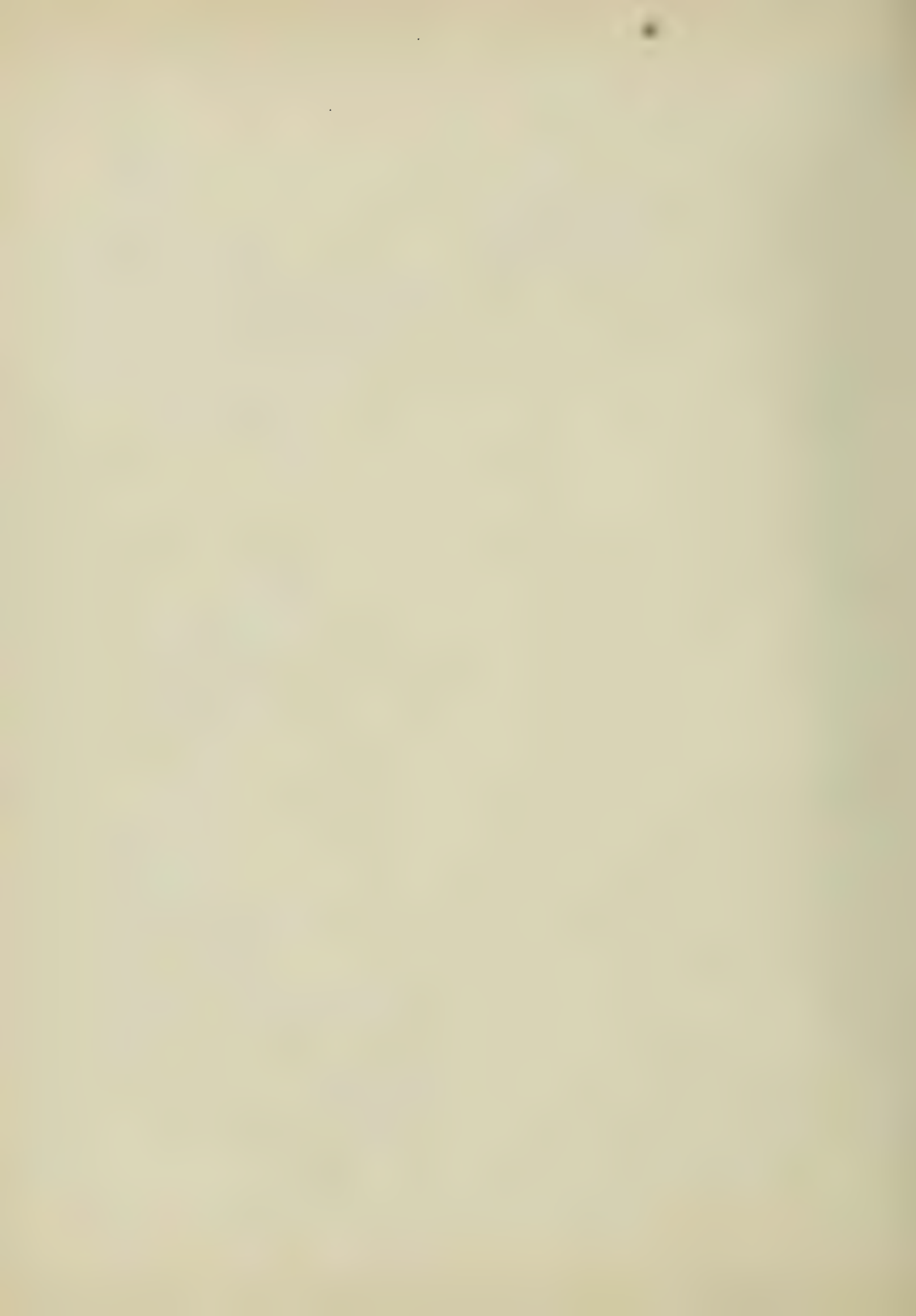




















7



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1b



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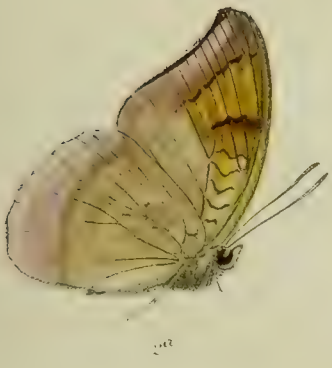


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7



7<sup>a</sup>



7<sup>c</sup>

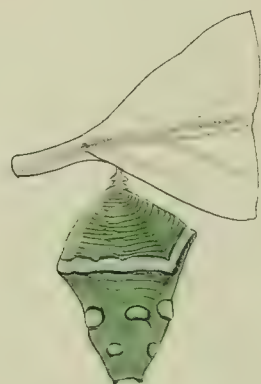
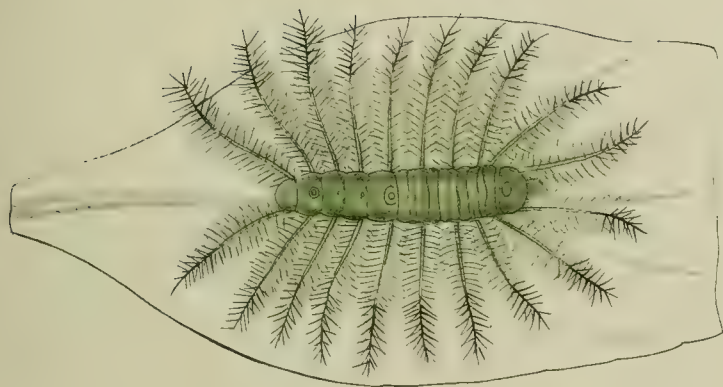


7<sup>b</sup>





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J.Nugent Fitch del et lith.

Vincent Brooks, Day & Son Imp







1.



