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SCIENTIFIC RESULTS  
OF  
THE SECOND YARKAND MISSION;

BASED UPON THE COLLECTIONS AND NOTES  
OF THE LATE  
FERDINAND STOLICZKA, PH.D.

LEPIDOPTERA,

BY  
FREDERIC MOORE, F.Z.S., ETC.,  
ASSISTANT CURATOR, INDIAN MUSEUM, LONDON.

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Published by order of the Government of India.

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SCIENTIFIC RESULTS  
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THE SECOND YARKAND MISSION.

LEPIDOPTERA.

BY FREDERIC MOORE, F.Z.S., ETC., *Assistant Curator, India Museum, London.*

Tribe—PAPILIONES.

Family—NYMPHALIDÆ.

Sub-Family—SATYRINÆ.

1. HIPPARCHIA LEHANA. Plate I, fig. 4, ♂.

*Hipparchia lehana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 227.

Allied to *H. baldiva*, Moore, from Upper Kunawur, the upperside being paler in colour, the discal transverse ochreous band broader on both wings, and its inner border, in the male, inwardly oblique. Both sexes above and beneath are without the small ocellus on the discal band above the anal angle. The underside is also very much paler, and the transverse sinuous lines wider apart.

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

*Habitat*.—Leh (September 6th, 1873), Kharbu, 13,000 feet, both in Ladák.

2. HIPPARCHIA CADESIA.

*Hipparchia cadesia*, Moore, Proc. Zool. Soc. 1874, p. 565, pl. 66, fig. 7.

*Hab*.—Leh, September 8th.

3. EPINEPHILE CHEENA.

*Epinephile cheena*, Moore, Proc. Zool. Soc. 1865, p. 501, pl. 30, fig. 6.

*Hab*.—Ganganghir, Kashmir.

## SECOND YARKAND MISSION.

## 4. AULOCERA SWAHA.

*Satyrus swaha*, Kollar, Hügel's Kasehmir, iv, p. 444, tab. 14, figs. 1, 2 (1844).

*Satyrus brahminus* (part), Blanch., Jacq. Voy. dans l'Inde, iv, Ins. p. 22, t. 2, figs. 5, 6, ♂.

*Hab.*—Ganganghir, Kashmir.

## 5. AULOCERA BRAHMINA.

*Satyrus brahminus*, Blanchard, Jacq. Voy. dans l'Inde, iv, Ins. p. 22, t. 2, fig. 4 (1844), ♂.

*Aulocera weranga*, Lang, Ent. Monthly Mag. iv, p. 247 (1868).

*Hab.*—Mataian, Dras Valley, 11,200 feet.

Sub-family—*NYMPHALINÆ*.

## 6. VANESSA LADAKENSIS. Plate I, fig. 2.

*Vanessa ladakensis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 227.

Nearest allied to *V. rizana*, Moore, from Cheeni, but is somewhat smaller, less angled below the apex of fore wing and at middle of the hind wing; the black markings on the upper-side are much less prominent, the black oblique bands on forewing merging into the red and thus appearing somewhat confluent; the outer transverse discal yellow band on fore wing is also broader; other markings similar. On the underside the interspaces between the markings on fore wing are very much paler.

Expanse  $1\frac{5}{8}$  inch.

*Hab.*—Gogra, Changehenmo, 15,000 feet, October 1873; Karatágh Lake, on snow, midday temperature 33°, October 11th, 1873.

## 7. PYRAMEIS CARDUI.

*Pyrameis cardui*, Linn. Faun. Suec. p. 276 (1761).—Esper, Schmett. i, t. 10, fig. 3.—Eversmann, Ent. Imp. Ross. v, p. 107, t. 12, figs. 1, 2.—Erschoff, Lep. Turkestan, p. 15.

*Hab.*—Karghálik, November 11th, seen also south of Sánju and at Sánju, all in Eastern Turkestan.

## 8. ARGYNNIS JAINADEVA.

*Argynnis jainadeva*, Moore, Ent. Monthly Mag. i, p. 131 (1864); Proc. Zool. Soc. 1865, p. 495, pl. 30, fig. 1.

*Hab.*—Leh, September 6th.

Family—*PAPILIONIDÆ*.Sub-family—*PIERINÆ*.Genus *BALTIA*, Moore.*Baltia*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 228.

Fore wing very short; costa considerably arched from the base, apex and posterior angle rounded, exterior margin oblique, costal vein short, subcostal vein arched to end of the cell, six-branched, first and second branches arising at equal distances apart before the end of the cell and terminating on the costa before the apex, third branch bent near its base, middle, and immediately before its termination before the apex, the fourth, fifth, and sixth branches starting below from each of these angles, the fourth branch being very short; cell broad; discocellulars of nearly equal length, bent inwards; median vein three-branched, branches at equal distances apart; submedian vein curved: hind wing long, somewhat oval, slightly broader than fore wing, apex and exterior margin very convex, abdominal margin long; costal vein short; subcostal three-branched; cell broad; discocellulars oblique, upper the shortest; median vein three-branched; submedian nearly straight. Body small, abdomen short, thorax and front of head clothed with long lax hairs. Palpi very long, slender, densely hairy beneath. Legs short, femora fringed beneath with long lax hairs. Antennæ short, club large and spatulate.

Type. *Baltia shawii* (*Mesapia shawii*), Bates, in Henderson and Hume's Lahore to Yárkand, p. 305 (1873).

9. *BALTIA SHAWII*. Plate I, fig. 5, ♂.

*Mesapia shawii*, Bates, Henderson and Hume's Lahore to Yárkand, p. 305, ♀, 1873.

*Baltia shawii*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 228.

*Male*. Upperside white; base of both wings densely black-speckled: fore wing with the costal edge ochreous and slightly black-speckled; a large black triangular oblique spot at end of the cell; a short discal transverse subapical black band, and a marginal row of black decreasing triangular spots: hind wing minutely and sparsely speckled with dark grey; a slight black streak at end of the cell, the speckles dense across the disc, and there forming a curved sinuous indistinct band. Body black. Palpi ochreous above and fringed with black beneath. Underside: fore wing with markings as above; costa and exterior margin tinged with ochreous: hind wing black-speckled, the speckles thickly disposed at the base, and also forming a narrow curved discal band; a slight black streak at end of the cell. Antennæ black, stem black-ringed. Abdomen beneath yellow. Legs black above, white beneath.

*Female* differs above in having the markings less prominently black, and the subapical band on fore wing continued across the wing on both upper and underside.

Expanse  $1\frac{5}{10}$  inch.

*Hab.*—Aktâgh, north of the Karakoram Pass (15,590 feet), June 14th, 1874.

The male insect only was captured by Dr. Stoliczka; the female was taken on the Chang Lung Pass (18,000 feet) by Mr. R. B. Shaw during the expedition of 1870.

## SECOND YARKAND MISSION.

## 10. SYNCHLOE BRASSICÆ.

*Pieris brassicæ*, Linn., Faun. Suec. p. 269 (1761); Syst. Nat. i, p. 759.—Esper, Schmett. i, t. 3, fig. 1.—Erschoff, Lep. Turkestan, p. 4.

*Pieris nipalensis*, Gray, Lep. Ins. Nepal, pl. 6, fig. 1 (1846).

*Hab.*—Lch, September 6th.

## 11. SYNCHLOE RAPE.

*Pieris rapæ*, Linn., Faun. Suec. p. 270 (1761); Syst. Nat. i, p. 759.—Esper, Schmett. i, pl. 3, fig. 2.—Erschoff, Lep. Turkestan, p. 5.

*Hab.*—Yangihissár, April, Aktalla, May 17th, both in Eastern Turkestan.

## 12. SYNCHLOE DAPLIDICE.

*Pieris daplidice*, Linn., Syst. Nat. i, p. 760 (1767); Esper, Schmett. i, figs. 414, 415.—Erschoff, Lep. Turkestan, p. 5.

*Hab.*—Gond and Sonamarg, both in Kashmir.

## 13. SYNCHLOE CHLORIDICE.

*Pieris chloridice*, Hübner, Eur. Schmett. i, figs. 712, 713 (1803-1818).—Esper, Schmett. i, pl. 90, fig. 1.

*Hab.*—Sarikol, May 2nd and 8th.

## 14. COLIAS HYALE.

*Colias hyale*, Linn. Faun. Suec. p. 272 (1761); Syst. Nat. I, p. 764.—Esper, Schmett. I, pl. 4, fig. 2.

*Hab.*—Ganganhir, Kashmir; Sánju, October 30th; Sarikol, May 2nd; Yangihissár, April.

## 15. COLIAS FIELDII.

*Colias fieldii*, Menétrics, Catal. Lep. Mus. Petrop. i, p. 79, t. 1, fig. 5 (1855).—Gray, Lep. Ins. of Nepal, pl. 5, fig. 2.

*Hab.*—Sonamarg, Kashmir, August 10th.

## 16. COLIAS STOLICZKANA. Plate I, fig. 1.

*Colias stoliczkana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 229.

*Male.* Upperside pale chrome-yellow, base of costal and abdominal borders greenish-yellow; base of wings speckled with blackish-brown; both wings with a broad yellowish-

brown marginal band; a light narrow dusky-brown lunular streak at end of the cell in the fore wing. Underside: fore wing pale yellow; costal border and outer margin greenish-yellow; a dusky black-speckled lunular spot at end of the cell, and discal row of indistinct speckled spots: hind wing greenish-yellow, with darker green speckles; an ochreous-brown patch at end of cell, enclosing a white triangular mark and small spot; a discal series of dusky-brown dentate spots. Antennæ and legs reddish.

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

*Hab.*—North of Changla (17,000 feet), Ladák.

Differs from *C. eogene*, Feld. (Novara Reise, Lep. t. 27, fig. 7), in being smaller, and in having the wings, including the cilia, pale chrome-yellow instead of orange-yellow; the discocellular mark is less prominent and lunular, not oval; the broad marginal band is of a much yellower colour. On the underside, the discocellular mark on the fore wing is also lunular and is not pale-centred.

Sub-Family—*PAPILIONINÆ*.

17. *PARNASSIUS CHARLTONIUS*. Plate I, fig. 3, ♀.

*P. charltonius*, Gray, Catal. Lep. Ins. Brit. Mus. i, p. 77, pl. 12, fig. 7, ♂, (1852).

*Hab.*—Kharbu (13,000 feet), Ladák.