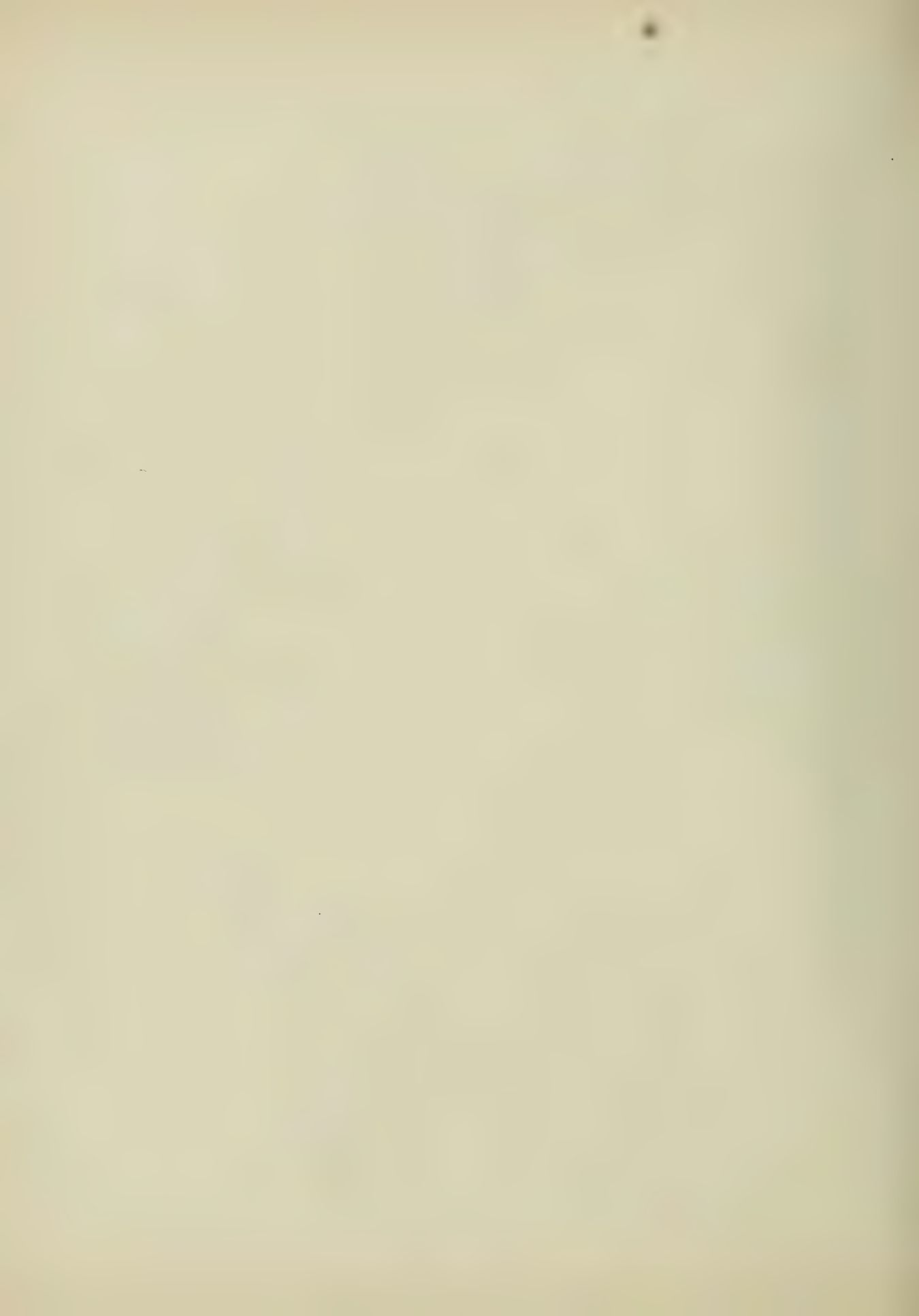
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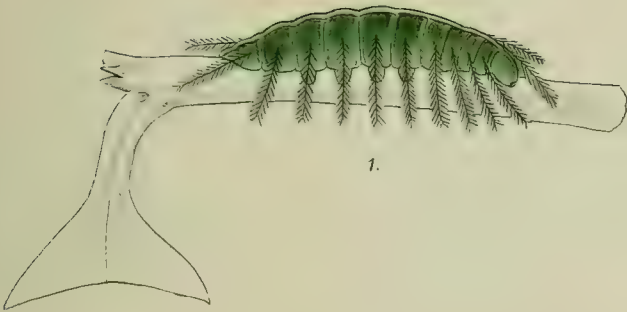
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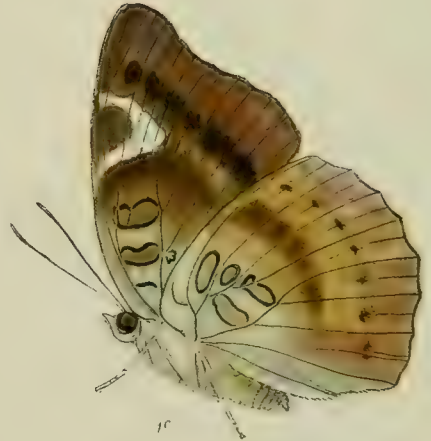
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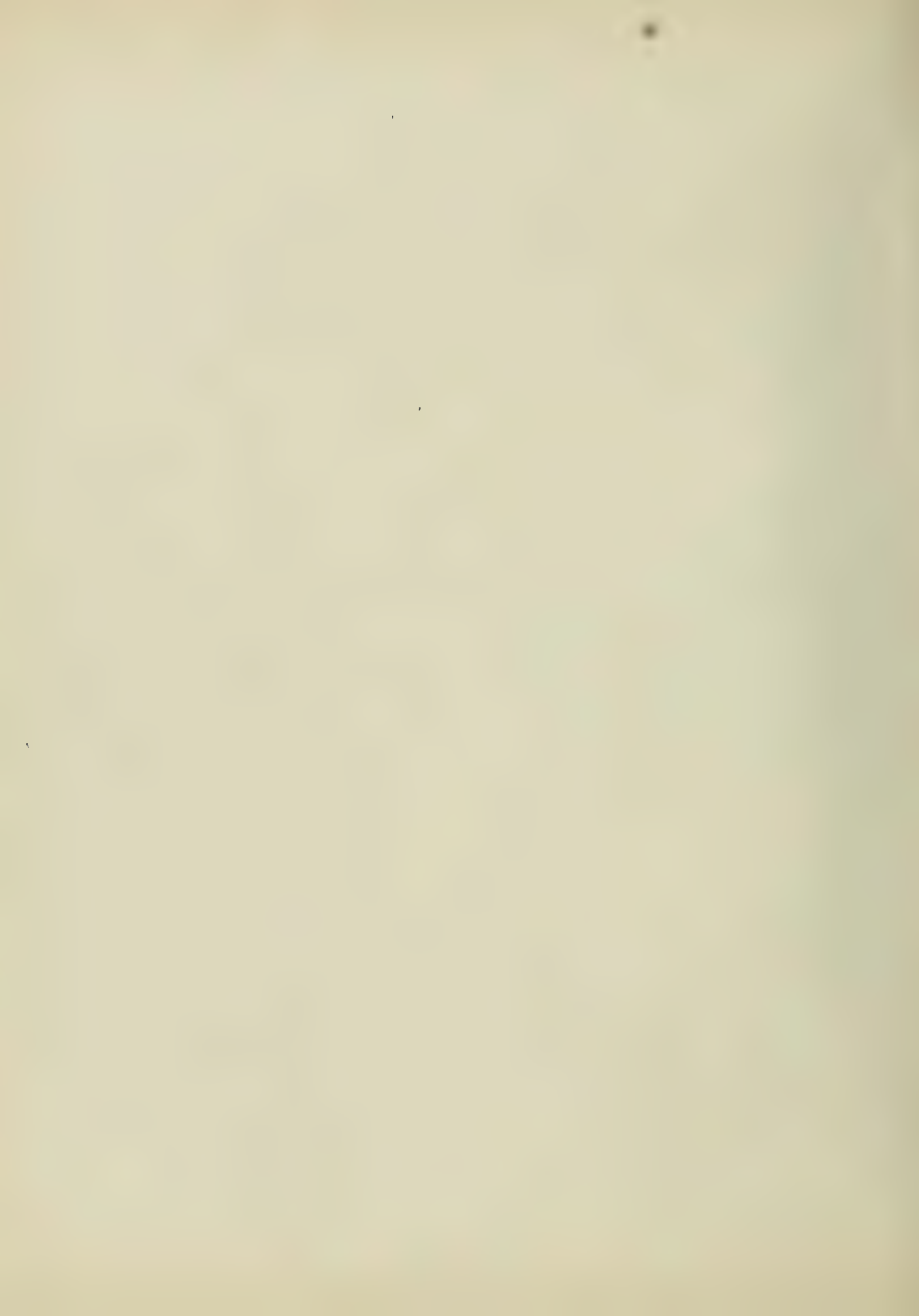
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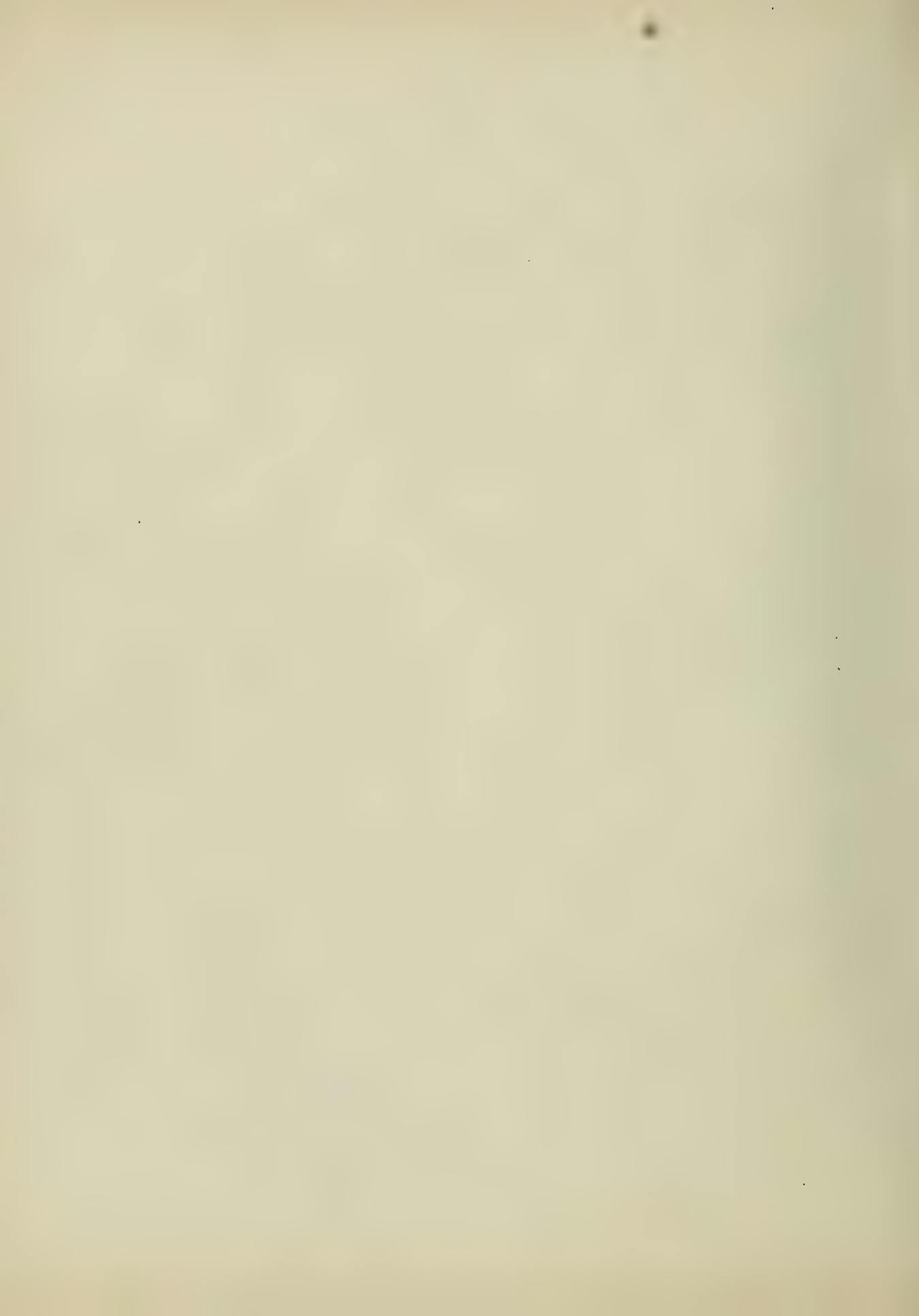
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1



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2a

F. C. Moore del. et lith.

Vincent Brooks, Day & Son, Eng.







1



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2a



2





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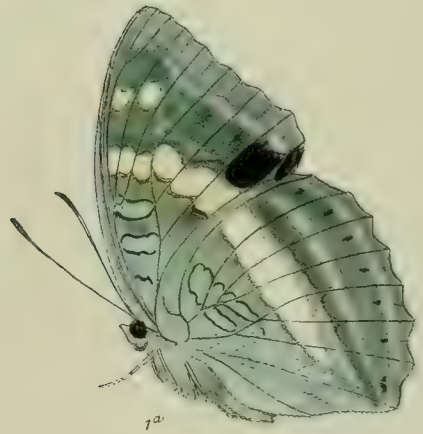
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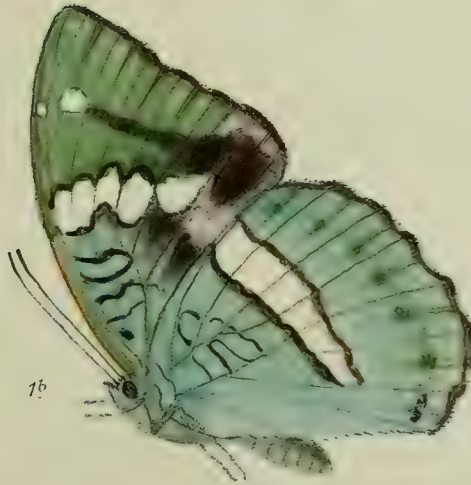
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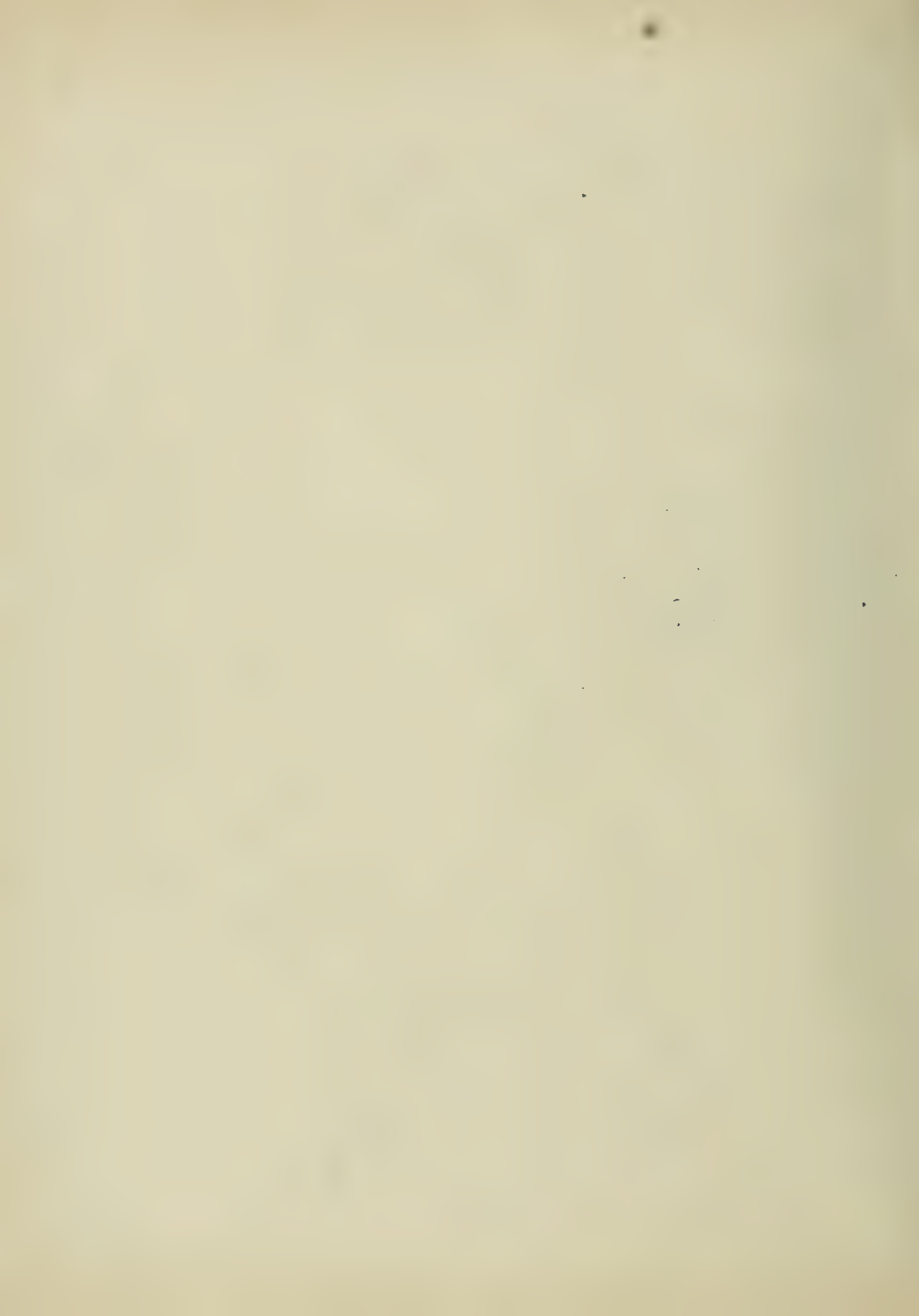
1



1a



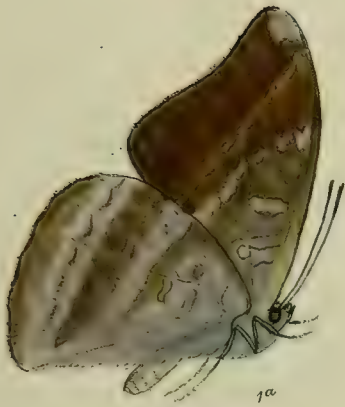
1b







1



1a



1c



1b





1.



1a



1b



2b



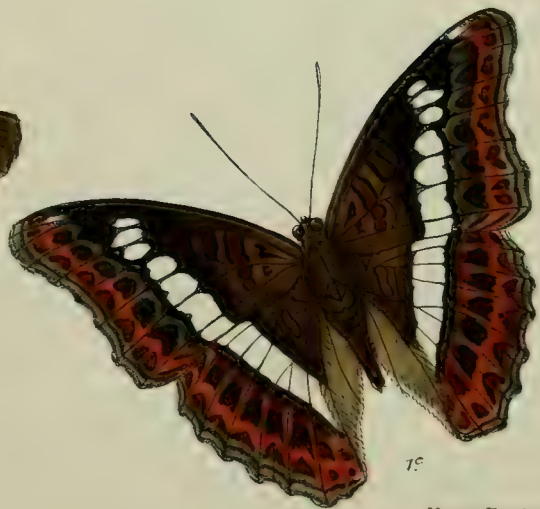
2

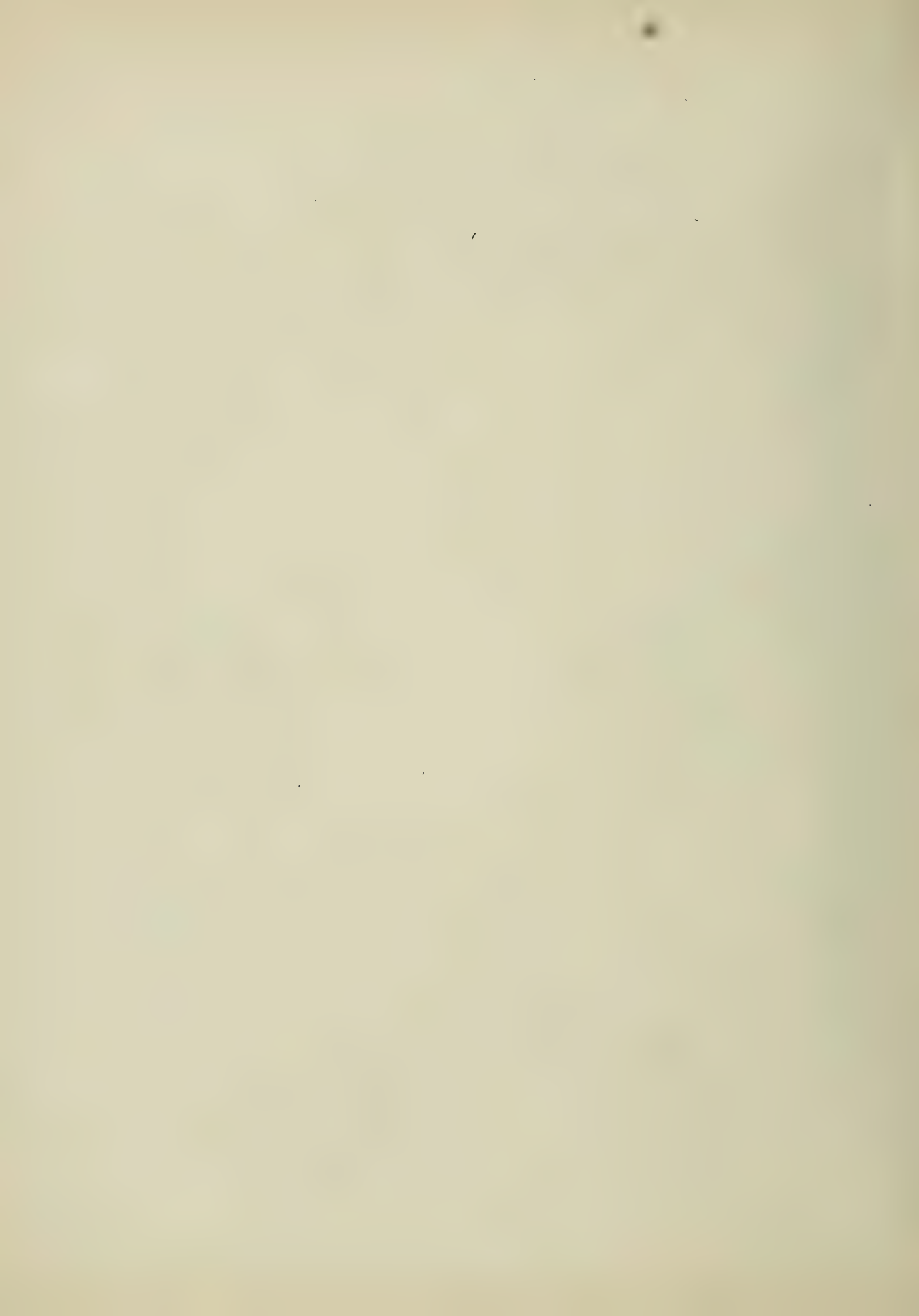


2a

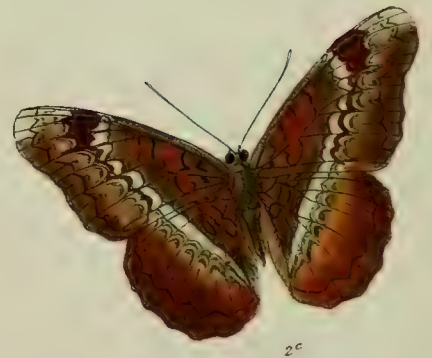
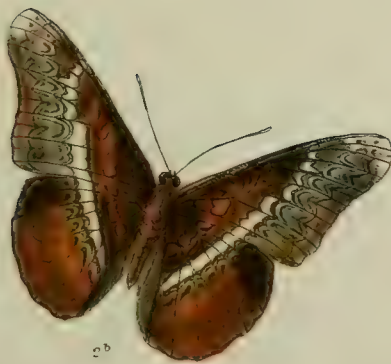












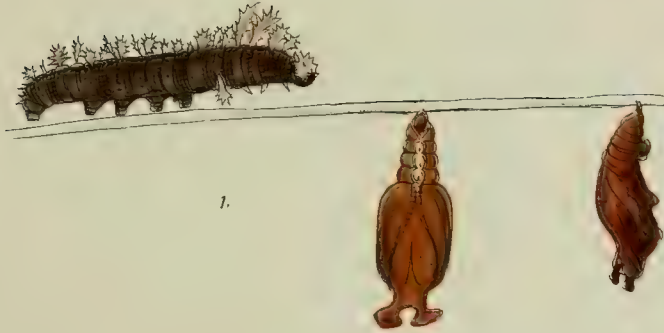




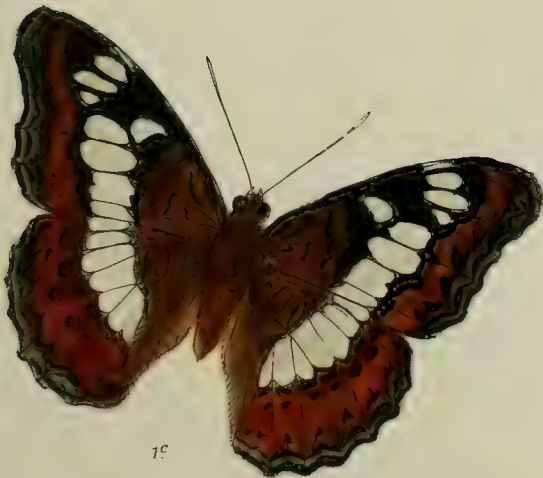
1<sup>a</sup>



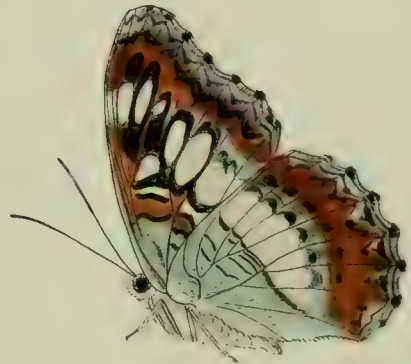
1<sup>b</sup>



1.



1<sup>c</sup>



1<sup>d</sup>



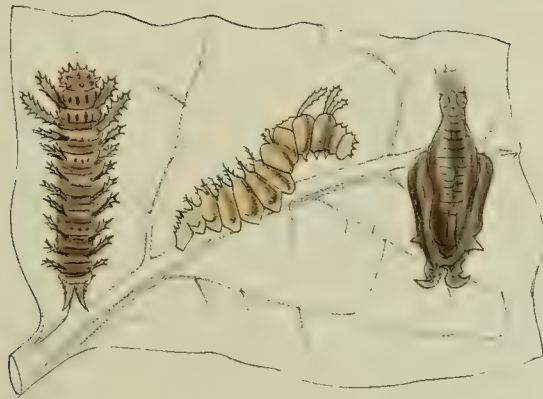




1.



1<sup>a</sup>



2.



2<sup>a</sup>

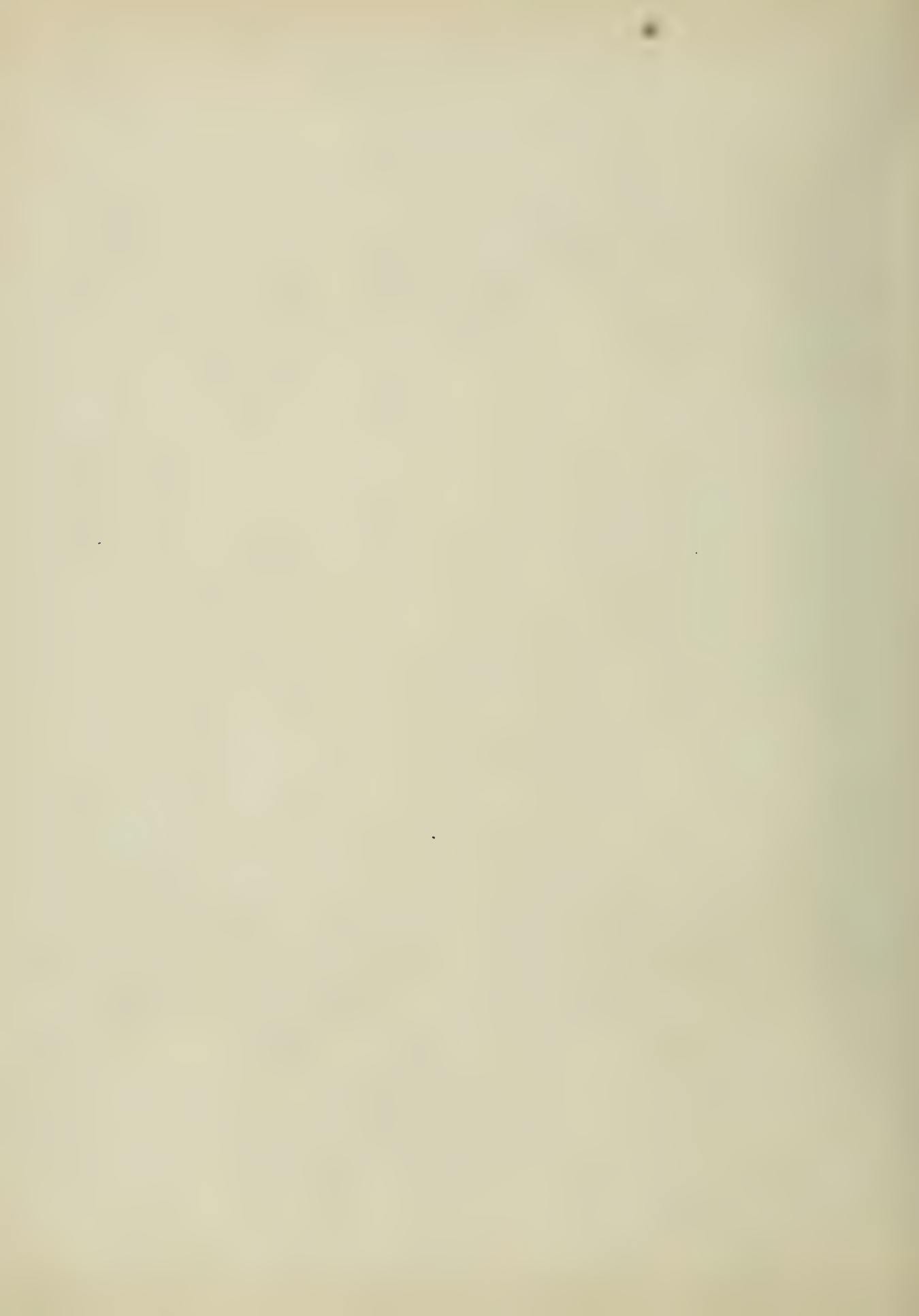


2<sup>b</sup>











1.