18. *PARNASSIUS JACQUEMONTII*.

*P. jacquemontii*, Boisd., Spéc. Gén. Lep. i, p. 400 (1836).—Blanchard, Jacq. Voy. dans l'Inde, iv, Ins. p. 16, t. 1, figs. 3, 4.—Gray, Catal. Lep. Ins. Brit. Mus. i, pl. 12, figs. 1, 2.

*Hab.*—North of Changla (17,000 feet), Ladák.

Sub-Family—*LYCÆNINÆ*.

19. *POLYOMMATUS KASHGHARENSIS*. Plate I, fig. 7.

*Polyommatus kashgharensis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 230.

*Male*. Upperside pale blue, with narrow black exterior-marginal line; costal edge white. Cilia white, with dark inner border. Underside slightly pearly-grey, base of wings pale metallic green: fore wing with a white-bordered black spot in middle of the cell, and a curved discal series of five spots; a very indistinct spot at end of the cell, and a less distinct marginal series of spots: hind wing with three sub-basal and a curved discal series of six small white-circled black spots; an indistinct spot at end of the cell, and marginal row of spots with slightly ochreous interspaced upper dentated line.

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

*Hab.*—Yangihissár, Eastern Turkestan, April 1874.

Allied to *P. semiargus*.

## SECOND YARKAND MISSION.

## 20. POLYOMMATUS LEHANUS. Plate I, fig. 6.

*Polyommatus lehanus*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 230.

*Male*. Upperside violet-blue, somewhat brownish-blue at the margins. Cilia white. Underside leaden grey, palest at the apex and on hind wing: fore wing with a white-bordered black spot at end of the cell and a transverse discal oblique series of five spots: hind wing with a large triangular greyish-white spot at end of the cell, and a series of eight small round spots recurring from near base of costa across the disc to anal angle.

Expanse  $\frac{9}{10}$  inch.

*Hab.*—Leh, 8th September 1873.

Allied to *P. pheretes*.

## 21. POLYOMMATUS YARKANDENSIS. Plate I, fig. 8.

*Polyommatus yarkandensis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 229.

Allied to *P. icarius*. Upperside dark blue, anterior and exterior borders dusky-brown: an indistinct streak at end of the cell on fore wing: hind wing with a marginal row of indistinct ochreous-bordered black spots. Cilia cinereous-white. Underside ochreous grey; fore wing with a white-circled black spot in middle of the cell, another below it, one at end of the cell, and a curved discal series of seven spots; a marginal row of indistinct spots bordered above by a dentated line with pale ochreous interspaces: hind wing with three white-circled black subbasal spots and a curved discal series of seven spots; a marginal row of prominent spots, bordered above by ochreous-interspaced dentated line.

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

*Hab.*—Yarkand, 23rd May 1873.

## 22. POLYOMMATUS ARIANA.

*Polyommatus ariana*, Moore, Proc. Zool. Soc. 1865, p. 504, pl. 31, fig. 2.

*Hab.*—Mataian, Drás valley (11,200 feet), Leh, September 6th and 8th.

## 23. POLYOMMATUS GALATHEA.

*Polyommatus galathea*, Blanchard, Jacq. Voy. dans l'Inde, iv, Ins. p. 21, pl. 1, figs. 5, 6, ♂, (1844).

*Hab.*—Sonamarg, Kashmir, 10th August.

## 24. DIPSAS ODATA.

*Dipsas odata*, Hewitson, Illustr. D. Lep. p. 66, pl. 30, fig. 13-4.—Moore, Proc. Zool. Soc. 1865, p. 507.

*Hab.*—Gaganghir, Kashmir.

LEPIDOPTERA.

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Tribe—SPHINGES.

25. LEUCOPHLEBIA BICOLOR.

*Leucophlebia bicolor*, Butler, Proc. Zool. Soc. 1875, p. 16, pl. 2, fig. 5.

*Hab.*—Hatti, July 21st, Uri, July 23rd, both in Jhilam valley, on the road from Murree to Kashmir.

Tribe—BOMBYCES.

Family—ARCTIIDÆ.

26. HYPERCOMPA PRINCIPALIS.

*Euprepia principalis*, Kollar, in Hügel's Kaschmir, iv, p. 465, tab. 20, fig. 2 (1844).

*Hab.*—Gaganghir and Gond, in Kashmir.

27. ARCTIA ORIENTALIS.

*Arctia orientalis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 230.

Similar to *A. caja*, but differs, above, on the fore wing, in the general form of the bands, these being entire and transversely continuous, not broken longitudinally as in *A. caja*. On the hind wing the spot at the end of the cell is absent; this wing also has a yellowish-white narrow marginal line above, and brown cilia both above and beneath; the dorsal black band is on each segment and is moreover longer.

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

*Hab.*—Sonamarg, Kashmir, 8th August 1873.

This species has also been taken at Allahabad.

28. EUPROCTIS KARGHALIKA. Plate I, fig. 18.

*Euproctis karghalika*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 231.

*Male and female.* Fore wing creamy-white, veins greyish-white; a large brown-speckled ochrey discocellular spot and submarginal row of spots: hind wing white. Thorax creamy-white; abdomen of male golden-yellow, of female grey slightly ringed with black, and tipped with large glossy golden-yellow tuft. Shaft of antennæ white, pectinations brown. Underside glossy white, costa of fore wing in male broadly suffused with brown.

Expanse, ♂  $1\frac{5}{16}$ , ♀  $1\frac{6}{16}$  inch.

*Hab.*—Kárghalik Eastern Turkestan, May 29th and 30th.

29. EUPROCTIS LACTEA.

*Euproctis lactea*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 231.

Uniform creamy-white, without markings. Abdomen tipped with pale yellow. Underside paler creamy-white; costal border of fore wing ochreous-brown. Palpi ochreous-brown. Antennæ pale ochreous-brown, shaft white. Fore tibiæ with ochreous-brown tuft.

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

*Hab.*—Kárghalik, May 29th, 1874.

## SECOND YARKAND MISSION.

Family—*NOTODONTIDÆ*.30. *PTILOPHORA KASHGHARA*. Plate I, fig. 19.*Ptilophora kashghara*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 231.

*Male*. Fore wing dark grey, irrorated with brown scales, crossed by three indistinctly defined narrow zigzag brown bands, which are slightly dentated on the veins. Cilia alternately pale grey and brown: hind wing pale grey, sparsely sprinkled with brown scales. Thorax greyish-brown. Abdomen brown; three anterior segments with dorsal row of blackish tubercular scales; tip also black. Antennæ yellowish-testaceous. Underside grey, sparsely brown-speckled; long pubescence of abdomen brown and black. Legs pale brown.

Expanse  $1\frac{5}{16}$  inch.*Hab.*—Yangihissár, Eastern Turkestan, March 3rd, 1874.31. *OXICESTA MARMOREA*. Plate I, fig. 17.*Oxicesta marmorea*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 231.

*Male*. Upperside greyish-brown: fore wing with a pale yellowish irregular streak along middle of cell to costa near apex, and a small spot beyond the cell, an indistinct pale streak below the cell; apical margin of costa and outer margin pale testaceous alternated with a short black streak, which extends through the cilia: hind wing uniform pale greyish-brown, slightly yellowish at base. Body and legs greyish-brown. Antennæ brown. Underside uniform greyish-brown; cilia of fore wing with black streaks.

Expanse  $1\frac{1}{16}$  inch.*Hab.*—Sasák Taka, Eastern Turkestan, May 16th, 1874.

Differs from *O. geographica* in being longer in the wings, of a different colour, and without the two transverse zigzag white bands on the fore wings.

Family—*SATURNIIDÆ*.32. *NEORIS SHAHIDULA*.*Neoris shadulla*, Moore, Proc. Zool. Soc. 1872, p. 577.*Hab.*—Shahidula, Kuenlun (R. B. Shaw, 1870).

A distinct species from that figured by Felder (Nov. Reise, pl. 87, fig. 3), and named *Saturnia stoliczka*, from Ladák.

Tribe—*NOCTUES*.Family—*BOMBICIDÆ*.33. *ACRONYCTA KARGHALIKA*. Plate I, fig. 9.*Acronycta karghalika*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 232.

*Female*. Fore wing pale silvery brownish-grey; reniform and orbicular marks whitish, brown-bordered, and contiguous; a longitudinal streak from the base, a contiguous trans-

verse subbasal recurved line, a discal transverse lunular line (crossed near posterior angle by a short streak), some short costal marks, and a streak on cilia between each vein, brown: hind wing glossy greyish-white, outer borders and veins pale greyish-brown. Thorax and abdomen dark grey. Antennæ grey. Underside greyish-white: fore wing with greyish-brown costal streaks and hinder margin: hind wing with brown basal costal streak and discocellular spot. Palpi brown at sides. Legs grey, femur tipped, tibia longitudinally streaked, and tarsi banded with black.

Expanse  $1\frac{5}{8}$  inch.

*Hab.*—Kárghalik, May 29th, 1874.

Nearest allied to *A. tridens*, but differs in being darker; the markings are somewhat similar, but the basal longitudinal streak is shorter, which gives a wider interspace between the two transverse lines.

Family—*APAMIDÆ*.

34. *HYDRÆCIA TIBETANA*. Plate I, fig 21.

*Hydræcia tibetana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 232.

*Male*. Fore wing pale reddish-testaceous, crossed by two pale brown narrow lines with pale inner border, the first line subbasal and outwardly oblique, the other discal; a submarginal row of blackish dots and pale marginal line; orbicular and reniform marks indistinctly defined by a brown border: hind wing and abdomen paler. Underside palest on middle of wings, discal line on both wings and discocellular spot on hind wing slightly perceptible. Antennæ, palpi, and fore legs reddish-testaceous.

Expanse  $1\frac{5}{8}$  inch.

*Hab.*—Leh, September 1st, 1873.

35. *MAMESTRA CANESCENS*. Plate I, fig. 13.

*Mamestra canescens*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 233.

*Male*. Fore wing brownish-grey: orbicular and reniform marks greyish-white with narrow black border; a short double black streak below the base of the cell, and a quadrate mark below the orbicular spot; an indistinct pale submarginal irregular fascia and black marginal lunular line with whitish inner border: hind wing pale greyish-brown. Antennæ brown. Underside glossy pale greyish-brown, each wing with indistinct short transverse discocellular streak.

Expanse  $1\frac{5}{8}$  inch.

*Hab.*—Kárghalik, Eastern Turkestan, May 30th, 1874.

36. *MAMESTRA BRASSICÆ*.

*Phal. noct. brassicæ*, Linn., Syst. Nat. i, p. 516.

*Hab.*—Srinagar, Kashmir, August 9th.

Family—*NOCTUIDÆ*.

37. *AGROTIS SEGETUM*.

*Noctua segetum*, Schiff., W. V. p. 252 (1776).—Eversm., Fauna Volgo-Ural, p. 196.

*Agrotis segetum*, Steph., Haust. ii, p. 115.—Erschoff, Lep. Turkestan, p. 41.

*Hab.*—Tankse, Ladák; Kárghalik, Eastern Turkestan, May 29th.

38. *AGROTIS AQUILINA*.

*Noctua aquilina*, Schiff., W. V. p. 80 (1776).

*Hab.*—Tankse, 13,000 feet, Leh, August 29th, September 8th.

39. *AGROTIS TIBETANA*. Plate I, fig. 16.

*Agrotis tibetana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 233.

Upperside: fore wing greyish-brown, with indistinct dusky transverse subbasal double sinuous line, discal dentate lines, and pale outer-bordered wavy narrow submarginal band, speckled orbicular spot, and quadrate reniform mark. Cilia with narrow white marginal line: hind wing brownish-white, veins and outer margin brown; cilia white. Antennæ and body greyish-brown, tip of abdomen yellowish.

Underside: fore wing greyish-white, dusky-brown basally along the costa and hind margin, speckled on outer margin: hind wing whitish, an indistinct dusky spot at end of the cell, a spot medially on each vein, and narrow lunular marginal line. Legs greyish-brown, femora and tibiæ streaked, and tarsi banded, with black.

Expanse  $1\frac{3}{5}$  inch.

*Hab.*—Leh (August 8th, 1873).

40. *SPÆLOTIS UNDULANS*. Plate I, fig. 10.

*Spælotis undulans*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 233.

*Male and female.* Fore wing grey-brown, irrorated with darker scales, crossed by subbasal and ante and post-medial double pale-bordered undulated brown bands, each ending on the costa in a darker spot; a submarginal pale outer-bordered brown wavy fascia, and small black marginal lunules: hind wing glossy greyish-white with brownish-tinged borders, brown veins and lunular marginal line. Thorax grey-brown, abdomen greyish-white. Antennæ and palpi greyish-brown. Underside glossy greyish-white. Tibiæ streaked, and tarsi banded, with black.

Expanse  $1\frac{8}{10}$  inch.

*Hab.*—Ak Masjid, June 2nd, south-east of Chiklik, June 5th, 1874, both south of Yárkand.

Allied to *Spælotis pyrophila*.

Family—*ORTHOSIDÆ*.41. *TÆNIOCAMPA CHIKLIKA*. Plate I, fig. 11.*Tæniocampa chiklika*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 234.

*Male*. Upperside grey: fore wing densely brown-speckled. Cilia with a brown-speckled line; orbicular and reniform spots pale; an indistinct transverse subbasal sinuous pale-bordered line: hind wing minutely brown-speckled, and with a pale brown ciliary line. Underside paler; both wings uniformly speckled, and with a very indistinct sinuous discal band. Antennæ blackish, shaft grey. Body, palpi, and legs brown-speckled.

Expanse  $1\frac{1}{8}$  inch.*Hab.*—South-east of Chiklik, June 6th, 1874.Family—*HADENIDÆ*.42. *HADENA STOLICZKANA*. Plate I, fig. 12.*Hadena stoliczkana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 234.

*Male*. Fore wing pale greyish-brown, crossed by three indistinct narrow brown zigzag double bands; orbicular spot pale, reniform mark very indistinct; two black spots below the apex; a double narrow marginal blackish lunular line; some short streaks on the costa: hind wing with the veins and a broad marginal band fuliginous-brown. Cilia white. Body pale greyish-brown. Antennæ brown. Underside greyish-white; both wings crossed by a distinct curved discal brown band: fore wing with a discocellular brown lunule, and hind wing with a spot; a marginal lunular dotted line. Legs grey; tarsi banded with black.

Expanse  $1\frac{1}{2}$  inch.*Hab.*—Kufelang (14,810 feet), June 6th, 1874.Family—*HELIOTHIDÆ*.43. *HELIOTHIS SCUTOSA*.*Heliothis scutosa*, Schiff., Wien. Verz. p. 89 (1776).—Guén., Noct. ii, p. 182.*Hab.*—Gaganghir, Kashmir.44. *HELIOTHIS DIPSACEA*.*Heliothis dipsacea*, Linn. Syst. Nat. ii, p. 856 (1776).—Guén., Noct. ii, p. 181.—Eversm., Fauna Volgo-Ural, p. 327.—Erschoff, Lep. Turkestan, p. 48.*Hab.*—Posgám, near Yárkand, in lucerne-fields, May 28th. Yangihissár, April.

45. *HELIOTHIS HYBLÆOIDES*. Plate I, fig. 20.

*Heliothis hyblæoides*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 234.

Upperside: fore wing grey, minutely brown-speckled; an indistinctly apparent brown curved streak at end of the cell, and a submarginal pale zigzag line: hind wing brownish-white, with a broad greyish-black medial transverse band (which is confluent with a curved discocellular black streak) and a large black oval spot on middle of outer margin; abdominal border tinged with brown; cilia white. Body grey, beneath whitish; legs greyish-white, brown-speckled.

Underside greyish-white: fore wing with a dusky-black transverse broad apical band and an outwardly-oblique medial band: hind wing with a dusky-black dentate streak at end of the cell, slight medial band, and oval marginal spot.

Expanse  $1\frac{3}{8}$  inch.

*Hab.*—Chiklik, south of Yárkand, June 3rd, 1874.

Family—*ACONTIIDÆ*.

46. *AGROPHILA SULPHURALIS*.

*Agrophila sulphuralis*, Bergstr., Ins. Suec. i, p. 16.—Guén., Noct., ii, p. 206.—Eversm., Fauna Volgo-Ural, p. 461.

*Ph. trabealis*, Scop., Ent. Carn. p. 40.

*Agrophila trabealis*, Erschoff, Lep. Turkestan, p. 52.

*Hab.*—Yárkand.

47. *ACONTIA LUCTUOSA*.

*Acontia luctuosa*, Schiff, Wien. Verz. p. 90 (1776).—Guén., Noct. ii, p. 223.—Eversm., Fauna Volgo-Ural, p. 331.—Erschoff, Lep. Turkestan, p. 50.

*Hab.*—Yangihissár, April.

Family—*ERASTRIDÆ*.

48. *BANKIA ARGENTULA*.

*Bankia argentula*, Hübn., Beit., i, p. 9, t. 2, fig. F. (1786).

*Hab.*—Ak Masjid, south of Yárkand.

Family—*CATOCALIDÆ*.

49. *CATOCALA PUDICA*, n. sp.

Allied to *C. puerpera*. Differs from Southern European specimens in the fore wing being prolonged at the apex and having its exterior margin more oblique; this wing is also much paler in colour, and has the two bands of the underside visible from above; the ante-and

postmedial transverse sinuous lines and reniform mark are very indistinct, and the marginal row of black spots nearly obsolete; on the hind wing the inner black band is narrower and less irregularly angled in the middle.

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

*Hab.*—Pashkyum, Ladák, 10,870 feet.

This species is described from a specimen taken by the late Mr. R. B. Shaw in 1870, and now in my own collection. A single wing only of a specimen of what appears to be this species, is preserved in the collection made by Dr. Stoliczka, having been taken at Sánju, 30th October.

Family—*TOXOCAMPIDÆ*.

50. *APOPESTES PHANTASMA*.

*Noctua phantasma*, Eversm., Bull. Mosc. 1843, p. 546.

*Spintherops phantasma*, Guén., Noct. ii, p. 422.—Erschoff, Lep. Turkestan, p. 58.

*Hab.*—Yárkand, 12th November.

Tribe—*PYRALES*.

Family—*BOTYDÆ*.

51. *BOTYS FLAVALIS*.

*Pyralis flavalis*, Schiff., W. V. p. 121 (1776).

*Hab.*—Ak Masjid, south of Yárkand, Sarikol, 2nd May. Yangihissár, April. Posgám, in lucerne-fields, 28th May.

Family—*ENNYCHIDÆ*.

52. *PYRAUSTA CUPREALIS*. Plate I, fig. 26.

*Pyrausta cuprealis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 235.

Upperside dark cupreous-brown: hind wing with a broad medial discal yellow band. Underside paler, basal two-thirds of both wings yellow, with brown-speckled subbasal patch. Antennæ black. Body beneath cupreous-black speckled with yellow. Palpi yellow beneath. Legs yellow, with cupreous speckles.

Expanse  $\frac{5}{8}$  inch.

*Hab.*—Gaganghir (near Sonamarg), Kashmir.

Family—*SCOPARIDÆ*.

53. *EUDOREA GRANITALIS*. Plate I, fig. 25.

*Eudorea granitalis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 235.

Upperside: fore wing pale brown, crossed by several irregular wavy grey-bordered black lines; cilia grey, alternated with black: hind wing greyish-white, traversed by numerous

short brown striæ somewhat regularly disposed between the veins, the wing being suffused with brown along exterior margin. Cilia grey, with dusky line. Body grey, brown-speckled. Palpi brown at apex, greyish at base. Legs grey, speckled with black. Underside as above; markings paler.

Expanse  $\frac{8}{10}$  inch.

*Hab.*—South-east of Chiklik, hills south of Yárkand, 5th June 1874.

#### 54. EUDOREA TRANSVERSALIS.

*Eudorea transversalis*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 235.

*Male.* Upperside: fore wing grey, speckled with brown, crossed by an oblique subbasal and a recurved discal black speckled band; exterior margin black-spotted; some black speckles at end of the cell: hind wing pale brown, with darker marginal border. Cilia grey, with brown border. Body grey, brown-and black-speckled. Palpi speckled with black and white above. Antennæ dark brown. Underside pale ochrey-grey. Legs speckled with grey and black, fore and middle legs with black bands. Female paler, the bands across the wings broader and more distinct.

Expanse  $\frac{6}{10}$  inch.