1<sup>a</sup>



1<sup>b</sup>



2<sup>b</sup>

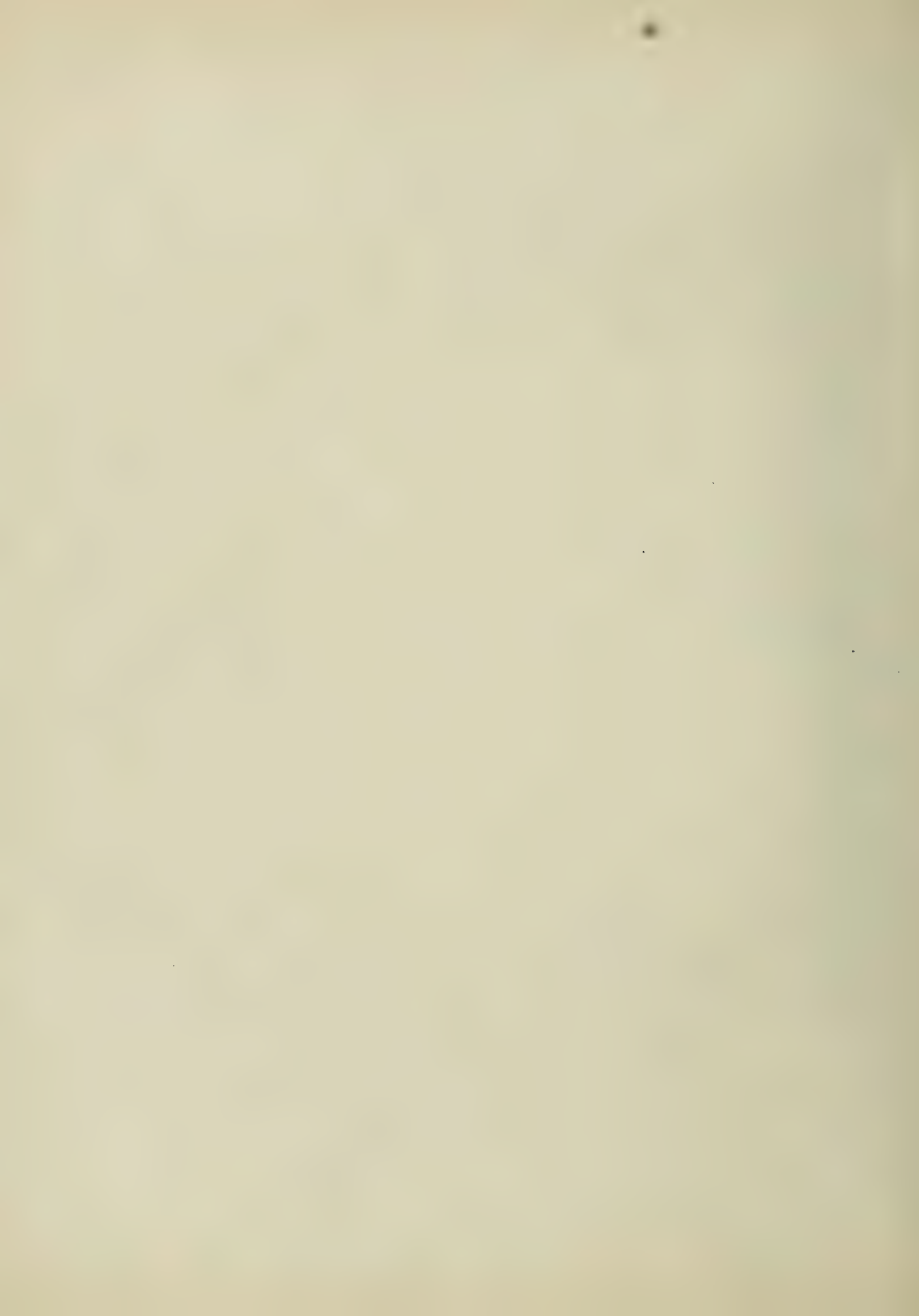


2.



2<sup>a</sup>



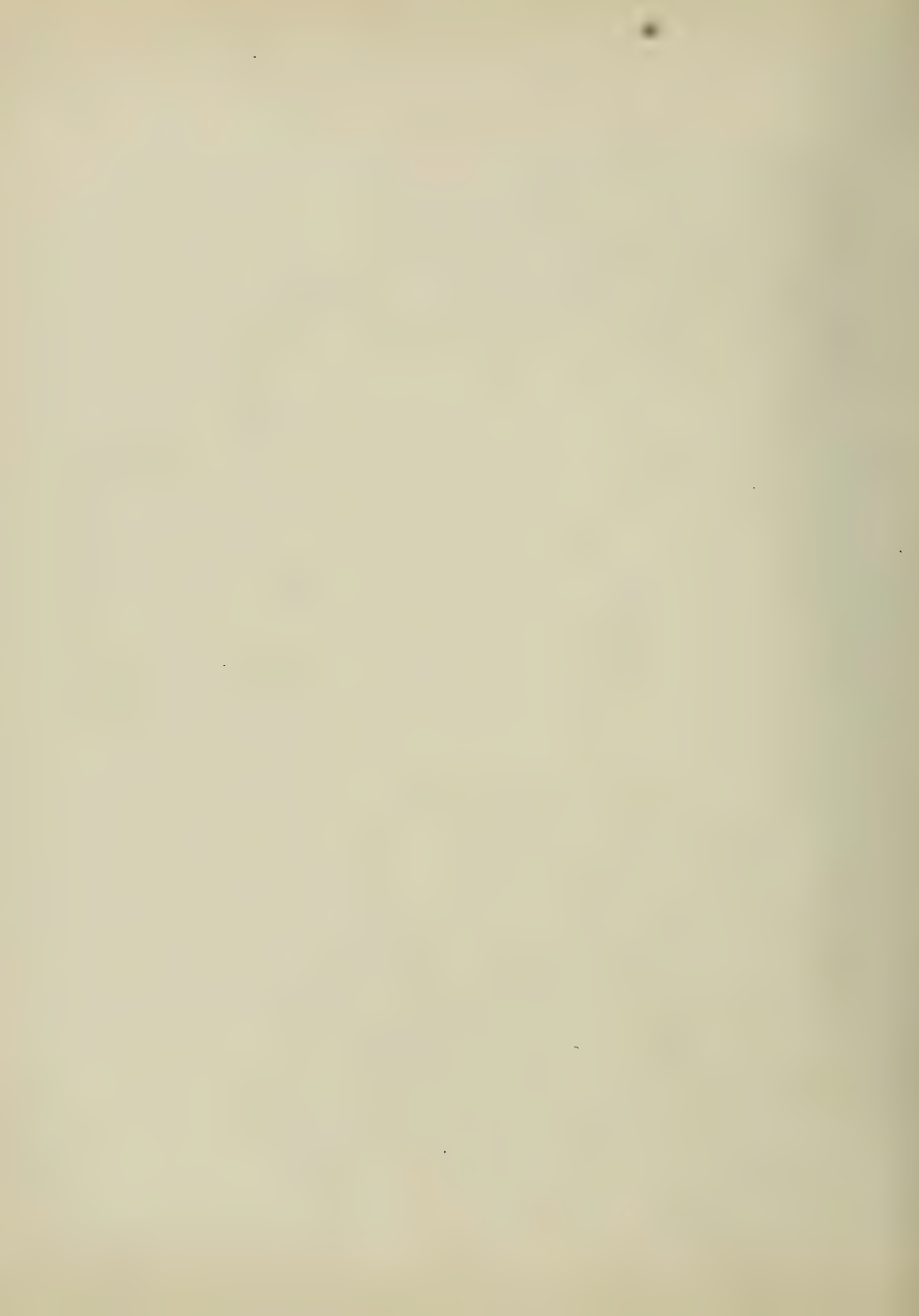










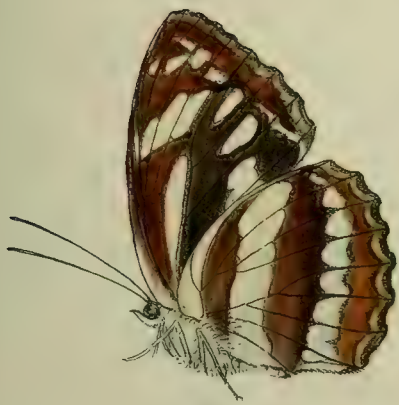




1.



1a



1b



2b

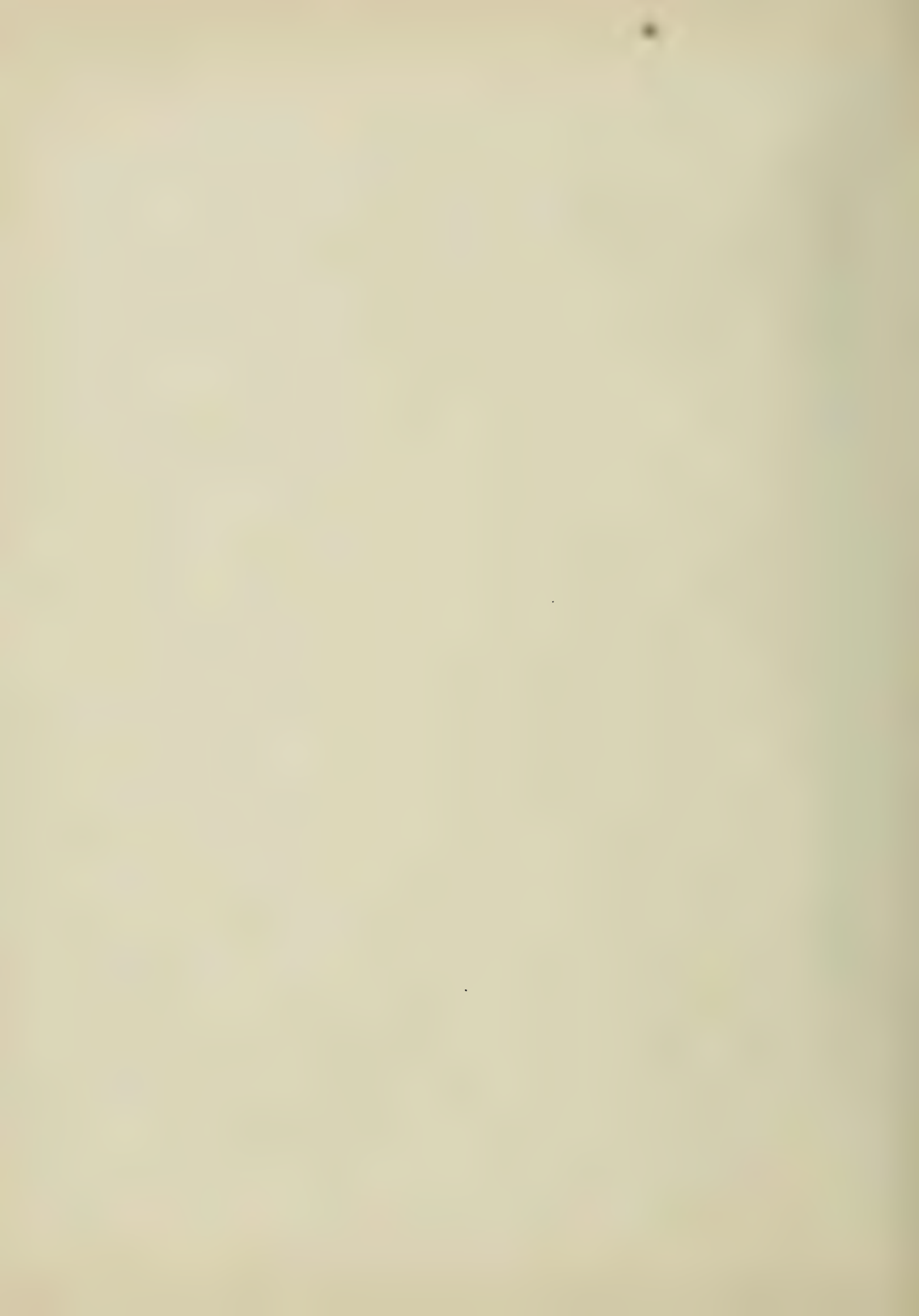


2



2a







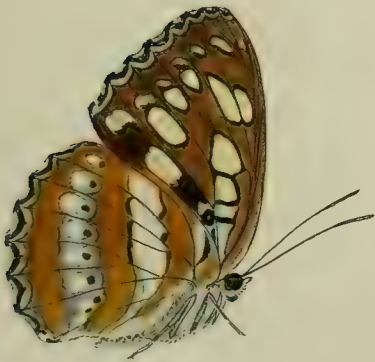
1a



1b



1



1d



1c











1.



1'



1<sup>v</sup>



2<sup>v</sup>

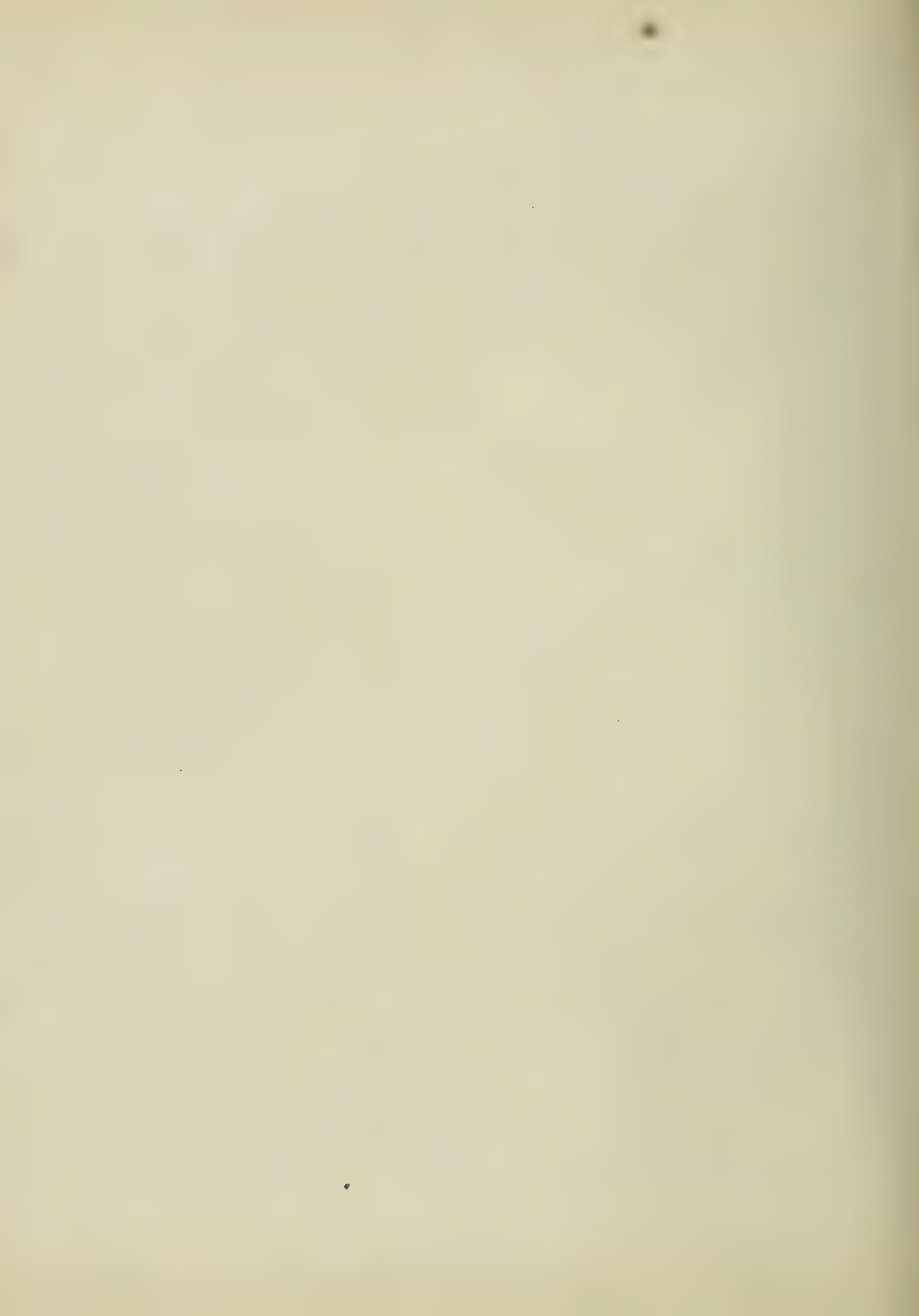


2.



2'







1



1b



1a



1c



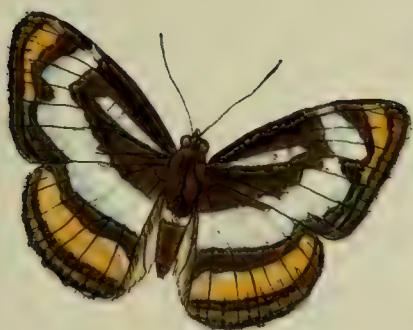
2



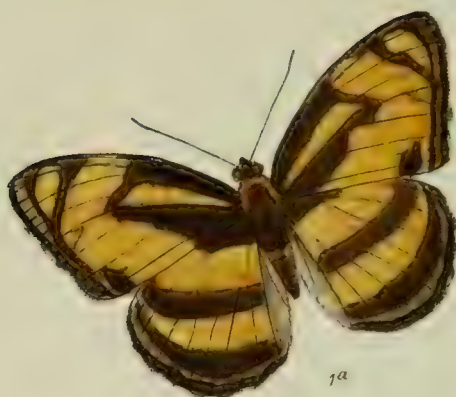
2a







1



1a



1b



1e



1c



1d





1.



1a



2a



2c

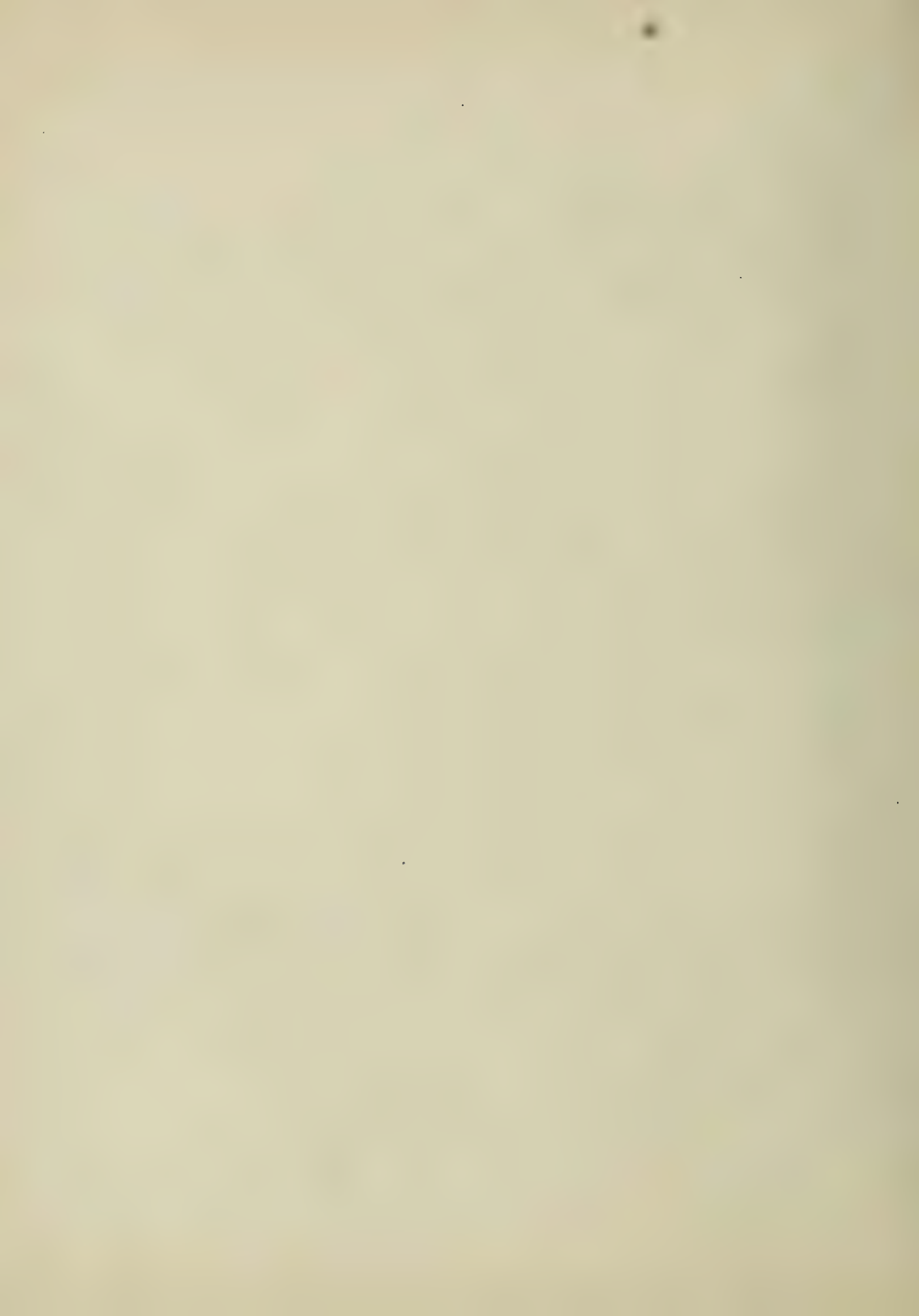


2



2b







7.