*Hab.*—Ighizyar (5,600 feet), 18th May 1874, Yangihissár (4,320 feet), April 1874, both in Eastern Turkestan.

Tribe—GEOMETRES.

Family—BOARMIDÆ.

#### 55. HYPOCHROMA PSEUDOTERPNARIA.

*Hypochroma pseudoterpnaria*, Guén., Phal. i, p. 276.

*Hab.*—Uri, Jhilam valley, 23rd July.

#### 56. GNOPHOS OBTECTARIA.

*Gnophos obtectaria*, Walker, Catal. Lep. Het. B. M. 35, p. 1597.

*Hab.*—Sonamarg, Kashmir.

#### 57. GNOPHOS STOLICZKARIA. Plate I, fig. 22.

*Gnophos stoliczkaria*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 235.

Upperside pale ochreous-grey, minutely brown-speckled, the speckles forming more or less numerous short transverse striæ; both wings with an indistinct oval brown spot at end of the cell, and marginal lunular dotted line: fore wing with a subbasal and discal, and hind

wing with a discal, series of dentate brown points. Cilia white. Underside paler; speckles sparsely apparent; cell-spot less distinct.

Expanse  $1\frac{3}{8}$  inch.

*Hab.*—Ak Masjid, south of Yárkand, 2nd June 1874.

Family—*GEOMETRIDÆ*.

58. *GEOMETRA DISPARTITA*.

*Geometra dispartita*, Walker, Catal. Lep. Het. Brit. Mus. xxii, p. 520.

*Hab.*—Beshterek, south of Yárkand, 31st May.

Family—*LARENTIDÆ*.

59. *EUPITHECIA SATURATA*.

*Eupithecia saturata*, Guén., Phal. ii, p. 269.

*Hab.*—Chiklik, hills south of Yárkand, 3rd June.

60. *THERA KASHGHARA*. Plate I, fig. 23.

*Thera kashghara*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 236.

Upperside pale brownish-cinereous: fore wing crossed by three equidistant pale-bordered blackish lines, the basal line nearly straight, the second slightly waved, the outer irregularly undulated, each darkest at costal end, the interspace between the two outer ones darker cinereous-brown; a slight short sinuous spot at apex; indistinct paler transverse undulating lines on outer margin; a distinct darker marginal narrow line. Underside paler; transverse lines very indistinctly visible. Legs dusky-brown above. Antennæ brownish.

Expanse  $1\frac{3}{8}$  in.

*Hab.*—Chiklik (3rd June 1874), 14,480 feet.

Tribe—*CRAMBICES*.

Family—*PIHYCIDÆ*.

61. *HOMÆOSOMA VENOSELLA*. Plate I, fig. 24.

*Homæosoma venosella*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 236.

Upperside: fore wing pale greyish-ochreous, minutely brown-speckled, the speckles sparsely disposed along the veins; having a transverse pale discal indented line and an indistinct space at end of the cell: hind wing cinereous-white with pale brown marginal line. Cilia white. Body and palpi above greyish-ochreous, paler beneath. Underside whitish-cinereous.

Expanse  $\frac{7}{8}$  inch.

*Hab.*—Ak Masjid, south of Yárkand (8,870 feet), June 2nd, 1874.

## 62. MYELOIS UNDULOSELLA. Plate I, fig. 27.

*Myelois undulosella*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 236.

*Male and female.* Upperside ochreous-grey: fore wing speckled with brown, crossed by two medial oblique undulating pale-bordered blackish lines, both of which are sinuous at the costal end; a dark pale-centred streak at end of the cell; middle of hinder margin and the outer border grey, the latter with an indistinct pale sinuous line slightly black-speckled; cilia whitish, alternated with two dark marginal lines: hind wing pale brownish-cinereous externally; cilia white alternated with one dark marginal line, and having a dark patch situated at the middle of the margin. Body ochreous-grey. Underside pale cinereous.

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

*Hab.*—Ak Masjid, south of Yárkand (8,870 feet), June 2nd, 1874; Aktala, west of Yárkand (7,342 feet), May 17th, 1874.

## 63. MYELOIS GRISELLA. Plate I, fig. 15.

*Myelois griseella*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 236.

Upperside cinereous-grey: fore wing densely irrorated with brown, crossed by two medial undulating very indistinct speckled lines; an indistinct streak at end of the cell; both wings with an outer marginal narrow brown lunular line: hind wing whitish, with a very pale cinereous-brown marginal and an indistinct narrow submarginal band. Cilia whitish, with a narrow marginal dark line. Underside paler cinereous. Head and thorax brownish. Abdomen cinereous-brown.

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

*Hab.*—South-east of Chiklik, south of Yárkand (June 5th, 1874).

## Tribe—TORTRICES.

## 64. CONCHYLIS STOLICZKANA. Plate I, fig. 14.

*Conchylis stoliczkana*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 237.

Upperside: fore wing white, with three transverse outwardly oblique ochreous-brown bands, two inwardly oblique discal bands, and a spot at end of the cell; a brown-speckled marginal band: hind wing cinereous-white, with a narrow brown marginal band. Body white and black-speckled, with white segmental bands. Legs white. Palpi white, brown-speckled. Underside cinereous-white, outer bands on fore wing indistinctly visible.

Expanse  $\frac{6}{8}$  inch.

*Hab.*—South-east of Chiklik, (June 5th, 1874).

## Tribe—TINEINES.

## Family—TINEIDÆ.

## 65. ADELA SULZELLA.

*Tinea sulzella*, Schiff., W. V. 143 (1776).

*Hab.*—Gaganghir, Kashmir.

## LEPIDOPTERA.

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Family—*GELECHIDÆ*.66. *DEPRESSARIA STIGMELLA*.*Depressaria stigmella*, Moore, Ann. and Mag. Nat. Hist. 1878, p. 237.

Fore wing pale brownish-ochreous, greyish along the apical portion of the costa, interspersed with a few dusky speckles; a dusky-grey short straight streak at end of the cell, and a few speckles on outer margin. Legs pale ochreous. Hind wing pale ochreous-white. Underside of both wings paler.

Expanse  $\frac{1}{6}$  inch.

*Hab.*—Yangihissár, Eastern Turkestan, (March 3rd, 1874).

This species is nearest allied to the European *D. subpropinqua*lla.

Tabular List showing geographical Distribution.

Kashmir.	Localities where captured.	Geographical Distribution.
<i>Epinephile chena</i>	Gaganghir . . . . .	W. Himalayas (Pangi (Basahir); Kunawur).
<i>Aulocera swaha</i>	Gaganghir . . . . .	Ditto (Simla).
<i>Synchlœe daptidice</i>	Gond, Sonamarg . . . . .	W. Asia; Europe.
<i>Colias hyale</i>	Gaganghir . . . . .	W. Himalayas (Masuri); W. Asia; S. and C. Europe
<i>Colias feldtii</i>	Sonamarg . . . . .	Ditto (Masuri); Punjab.
<i>Polyommatus galathea</i>	Sonamarg . . . . .	
<i>Dipsas odata</i>	Gaganghir . . . . .	Ditto (Upper Kunawur).
<i>Leucophrisia bicolor</i>	Hatti Uri . . . . .	Ditto.
<i>Hypercompa principalis</i>	Gond, Gaganghir . . . . .	Ditto.
<i>Arctia orientalis</i> , n. sp.	Sonamarg . . . . .	Ditto N. W. Provinces of India (Allahabad).
<i>Mamestra brassicae</i>	Srinagur . . . . .	Ditto India; W. Asia; Europe.
<i>Heliothis scutosa</i>	Gaganghir . . . . .	Ditto W. Asia; Europe.
<i>Pyrausta cuprealis</i> , n. sp.	Gaganghir . . . . .	
<i>Hypochroma pseudoterpnaria</i>	Uri . . . . .	Ditto Punjab.
<i>Gnophos oblectaria</i>	Sonamarg . . . . .	Ditto (Simla).
<i>Adela sulzella</i>	Gaganghir . . . . .	W. Asia; Europe.

## LADÁK.

<i>Hipparchia lehana</i> , n. sp.	Leh; Kharbu.	
<i>Hipparchia kaderia</i>	Leh . . . . .	Kashmir.
<i>Aulocera brahmiana</i>	Dras Valley . . . . .	Kashmir (Margan Pass).
<i>Argynnis jainadeca</i>	Leh . . . . .	Kashmir; Upper Kunawur.
<i>Synchlœe brassicae</i>	Leh . . . . .	Kashmir; W. Himalayas; W. Asia; Europe.
<i>Parnassius charltonius</i>	Kharbu.	Runang Pass, 13,000 feet.
<i>Polyommatus lehana</i> , n. sp.	Leh.	
<i>Polyommatus ariana</i>	Dras Valley . . . . .	Sanga (Puspa Valley); Kashmir. W. Himalayas; Pangi (Basahr).
<i>Hydracia tibetana</i> , n. sp.	Leh.	
<i>Agrotis aquilina</i>	Leh . . . . .	W. Asia; S. and C. Europe.
<i>Agrotis tibetana</i> , n. sp.	Leh.	

## Tabular List showing geographical Distribution—continued.

## MOUNTAIN RANGE BETWEEN LADÁK (LEH) AND PLAINS OF YÁRKÁND.

Kashmir.	Localities where captured.	Geographical Distribution.
<i>Vanessa ladukensis</i> , n. sp.	Gogra, Karatágh Lake.	
<i>Baltia shawii</i>	Aktágh	Chang Lung Pass.
<i>Colias stoliczkana</i> , n. sp.	N. of Changla.	
<i>Parnassius jacquemontii</i>	N. of Changla	Mountains of Ladák.
<i>Parnassius ucco</i>	Lupsang or Lak Zung, 17,537	Ditto.
<i>Neoris shahidula</i>	Shahidúla.	
<i>Hadena stoliczkana</i> , n. sp.	Kufelang.	
<i>Agrotis segetum</i>	Tankse	N. W. India; W. Asia; Europe.
<i>Agrotis aquilina</i>	Tankse	W. Asia; Europe.

## PLAINS OF YÁRKÁND.

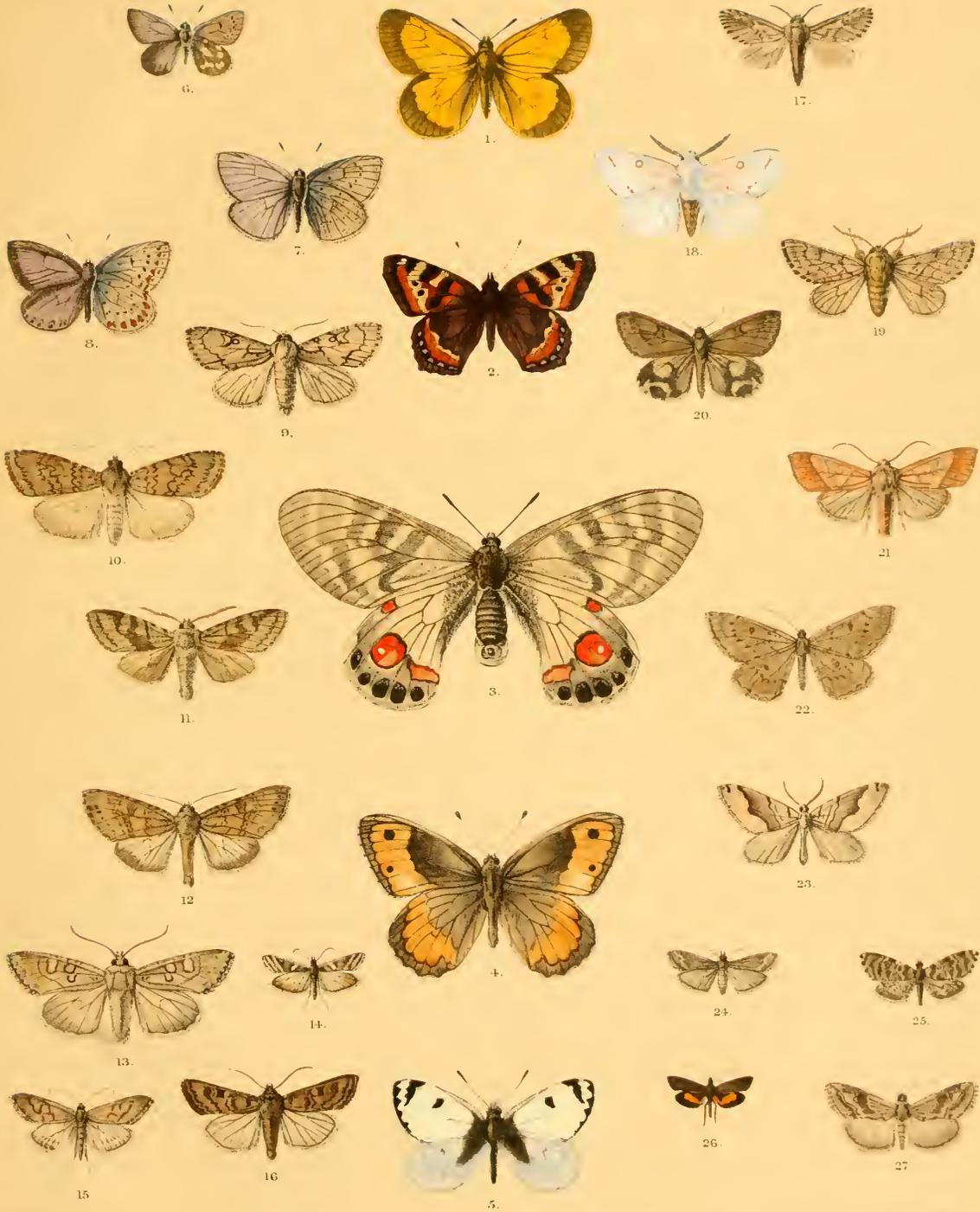
<i>Pyrameis cardui</i>	Sánju; Kárghalik	Asia; Africa; Europe; N. America.
<i>Synchlœ rape</i>	Yangihissár	W. Asia; Europe.
<i>Colias hyale</i>	Sánju; Yangihissár	W. Asia; Europe.
<i>Polyommatus kasgharensis</i> , n. sp.	Yangihissár.	
<i>P. yarkandensis</i> , n. sp.	Yárkand.	
<i>Euproctis karghalika</i> , n. sp.	Kárghalik.	
<i>Euproctis lactea</i> , n. sp.	Kárghalik.	
<i>Ptilophora kasghara</i> , n. sp.	Yangihissár.	
<i>Acronycta karghalika</i> , n. sp.	Kárghalik.	
<i>Mamestra canescens</i> , n. sp.	Kárghalik.	
<i>Agrotis segetum</i>	Kárghalik	N. W. India; W. Asia; Europe.
<i>Heliothis dipsacea</i>	Posgám; Yangihissár	W. Asia; S. Europe.
<i>Agrophila sulphuralis</i>	Yárkand	W. Asia; S. and C. Europe.
<i>Acontia luctuosa</i>	Yangihissár	W. Asia; S. and C. Europe.
<i>Catocala pudica</i> , n. sp.	Sánju	Paskyum, Ladák, 10,870 feet (Shaw).
<i>Apopstes phantasma</i>	Yárkand; Bora (Shaw)	W. Asia.
<i>Botys flavalis</i>	Yangihissár; Posgám	W. Asia; S. and C. Europe.
<i>Endorea transversalis</i> , n. sp.	Yangihissár; Ighizyar.	
<i>Geometra dispartita</i>	Beshterek	N. W. India.
<i>Depressaria stigmella</i> , n. sp.	Yangihissár.	

## HILLY COUNTRY WEST AND SOUTH-WEST OF THE PLAINS OF YÁRKÁND.

<i>Synchlœ chloridice</i>	Sarikol	W. Asia; S. Europe.
<i>Colias hyale</i>	Sarikol	W. Asia; Europe.
<i>Ozicesta marmorea</i> , n. sp.	Sasak Taka.	
<i>Spalotis undulans</i> , n. sp.	Ak Masjid; Chiklik.	
<i>Tenioampa chiklika</i> , n. sp.	Chiklik.	
<i>Hetiiothis hybleoides</i> , n. sp.	Chiklik.	
<i>Bankia argentula</i>	Ak Masjid	W. Asia; Europe.
<i>Botys flavalis</i>	Ak Masjid; Sarikol	W. Asia; S. and C. Europe.
<i>Eudorea granitalis</i> , n. sp.	Chiklik.	
<i>Gnophos stoliczkaria</i> , n. sp.	Ak Masjid.	
<i>Euzithecia satyrata</i>	Chiklik	W. Asia; S. and C. Europe.
<i>Thera kasgharia</i> , n. sp.	Chiklik.	
<i>Homœosoma venosella</i> , n. sp.	Ak Masjid.	
<i>Myelois undulosella</i> , n. sp.	Ak Masjid; Aktala.	
<i>Myelois grisella</i> , n. sp.	Chiklik.	
<i>Conchylis stoliczkana</i> , n. sp.	Chiklik.	

## ERRATUM.

In the names at foot of plate for "*Myelois griscola*," read "*Myelois grisella*."



Water and other

Museum of London

1. *Vanessa Stoliczkae* 2. *Vanessa Ladakensis* 3. *Parnassius Uluatinius* 4. *Hipparionis (Xenon)* 5. *Battus (Zany)*  
 6. *Pieris mirabilis Schanus* 7. *P. Kushgharensis* 8. *P. Yarkundensis* 9. *Acronycta Kargalica* 10. *Sp. (unident.)*  
 11. *Teranocampa Thikika* 12. *Hadena Stoliczkae* 13. *Manestra laneseae* 14. *Concya Stoliczkae* 15. *Myra (unident.)*  
 16. *Agrotis Tibetana* 17. *Oxycesta marmorea* 18. *Euproctis Kargalica* 19. *Phosphora Kashghara* 20. *Heathia (unident.)*  
 21. *Hydrus Tibetana* 22. *Onophis Stoliczkae* 23. *Thera Kashghara* 24. *Homocidoma venosella* 25. *Eudora (unident.)*  
 26. *Pyrausta cuprealis* 27. *Myelis undulosea*



Moore, Frederic

VI. *On the Genera and Species of the Lepidopterous Subfamily Ophiderinæ inhabiting the Indian Region.* By F. MOORE, F.Z.S. etc.

Received January 19th, read January 20th, 1880.

[PLATES XII.—XIV.]

THE genus *Ophideres* was first characterized in 1832, in the 'Voyage de l'Astrolabe' ("Entom." p. 245), by Dr. Boisduval, who described a single species from Brazil under the name of *O. princeps*. In Guérin's 'Iconogr. Règn. Anim.' ("Ins." pl. lxxxix. f. 1), he further figured a Madagascar species as *O. imperator*, which he redescribed and figured (the male) in 1833, in the 'Faune Entom. Madagasc. Bourb. et Maur.' p. 99, pl. xiv. fig. 3.

In 1852 M. Guenée, in the 'Spec. Gén. des Léop. Noctuelites,' iii. p. 109, recharacterized the genus, including in it and describing all the then known species of the group. This arrangement was followed by Mr. Walker in 1857, in the British-Museum 'Catalogue of Lepidoptera Heterocera,' and has been continued by all subsequent writers.

Having made a recent examination of the several species of this interesting group of Moths, I submit the result in the following pages, treating therein, however, only of the species of the Indian Region. The species being much diversified in the form of the external outline of the fore wings, and also in the shape of the terminal joint of the palpi, as well as exhibiting a dissimilarity in the pattern of markings in the sexes, I have found it necessary to group them under various genera, and to restrict the genus *Ophideres* to its type, namely *O. princeps*. Of six of the species described, figures are here given of the larva and pupa, copied from original drawings made in India by Mr. A. Grote, Sir W. Elliot, and Mr. S. N. Ward, and from others made in Java by the late Dr. Horsfield.

This group of Moths has hitherto been placed by entomologists between the families Catochalidæ and Erebidæ; they have, however, closer affinity to the Ophiuidæ, their larvæ also agreeing better with those of the latter in form. The genus *Lagoptera* is very closely allied to them. I therefore place them, together with the subfamily Phyllodinæ, between the Bendidæ (of which family *Hulodes caranea* is a well-known insect) and the Ophiuidæ.

## Genus OTHREIS, Hübner.

*Othreis*, Hübner, Verz. bek. Schmett. p. 264 (1816).

*Corycia*, Hübner, ib. p. 265.

*Ophideres* (part), Guenée, Walker.