7a



7b



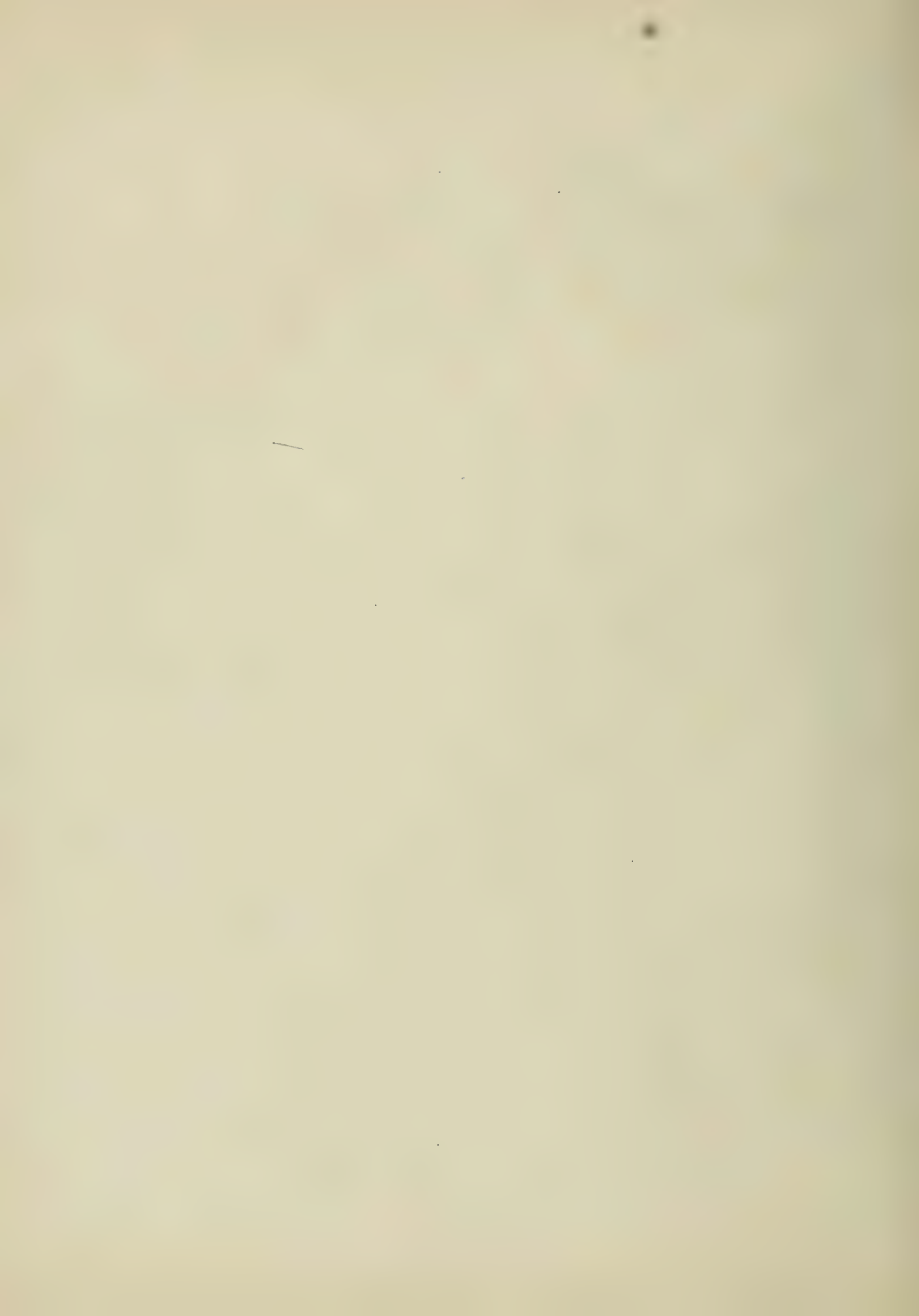
7c



7d



7e







1



1<sup>a</sup>



1<sup>c</sup>



1<sup>b</sup>



1<sup>d</sup>



1<sup>e</sup>





1.



1b



1a



1c



1d



1e







1.



1b



1a



1e



1c



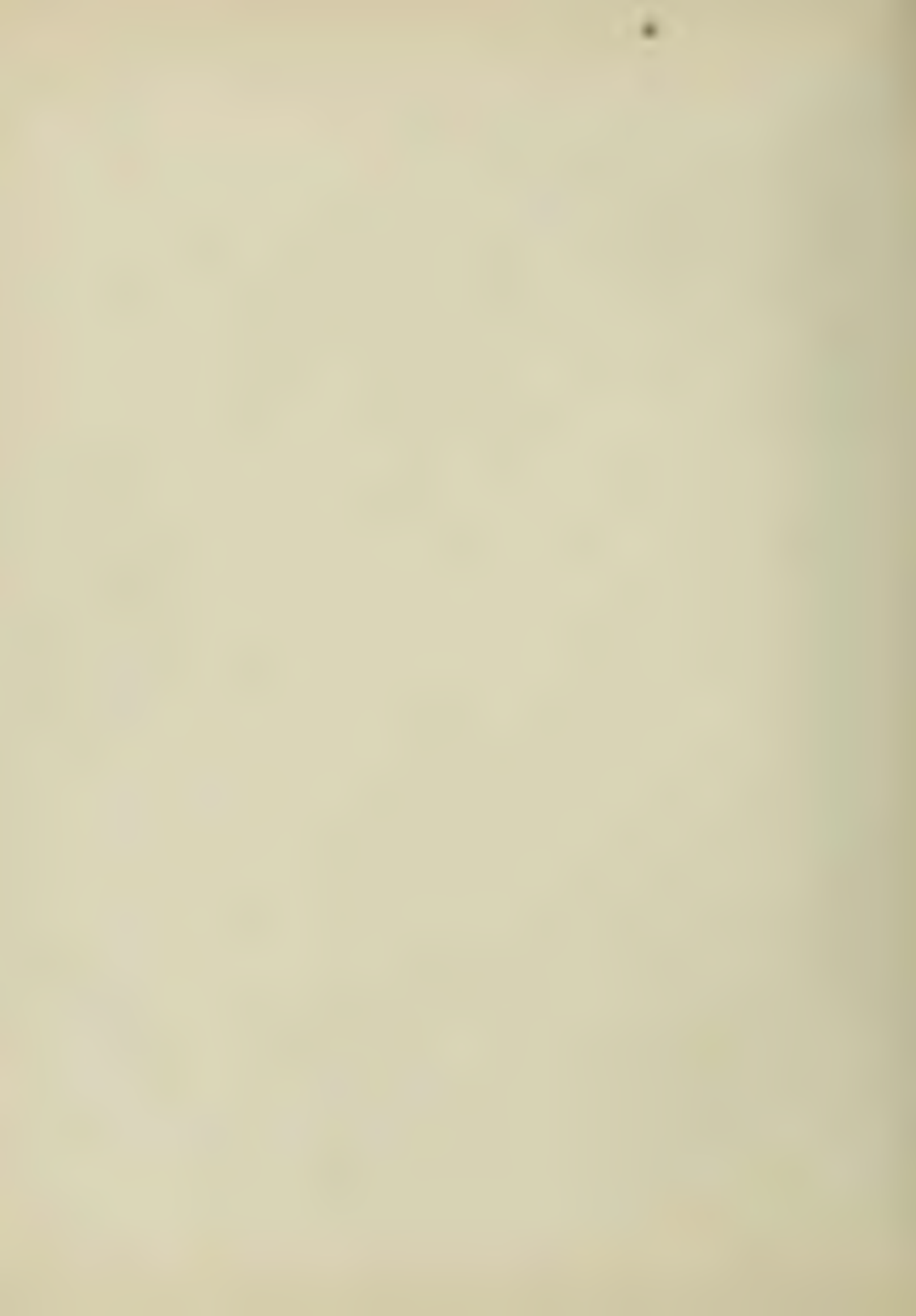
19



1d



1f







1<sup>a</sup>



1<sup>b</sup>



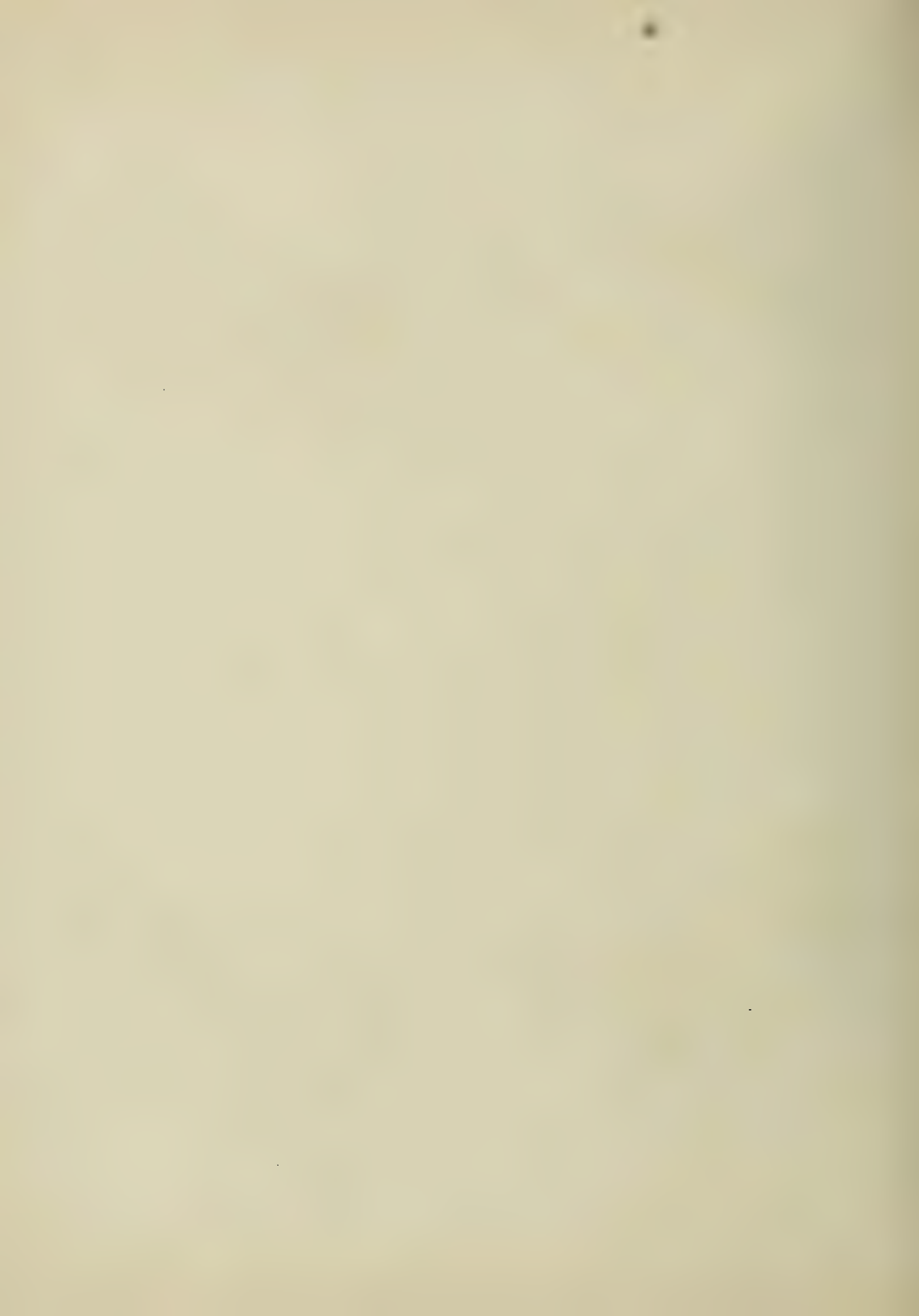
1.



2



2<sup>a</sup>





1.