Fore wing elongated; costa nearly straight, slightly arched near the end, apex acute; exterior margin oblique and slightly convex hindward, even in the male, scalloped in the female; posterior margin short, with a fringed lobe near base, and slight excavation beyond; costal vein extending to near apex; first and second branches of subcostal at equal distances before end of cell, third starting from the second at a short distance beyond the cell and forked near the apex, fifth anastomosed to third near its juncture with the second, sixth from angle below end of the cell; discocellular very slender, recurved; two upper median branches from angles above lower end of the cell, third from its end, and fourth at one third; submedian bent near the base. Hind wing broad, anterior margin extending beyond angle of fore wing; exterior margin convex, with a slight subanal angle, abdominal margin short; costal vein recurved, extending to apex; subcostal with two branches from end of the cell; discocellular very slender, deeply concave; upper median branches from pointed angles at end of the cell, lower contiguous; three submedians. Body robust, densely clothed above; fore femora and tibiæ thickly pilose beneath, the latter furnished beneath with an elongated, pouched, glandular spur; middle and hind legs less pilose, with spurred tibiæ and spined tarsi; palpi large, long, ascending, second joint clothed with short adpressed hairy scales, third joint slender, long, and with a slight hairy tuft above. Antennæ filiform, long, thickened towards the base.

Larva semilooped, cylindrical, sparsely covered with minute hairs; with sixteen feet, but the first pair of ventrals rudimentary; eleventh segment thickened at the dorsal extremity and surrounded by a tubercular spot. When at rest holds the head up and also the last segments; frequently curling the anterior segments up in front. Changes to pupa in a canopy of growing leaves fixed together and lined with a net-like web; pupa fastened by the tail.

OTHREIS FULLONICA. (Plate XII. figs. 1, 1*a*, larva and pupa; Plate XIII. figs. 1, 1*a*, imago, ♂ ♀.)

*Phalena B. fullonica*, Linn. Syst. Nat. ii. p. 812 (1767); Clerck, Icones, pl. xlviii. figs. 1-4 (Seba, Ins. t. 42. f. 13, 14?).

*Ophideres fullonica*, Guen. Noct. iii. p. 111; Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1222.

*Noctua dioscoreæ*, Fabr. Syst. Ent. p. 593, Spec. Ins. ii. p. 212, Mant. Ins. ii. p. 137, Ent. Syst. iii. 2, 16, 26, ♀.

*Phal. N. pomona*, Cramer, Pap. Exot. 1. pl. 77. f. C, ♀.

*Othreis pomona*, Hübner, Verz. bek. Schmett. p. 264.

*Ophideres cajeta*, Walk. Catal. Lep. Het. B. M. xiii. p. 1223 (nec Cramer).

*Male.* Fore wing dark ferruginous-brown or vinous-brown, numerously covered with either ochreous, dark green, or greyish strigæ, which on the exterior border form irregular fasciæ and terminate in a straight streak to the apex; an ante- and a postmedian oblique transverse darker brown line, the interspace glossy and suffused generally with purple-brown, the reniform mark being more or less unglossed. Hind wing orange-yellow, with a broad black apical marginal band and row of pale yellow ciliary spots; a large broad curved black discal band. Thorax, head, palpi, and legs above dark brown; abdomen orange-yellow; legs and abdomen beneath paler; a yellow spot on tibiæ and tarsal joints; palpi black-tipped.

*Female.* Fore wing brighter-coloured, mottled grey and brown, strigæ paler grey; discal area and fasciæ on exterior border chalybeous-grey; postmedian line irregularly sinuous, with a prominent white dentate spot on its middle and narrow lunules below it; reniform mark triangular, and more or less black; a minute black orbicular spot. Hind wing and body as in male.

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

*Hab.* India, N.W. *Himalayas* (*Masuri, Kussowlie*), *Lucknow, Umballa, E. Himalayas* (*Darjiling*), *Cachar, Allipore, W. and E. Ghauts* (*Bombay, Malabar, Madras*); *Ceylon*; *Andamans*; *Malay peninsula*; *Penang*; *Sumatra*; *Java*; *Formosa*; *Shanghai*.

From the above-cited localities (specimens from which have been examined) it will be seen that this species has a very extended range of habitat. Specimens have been also occasionally recorded as having been taken on board ship in the eastern seas, many miles from land. It also occurs at Moreton Bay, Australia; and an allied (or probably the same) species, was taken by Mr. Wallace on Ké Island. Other closely allied species from New Hebrides and Navigators' Islands, and another from Sierra Leone, are in the British-Museum Collection.

This insect is stated to be dreaded by the Australian colonists on account of the mischief the imago causes to the orange plantations—perforating the ripening fruit with its proboscis, and thus causing them to soon fall to the ground and rot.

This insect has been reared by Mr. A. Grote at Allipore, near Calcutta, from larvæ feeding on *Menispermum glabrum*. Sir W. Elliot reared it at Vizagapatam on *Cocculus acuminatus* and *C. cordifolius*; and in Java it was frequently reared by Dr. Horsfield from larvæ feeding on the Tayungan (*Epibatherium*, sp.) and on the Buntia Silit (*Leschenaultia*, sp.) from November to April, being most abundant in the latter month.

Major A. M. Lang, in his Entomological Note-book, gives the following account of the rearing of the larva of this species at Lucknow in 1866:—

“September 8th. Took from the middle of the underside of a leaf of (? *Menispermum*) a solitary, spherical, smooth, unsculptured, translucent, light-yellowish egg, about  $\frac{1}{5}$ ''' in diameter. Four or five more found on the 13th, all on the underside. On the 11th a

minute Geometriform larva was hatched; it was very active, dropping itself by a silken thread when disturbed; transparent, yellow and blackish in alternate belts, sparsely covered with hairs; fourteen legs (those on 6th segment wanting); head disproportionately large, holding the head up and also the two last segments.

“On the 13th it changed to a shining, translucent green, the anterior and posterior segments very much more pale and yellow, 4<sup>th</sup> long; head now the smallest segment, dull pale testaceous, the rest of the segments a pale translucent yellow, which, however, in segments 2 to 9 inclusive, look green—a light bright grass-green—the colour seeming to come from the inside; on the 4th, 5th, 6th, 7th, and 10th segments are pale brown lateral patches; every segment has apparently ten black tubercular spots, each carrying a hair; legs black.

“On the 14th it changed to a velvety black, of the same form and attitude as before; a vermilion spot on each side of the 5th and 6th segments, on the 5th each spot accompanied by an anterior white speck; white lateral markings on 10th and 11th segments.

“On the 17th it changed to a black, with rufous and white ocelli where the vermilion spots were in preceding stage, and several rufous and white specks.

“On the 20th it changed to a most handsome variegated rufous and black, with innumerable lilac, white, and rufous scattered specks.

“On the 25th it spun a leaf loosely across itself, on a bush above ground, and turned into pupa.

“On October 8th the perfect insect (*O. fullonica*) emerged.”

This insect has also been reared at Canara by Mr. S. N. Ward, from whose MS. is the following extract:—“Larva with sixteen feet, but the first pair of ventrals almost obsolete and retractile. Body cylindrical, smooth, and velvety to the touch, but with scattered minute hairs over all the body; 11th segment much thickened at the extremity, falling off abruptly behind, and surmounted by a red currant-like spot. The colour of the larva changes considerably, but is always either pinkish or brownish-purple, or a rich yellow-brown, with dark stripe down the back, a double one on top, and near the bottom of sides; another quite at bottom, and another down middle of belly. On 5th and 6th segments are eye-spots, white, with a tinge of rich yellow above, brown below, and surrounded by a black ring; on 9th and 10th segments is a saddle-like white mark. Head moderate-sized, rather oblong and reddish brown. Changes to pupa between growing leaves, which it knits together with a very tough net-like web, and lines it with one much finer and softer; pupa fastened by the tail, which is furnished with a treble forked bristle in middle with hooks turned outwards, and small bristle on each side hooked inward. Pupa conical, front part rather flattened, and upper part of thorax rather sharper than usual, but not carinated; it is engine-turned all over except articulations, which are soft; they are red; but all the rest is fine shining bronze-colour. Feeds on the Hordee suppo. September and October. Changes in twenty-two days.”

## OTHEREIS CAJETA. (Plate XIII. figs. 2, 2a, ♂ ♀.)

*Phalena* Noct. *cajeta*, Cramer, Pap. Exot. i. p. 48, pl. xxx. f. AB, ♂, C, ♀.

*Corycia cajeta*, Hübner, Verz. bek. Schmett. p. 265.

*Ophideres cajeta*, Guenée, Noct. iii. p. 112, ♂ ♀.

*Ophideres multiscripta*, Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1226, ♀.

*Male*. Fore wing dark umber-brown, suffused with greyish fawn-colour externally, greyest at the posterior angle; a few grey strigæ disposed on basal and costal areas, and a basal and subapical cluster of green or cream and dark brown scales; veins alternate pale and black-speckled; an equidistant curved antemedian and a postmedian transverse blackish double line, prominent and pale-centred in some, indistinct in others; a small pale-circled dark orbicular spot, and pale-bordered, dark, elongated, lunular, reniform mark. Hind wing orange-yellow; a black apical marginal band, with row of yellow ciliary spots, and a short, black, curved, discal band. Thorax, head, palpi, and legs above brown, legs with white spots.

*Female*. Fore wing brownish fawn-colour, numerously covered with black, pale-grey-bordered, speckled strigæ, which are thickly disposed along the costa, and form irregular fasciæ across the disk; posterior angle broadly greyish, above which is a small dentate whitish spot; reniform mark prominent, angled hindward and black-lined; a minute black, pale-circled, orbicular spot. Hind wing and body as in male.

Expanse 3 to 3½ inches.

*Hab.* S. India (*Malabar and Madras*); Ceylon.

This species has a limited range, the specimens under examination having been either from South India or Ceylon. It is very rare. A single specimen is in the Banksian Cabinet in the British Museum; but there are none in the General Cabinet.

“Larva feeds on the Muttee (*Terminalia*, sp.). Found in September. Makes a slight web within a canopy of living leaves. Pupa plum-colour, with a thick bloom or powder which comes off when touched; front part smooth, top of thorax rounded; the three first segments of thorax very much humped, the succeeding ones decreasing in size like steps; extremity blunt and rounded, with several hooked bristles disposed like a bow-string.” (*S. N. Ward, MS. Notes.*)

## OTHEREIS ANCILLA. (Plate XII. figs. 2, 2a, larva and pupa; Plate XIII. figs. 3, 3a, imago ♂ ♀.)

*Phalena* Noct. *ancilla*, Cramer, Pap. Exot. ii. p. 84, pl. exlix. f. F (1779), ♀.