1b



1a



1c



1c

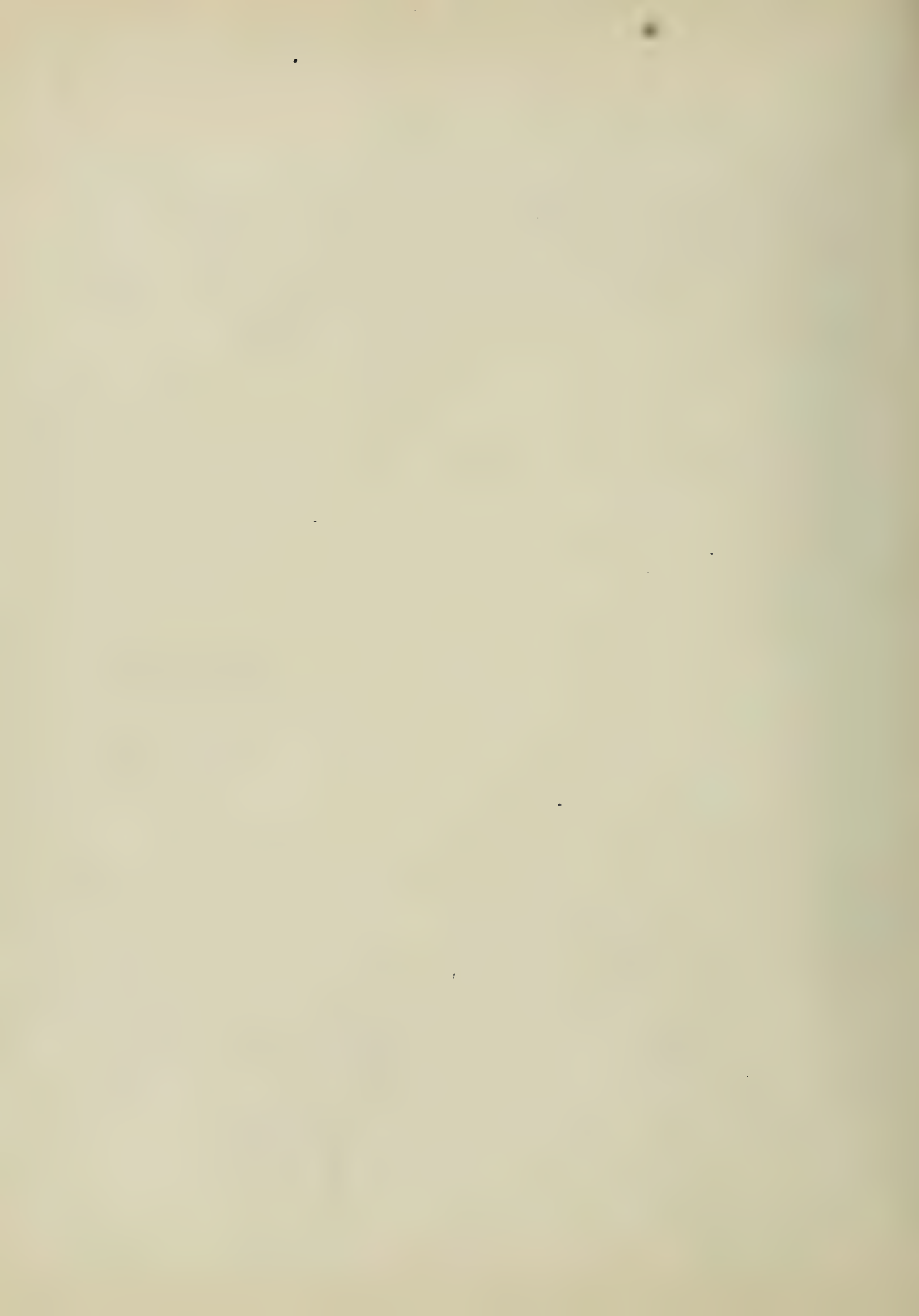


1d













1.



1<sup>a</sup>



1<sup>b</sup>



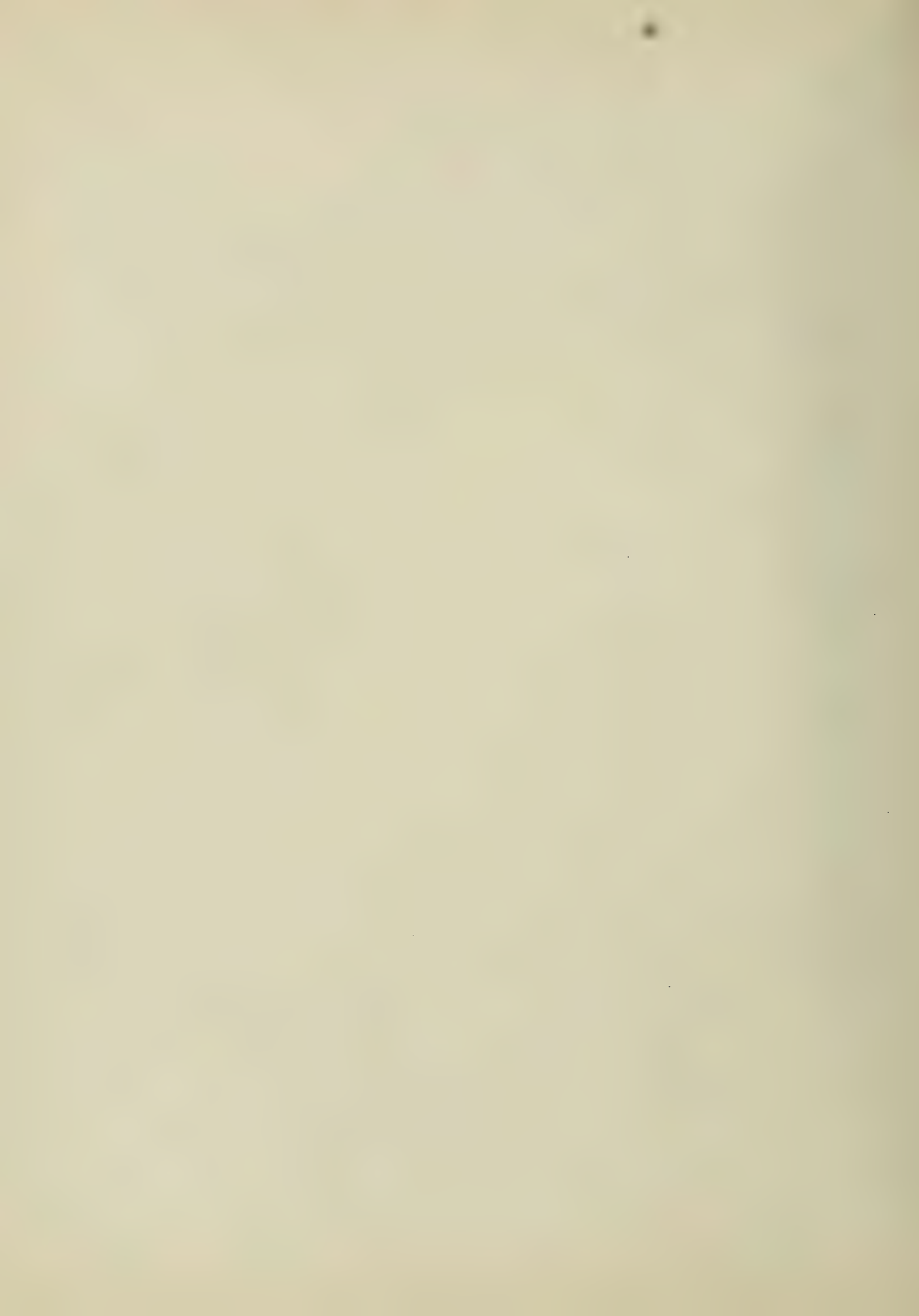
2<sup>b</sup>



2



2<sup>a</sup>





1



1<sup>b</sup>



1<sup>a</sup>



1<sup>c</sup>



1<sup>e</sup>



1<sup>d</sup>

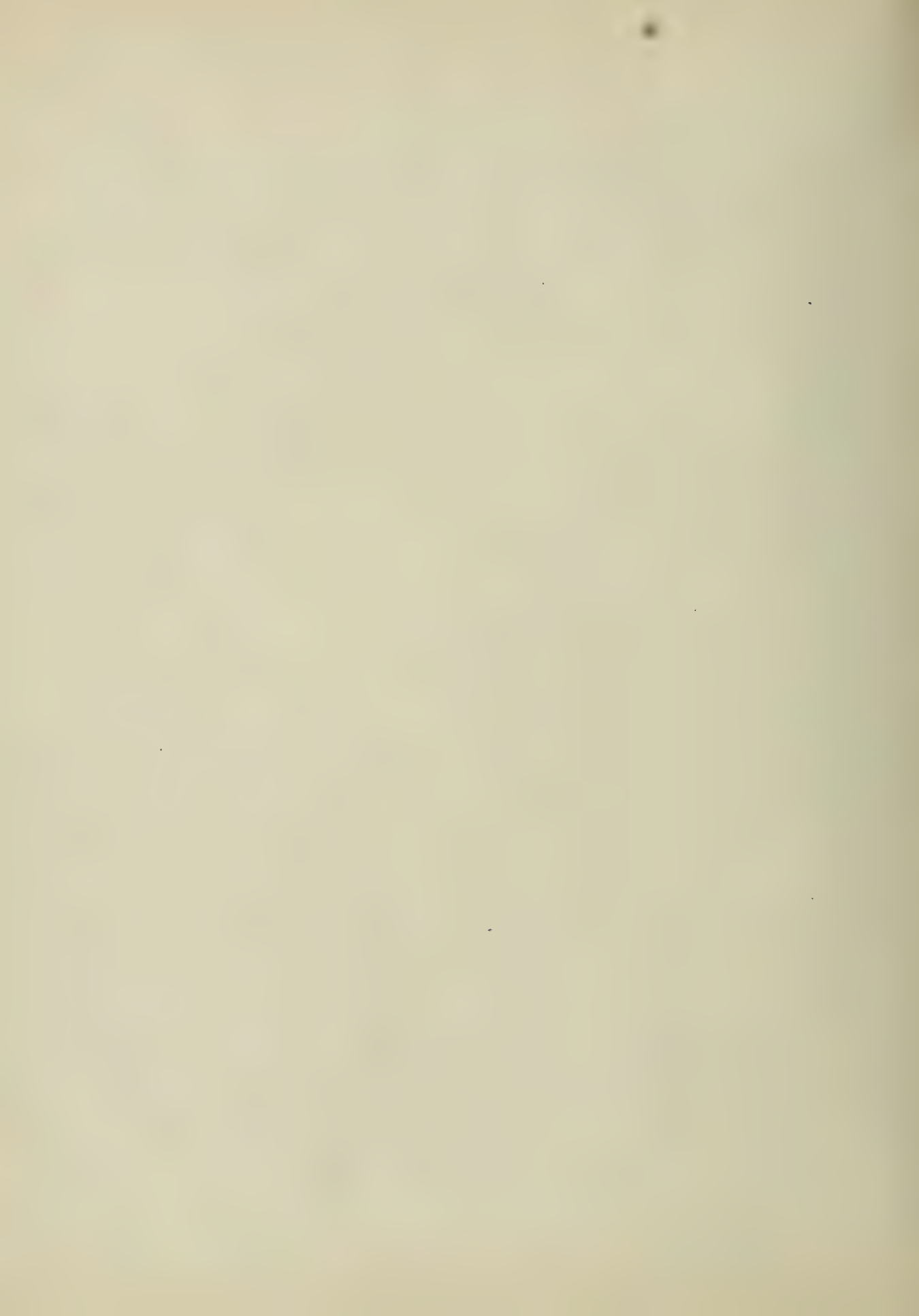


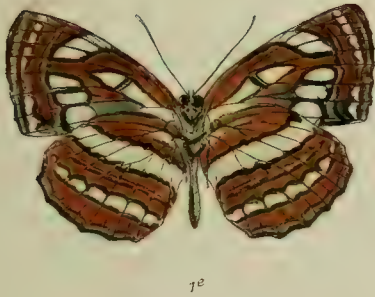
1<sup>d</sup>



1<sup>e</sup>













1a



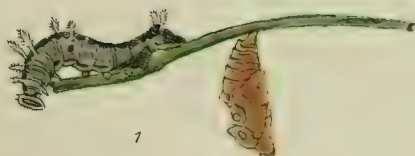
1b



1c



1d



1



1e



1f



1g



1h





7.



b.