*Ophideres ancilla*, Guenée, Noct. iii. p. 114, ♀; Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1224, ♀.

*Phalena strigata*, Donovan, Ins. Ind. pl. liv. (1800), ♀.

*Othereis homaëna*, Hübner, Verz. bek. Schmett. p. 264.

*Ophideres bilineosa*, Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1227 (1857), ♂.

*Male.* Fore wing deep ferruginous-brown, with numerous darker brown strigæ; crossed by indistinct greenish-brown fasciæ, which are bordered with glaucous-grey or purple; a subbasal, an antemedian, and a postmedian transverse oblique black line; a brown-bordered reniform mark. Hind wing orange-yellow; marginal black band attenuated hindward, ciliary spots yellow; a short black bilobed discal band. Thorax, head, palpi, fore and middle legs deep ferruginous-brown; abdomen and hind legs orange-yellow.

*Female.* Fore wing dark purple-brown, strigæ darker, transverse fasciæ glaucous-purple, postmedian transverse oblique black line sinuous hindward, a broad longitudinal irregular green band extending below the cell from near base to beyond postmedian line; reniform mark partly green. Other parts as in male.

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

*Hab.* India (*Allahabad, Bombay, Canara, Nilgiris, Darjiling*); Ceylon.

“Larva half-looper; sixteen legs, the first ventral pair being so slightly developed as to be useless for the purpose of progression; cylindrical, the 11th segment raised, and the apex surmounted by a single blunt red tubercle raised above the skin, behind which the body slopes abruptly down towards the anal legs; spiracles oval and black. General colour dusky purplish-brown, dotted with numerous minute cobalt-blue spots regularly arranged, and with large yellow oval patches on the 4th, 5th, and 6th segments, those on the sides of the 5th and 6th being in the shape of ocelli, the iris yellow, pupil azure blue, surrounded by black; the 9th and 10th segments also patched with yellow irregularly more or less. Changes to pupa beneath a canopy of living leaves fastened firmly together and thinly lined with a bed of silk; pupa fastened by the tail; of an orange-colour, beautifully burnished and rough like shagreen; the lower part of the thorax is much compressed, in fact quite sharp. Found during June, July, and August and sparingly in October and November below the Ghats, and in July and August above the Ghats.” (*S. N. Ward, MS. Notes.*)

Has been reared by Dr. Thwaites, in Ceylon, from larva feeding on *Menispermum*; Mr. S. N. Ward reared the larva, in Canara, upon *Cocculus villosus*.

#### OTHEREIS SMARAGDIPICTA.

*Ophideres smaragdipicta*, Walker, Cat. Lep. Hct. Brit. Mus. xiii. p. 1229 (1857), ♀.

*Female.* Fore wing deep ferruginous-brown, with a purplish tinge, varied with black strigæ, which are darkest and thickly confluent on the costa and disk; an irregular-shaped longitudinal bright green band extending from the base below the cell, its broad basal centre being brown; some green strigæ along the costa, and a thick cluster below the apex and along exterior border. Hind wing orange-yellow, marginal black band broad, extending paler along the costa and suffusing the base; a short black bilobed

discal band. Thorax, head, palpi, fore legs in front, and tarsi beneath dark ferruginous-brown, thorax grey-speckled; abdomen above orange-yellow, beneath blackish.

Expanse 3 inches.

*Hab.* Borneo. In coll. British Museum.

#### KHADIRA, n. gen.

Differs from *Othreis* in the fore wing having a decided falcate apex, the hind margin with shorter and more deeply excavated space between the angles; the hind wing also shorter; the palpi having the third joint slender and not tufted at the apex, the second joint also being more slender; fore tibiæ less tufted, and tarsi more spinous.

#### KHADIRA AURANTIA. (Plate XIII. fig. 4.)

*Ophideres aurantia*, Moore, Proc. Zool. Soc. 1877, p. 607.

*Male.* Fore wing dark ochrey-red, with numerous short transverse grey strigæ, veins alternate grey- and black-speckled; a narrow black oblique band from apex to middle of excavation on hind margin; the oblique band, two inner and two outer transverse dusky fasciæ bordered inwardly with purple-grey: hind wing pale orange-yellow, with a black, short, curved, narrow submarginal band, and broader, short, constricted discal band. Thorax, head, palpi, fore legs in front, and antennæ ochrey-red; abdomen pale orange-yellow. Underside orange-yellow; fore wing with a dusky patch at the apex, and two blackish short curved oblique discal streaks above posterior angle; hind wing with a short black discal spot and an indistinct dusky outer fascia.

Expanse 4 inches.

*Hab.* South Andamans. In coll. British Museum.

#### ADRIS, n. gen.

Fore wing: costa arched beyond the middle, convex at the end, the apex being produced into a lengthened point; exterior margin very oblique, convex, the angle very acute; posterior margin very short in the male, lobe much produced, excavation beyond short. Hind wing prolonged anteriorly, the exterior margin slightly concave below the apex; veins similar to those in *Othreis*. Palpi larger and stouter than in the other genus, more laxly clothed, the third joint with a large, flattened, dense tuft above. Fore tibiæ in male more densely clothed with longer lateral hairs.

Type *A. tyrannus*.

#### ADRIS TYRANNUS. (Plate XIII. fig. 5, ♂.)

*Ophideres tyrannus*, Guenée, Noct. iii. p. 110 (1852); Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1224.

*Male.* Fore wing dark ochreous-brown, with indistinct darker transverse sinuous fasciæ bordered with chalybeous purple; sparsely covered with dark red-brown delicate

transverse strigæ; veins black-speckled; a narrow blackish antemedian line and an oblique postmedian line from the apex, each with paler inner border, the latter also bordered externally at the apical end with green speckles; a small black orbicular spot, and distinct green-speckled reniform mark; a small black subbasal spot and cluster of green speckles. Hind wing ochreous-yellow, the base tinged with brown; a narrow curved black submarginal band (entirely separated from the outer margin), and a short broader bilobed discal band. Thorax, head, palpi, and legs above dark ochreous-brown, abdomen ochreous-yellow.

*Female.* Fore wing ochreous-green, numerous covered with red-brown delicate strigæ, transverse lines red-brown; some greyish-speckled spots towards the apex and on the disk, and a similarly coloured marginal patch from posterior angle. Hind wing and body as in male.

Expanse 4 inches.

*Hab.* India (*Simla, Darjiling, Bombay*); China (*Shanghai*); Japan.

“Taken in forests at Simla; disturbed from the thickets in broad daylight it dashes off very suddenly and swiftly with a blind headlong flight, like a frightened owl.” (*Major A. M. Lang, MS. Notes.*)

*ADRIS RUTILUS*, n. sp.

*Male.* Fore wing ferruginous, crossed by darker wavy greyish-bordered fasciæ; an indistinct antemedian transverse line and a prominent postmedian oblique black line; a cluster of green speckles near the base, another on reniform mark, and a few along outer border of the oblique line. Hind wing orange-yellow, an elongated narrow curved black submarginal band, and a small short black lobate discal spot. Thorax, head, palpi, and fore legs in front ferruginous; abdomen above and beneath, and legs yellow.

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

*Hab.* Ceylon. In coll. Dr. Thwaites and F. Moore.

“Larva feeds on Menispermaceæ.” (*Dr. Thwaites, MS. Note.*)

*PURBIA*, n. gen.

Both sexes with shorter wings; fore wings broad, the exterior margin straight below the apex, oblique, even, lobe of hind margin very broad, more so than in any other of the group, the excavation being also very concave. Palpi similar to those in *A. tyrannus*, but the second joint broad at its apex; fore tibiæ very densely tufted.

## PURBIA DISCREPANS. (Plate XIV. fig. 1, ♂.)

*Ophideres discrepans*, Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1227 (1857), ♂.

*Ophideres archon*, Felder, Reise der Novara, Lep. pl. cxiii. f. 3 (1873-4), ♀.

*Male*. Fore wing pale purplish-brown or fawn-colour, with a few black speckles along the costa and on the veins; crossed by three very indistinct and incomplete narrow brown bands, the outer sinuously recurved and bordered externally by clusters of greenish scales; an indistinct greenish subbasal spot and a green-speckled reniform mark. Hind wing orange-yellow, with broad black apical marginal band, the row of ciliary spots and apical angle being white; a short broad curved black discal band. Thorax, head, palpi, and legs purplish brown; abdomen orange-yellow.

*Female*. Differs in having a narrow white reniform mark, and two short linear white spots on middle of the disk.

Expanse ♂ to  $3\frac{3}{4}$  inches.

*Hab.* India (*Malabar*); Siam; Singapore; Java.

## MÆNAS, Hübner.

*Mænas*, Hübner, Verz. bek. Schmett. p. 264 (1816).

*Ophideres* (part), Guenée, Walker.

Fore wing elongated, trigonal; costa slightly arched towards the end, apex acute exterior margin oblique, straight; posterior margin long, with a tufted angle near base; slightly curved to the end. Palpi short, compactly clothed with short scales; apical joint small, very short, and conical. Larva similar in form to that of *Othreis*.

MÆNAS SALAMINIA. (Plate XII. figs. 3, 3 a, 3 b, larva and pupa; Plate XIV. fig. 2, imago.)

*Phalena Noct. salamina*, Cramer, Pap. Exot. ii. p. 117, pl. clxiv. f. A (1779); Clerck, Icones, pl. xlvi. f. 5, 6.

*Noctua salamina*, Fabr. Ent. Syst. iii. 2, p. 17 (1793).

*Menas salamina*, Hübner, Verz. bek. Schmett. p. 264.

*Ophideres salamina*, Guenée, Noct. iii. p. 115; Walker, Catal. Lep. Het. B. M. xiii. p. 1225.

*Male and Female*. Fore wing dark green with golden reflections; a broad purplish-grey costal band extending from near base of hind margin to the apex, and a narrow similar band on exterior border, the costal band with numerous short green and ochreous transverse strigæ, which are confluent along the costal border, the exterior band with paler purplish-green inner border; a distinct red line along the discal portion of the lower median vein. Hind wing orange-yellow, with a black apical marginal band and yellow ciliary spots, and a short black bilobed discal band. Thorax, head, palpi, and front of fore legs ochreous-green; abdomen and legs orange-yellow.