7<sup>a</sup>



7<sup>b</sup>



7<sup>c</sup>



7<sup>d</sup>



7<sup>e</sup>



7<sup>f</sup>







1



1b



1a



1c



1e



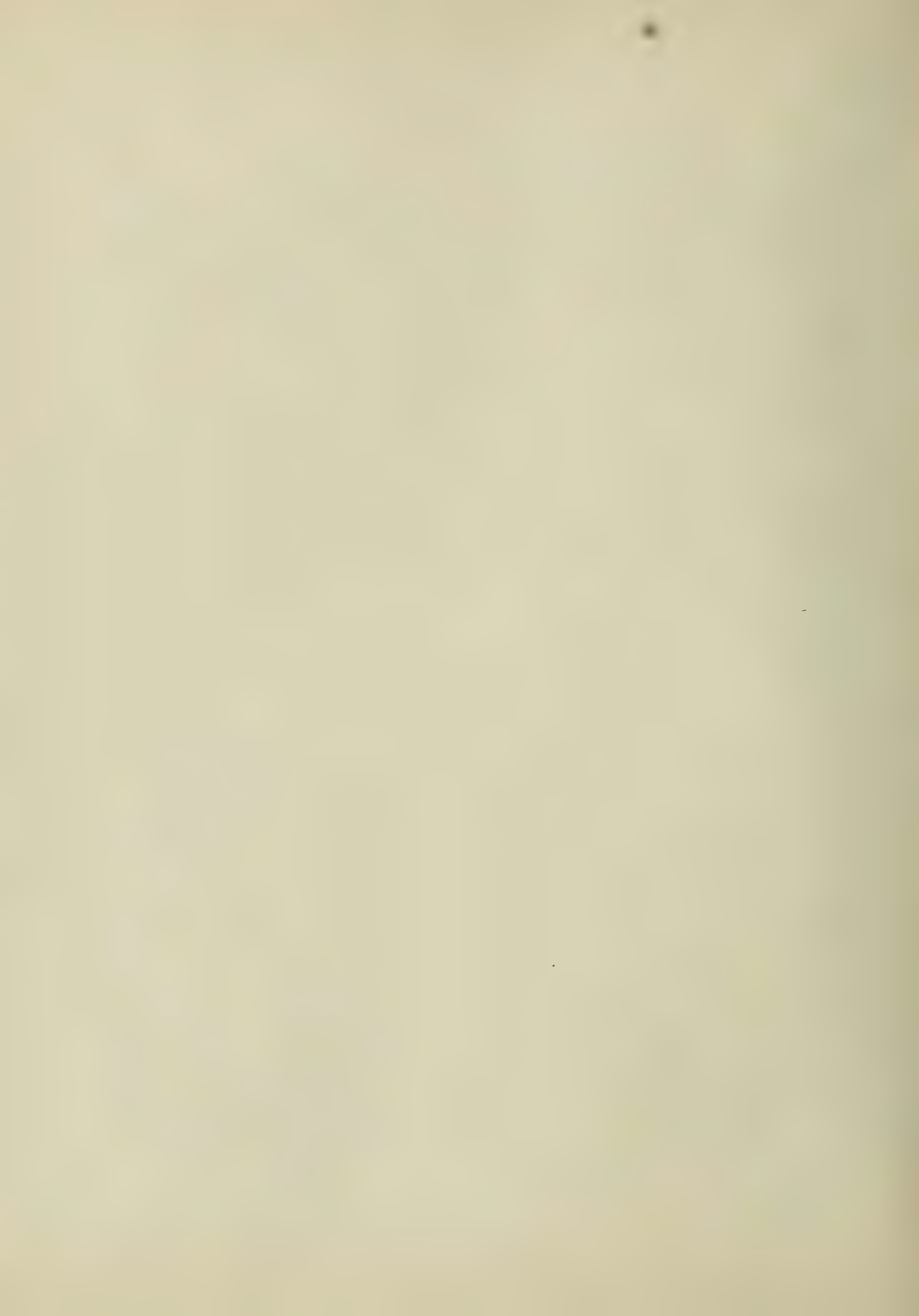
1d



1g



1f







1b



1



1a



1c



1e



1d



1d



1f





1.



1<sup>b</sup>



1<sup>c</sup>



1<sup>a</sup>



1<sup>y</sup>



1<sup>e</sup>



1<sup>d</sup>



1<sup>f</sup>







1.



1<sup>a</sup>



1<sup>b</sup>



1<sup>c</sup>



1<sup>d</sup>



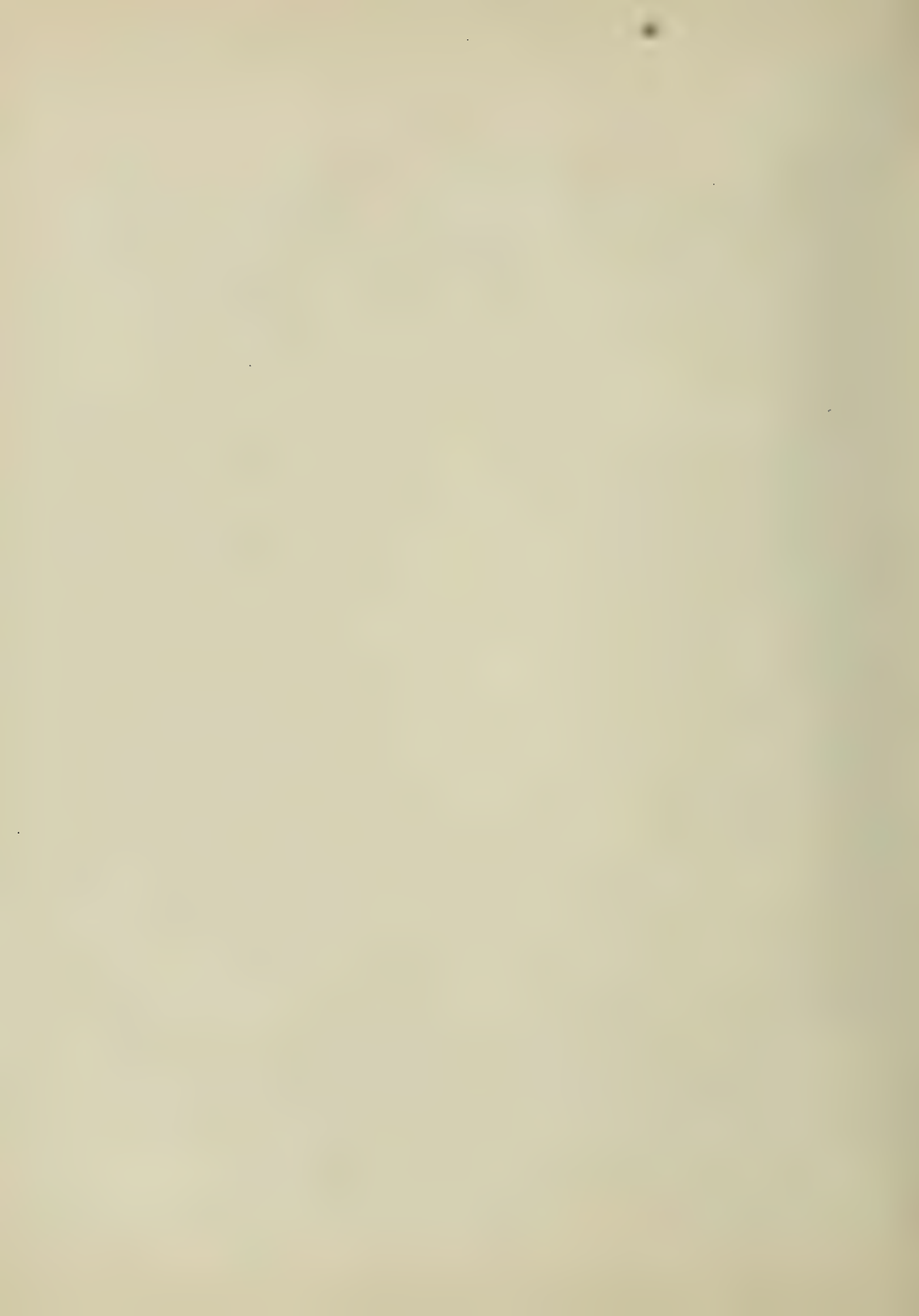
1<sup>e</sup>



2.



2<sup>a</sup>







1.



2.



3.



4.



5.



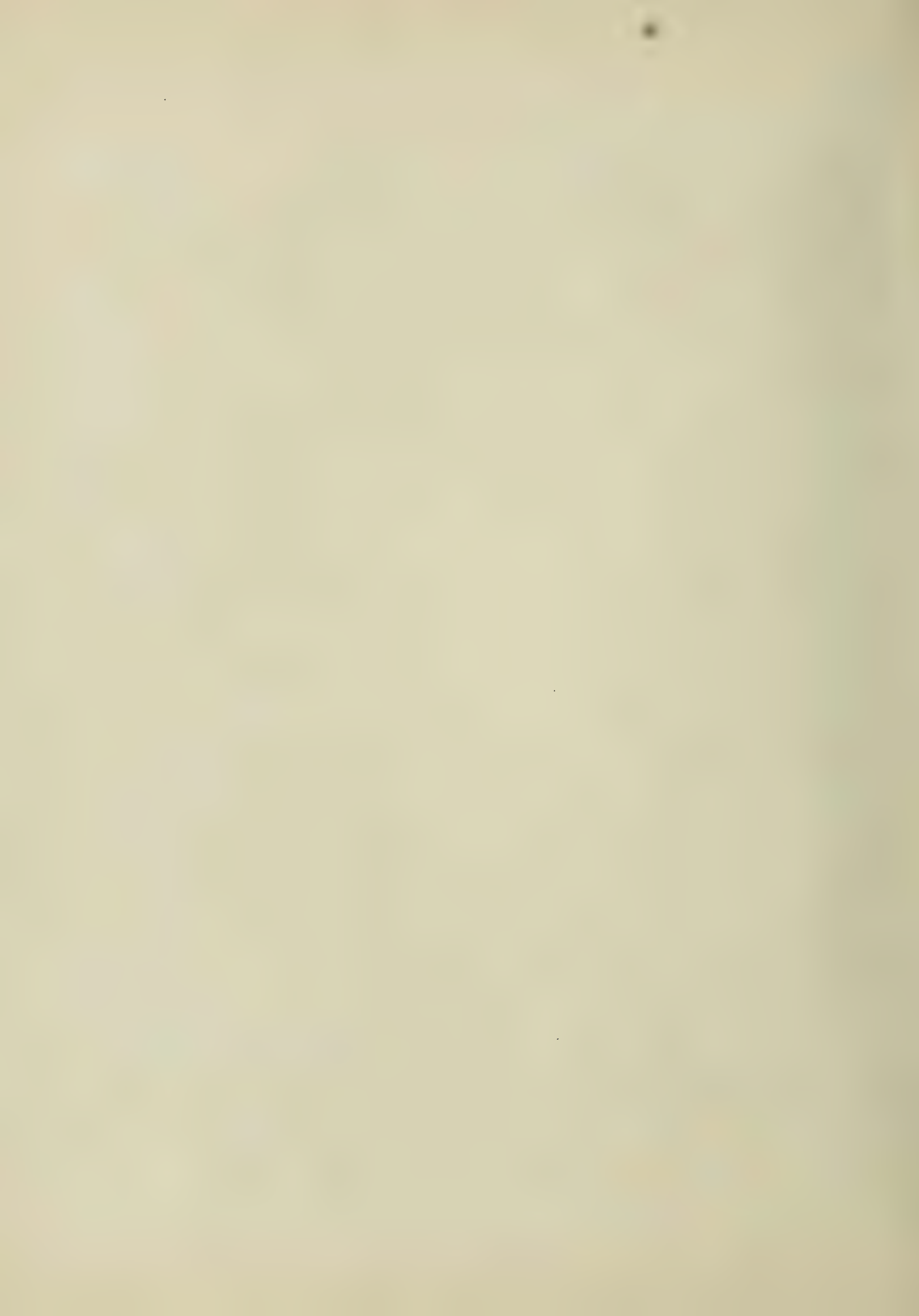
6.



7.



8.





1a



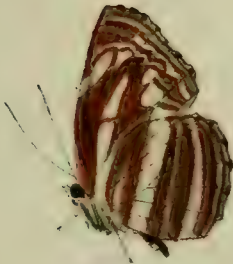
1b



1c



1e



1f



1g



1d



1f







1.



1b



1a



1c



1e



1d



1f







1.



1b.



1a.



1c.



1e.



1f.



1d.



1f.





1a



1b



7a



7c



7e



7f



7d



7f