Expanse ♂ to  $3\frac{1}{2}$  inches.

*Hab.* India (*Kussowlie, Darjiling, Khasias, Caleutta, Nilgiris, Madras*); Ceylon; Singapore; Java; Formosa; Shanghai; Japan.

A widely distributed species, which has also been taken at sea in north of Bay of Bengal in October. A specimen from Australia is in the British-Museum collection.

Larva reared on *Menispermum glabrum* at Allipore, by Mr. A. Grote. In Ceylon the larva is also found on the same plant. Dr. Horsfield reared it in Java during February and March from larva feeding on a species of *Cissus*.

#### VANDANA, n. gen.

Fore wing less angular in form than in *Manas salamina*, the costal border more arched, and the hind wing with a greater width of lobe at the base; second joint of the palpi longer, and the third joint very long and slender.

#### VANDANA DIVIDENS.

*Ophideres dividens*, Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1228 (1857), ♀.

*Female.* Fore wing pale fawn-colour, greenish and darkest along the costa, and with a slight rosy tinge, base tinged with pale olive-green; crossed by a dark sap-green oblique band, which is attenuated at the apex and dilating in width to posterior margin, the inner border of the band even, and the outer border irregular hindward; reniform mark black, elongated longitudinally, angled at the lower end of the cell, and divided by a pale line along the discocellular vein; a pale sap-green narrow fascia outside the oblique band. Hind wing orange-yellow, marginal black band broad, with small yellow cilia spots; short black bilobed discal band also broad. Thorax, head, palpi, legs, and body beneath brownish fawn-colour; abdomen above orange-yellow. Underside: fore wing brown, with an oblique medial band, and base of hind margin only yellow; hind wing with the marginal brown band extending broadly along the costa to the base.

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

*Hab.* Java. In Coll. British Museum.

#### RHYTIA, Hübner.

*Rhytia*, Hübner, Verz. bek. Schmett. p. 264 (1816).

*Ophideres* (part), Guenée, Walker.

Fore wing in male and female with the exterior margin even, and angled outward in the middle; palpi very long, the third joint with broad clavate tufted tip. Larva similar in form to that of *Othreis*, but with slight dorsal protuberance on the 5th, 6th, 7th and 11th segments.

*RHYTIA COCALE.* (Plate XII. figs. 5, 5*a*, larva and pupa; Plate XIV. figs. 5, 5*a*, imago ♂ ♀.)

*Phal. Noct. cocalus*, Cramer, Pap. Exot. ii. p. 59, pl. cxxxiv. f. B (1779), ♂.

*Rhytia cocale*, Hübner, Verz. bek. Schmett. p. 264.

*Ophideres cocalus*, Guenée, Noct. iii. p. 115, ♂.

*Noctua maculata*, Weber, Observat. Entom. p. 111 (1801), ♀.

*Ophideres plana*, Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1226, ♂.

*Male.* Fore wing ochreous green, numerously covered with slender black transverse strigæ, those across the disk and on exterior margin grey-bordered; crossed by a curved antemedial and an oblique postmedial black line, both with chalybeous-grey inner border; reniform mark indistinct: hind wing orange-yellow, with broad black marginal band and small white ciliary spots and narrow streak at apex. Thorax, head, palpi, and legs in front ochreous-green, palpi with a lateral linear grey streak; abdomen and legs above orange-yellow, beneath greyish.

*Female.* Darker ochreous green, with a cluster of creamy-white spots on the discocellular area, another series below the cell, a large patch at the posterior angle, and a slender linear broken spot below the apex: hind wing and body as in male.

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

*Hab.* India (*Coromandel, Silhet*); Java.

This species has a similar pattern of markings to *R. hypermnestra*, but may easily be distinguished from it by the absence in the hind wing, in both sexes, of the two black discal spots, and in the black marginal band extending to the anal angle, the inner border of which is much less irregularly sinuous, and the row of ciliary spots also are much smaller; the fore wing in the male has the two transverse lines more curved, and the clusters of spots in the female are more confluent. It has been reared in Java by Dr. Horsfield from larva feeding on a species of *Epibatherium*.

*RHYTIA HYPERMNESTRA.* (Plate XII. fig. 6, larva; Plate XIV. figs. 4, 4*a*, imago ♂ ♀.)

*Phalena Noct. hypermnestra*, Cramer, Pap. Exot. iv. pl. cccxxiii. f. A, B (1782).

*Rhytia hypermnestra*, Hübner, Verz. bek. Schmett. p. 264.

*Ophideres hypermnestra*, Guenée, Noct. iii. p. 116; Walker, Catal. Het. Brit. Mus. xiii. p. 1225.

*Male.* Fore wing ochreous-green, numerously covered with slender blackish transverse strigæ; crossed by a distinct antemedial and an oblique postmedial brown line; an indistinct dusky brown suffused reniform mark; a curved grey streak below the apex, and grey strigæ above posterior angle; transverse lines with chalybeous-grey inner border. Hind wing orange-yellow, with broad marginal black band, white ciliary row of spots and apical angle; and two small black discal spots, the upper one oval, the lower recurved. Thorax, head, palpi, and fore legs in front ochreous-green, palpi

with a lateral linear grey streak; abdomen and legs above orange-yellow, beneath grey.

*Female.* Fore wing darker green, with a series of creamy-white spots on the discocellular area, another series below the cell, a large patch at the posterior angle, and two small slender spots below the apex, all partially crossed by slender brown strigæ.

Expanse 3 to 3½ inches.

*Hab.* India (*Bombay, Canara, Nilgiris, Darjiling, Khasia*); Burmah (*Moulmein*); Andamans; Ceylon.

“ Larva semilooper, cylindrical, elongated, slightly humped on the 4th, 5th, 6th, and 11th segments. Legs fourteen, with a rudimentary pair on 6th segment. Colour dusky purplish-brown, blotched with very dark brown, and spotted with minute dots of cobalt-blue; on each side of 5th and 6th segments is a large ocellus, the iris bright yellow in front and vermilion behind, pupil purplish-brown, with a crescent of cobalt-blue, and with a centre which is considerably darker than the rest; besides these the body is extensively marked with black and yellow patches of different shapes. Changes occupy twenty-six days.” (*S. N. Ward, M.S. Notes, Canara.*)

#### ARGADESA, n. gen.

*Ophideres* (part), Guenée, Walker.

Fore wing in male and female with the exterior margin oblique and scalloped throughout its length; palpi shorter, and the third joint slender. Larva similar in form to that of *Othreis*.

ARGADESA MATERNA. (Plate XII. figs. 4, 4 *a, b, c, d*, larva and pupa; Plate XIV. fig. 3, 3 *a*, imago, ♂ ♀.)

*Phalena Noct. materna*, Linnaeus, Syst. Nat. ii. p. 840; Drury, Ins. ii. p. 24, pl. xiii. f. 4; Cramer, Pap. Exot. ii. pl. 174. f. B; iii. pl. 267. f. E.

*Noctua materna*, Fabr. Spec. Ins. ii. p. 212; Mant. Ins. ii. p. 137; Ent. Syst. iii. 2, p. 16.

*Rhytia materna*, Hübner, Verz. bek. Schmett. p. 264.

*Triphæna materna*, Westwood, Nat. Libr. xxxvii. Exotic Moths, p. 201, pl. xxv. fig. 2.

*Ophideres materna*, Boisduval, Faun. Ent. Madag. Bourbon. et Maur. Lép. p. 100; Guenée, Noct. iii. p. 113; Walker, Catal. Lep. Het. Brit. Mus. xiii. p. 1221.

*Noctua hybrida*, Fabricius, Syst. Ent. p. 593.

*Male.* Fore wing greenish-grey, covered with greenish-brown or purple-brown transverse confluent strigæ; a short curved dark brown antemedian costal line and a distinct oblique postmedian line; between the lines are three purple-glossed, plumbeous, longitudinal streaks, the upper short and near the costa, the next from lower angle of the cell, the third below the cell; reniform mark trilobed, purple-black; a narrow grey streak curving below the apex and spreading irregularly to the posterior angle. Hind

wing orange-yellow, with a narrow black marginal band and prominent white ciliary spots; a single small black discal spot. Thorax greenish grey, head and palpi above brown, palpi black-tipped; fore legs brownish above; abdomen and legs orange-yellow.

*Female* with darker and more prominent strigæ, the three longitudinal discal streaks much larger, broader, contiguous, purple-glossed, and narrowly divided and bordered with white; hind wing and body as in male.

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

*Hab.* India (*Kussowlie, Lucknow, Allahabad, Kutch, Kattywar, Bombay, Canara, Madras, Calcutta, Balasore*); Ceylon; Java.

This insect has also been taken in the island of Madagascar. A specimen from Abyssinia, collected by Mr. Jesse, and another from Gambia are in the collection of the British Museum. It has also been taken at sea in the north of the Bay of Bengal.

“Larva, after last change,  $2\frac{1}{2}$  inches long; half Geometrous, long, cylindrical, stout, with the penultimate segment much elevated, and the anterior ones strong; ground-colour red-brown, darker at the hinder and foremost segments, more of an olive-brown in the middle; dorsal line well defined and bistre-colour, on either side of which a similar line, bearing on 5th and 6th segments a splendid ‘ocellus,’ the upper part of which is primrose, with the lower half purplish brown, with a lilac pupil; sides and middle of back variegated irregularly with lilac and yellow spots and yellow fascia; on penultimate segment a coral-coloured protuberance, spotted with lilac here and there, with on either side a broad yellow fascia; abdomen lighter than back, with a dark ventral line; legs all red-brown, tipped with black; anal legs very long; head dark coral-colour; stigmata violet.

“In state of repose it curls the head and 4th and 5th segments right under the body, forming a circle.

“Turned into pupa 28th Sept., between the leaves. Imago came out 7th October. Period on the wing Sept., Oct.; Lucknow.” (*Capt. H. L. De la Chanette, MS. note, 1860.*)

Mr. S. N. Ward, in his MS. notes on the Lepidoptera of Canara, says the “larva feeds on the Amoordah Beeloo, changing to pupa among the leaves, which are fastened together with coarse yellow threads, the changes occupying fifteen days. Found from September to December.”

Larva reared on *Menispermum glabrum* at Allipore, by Mr. A. Grote. Sir W. Elliot reared it on *Cocculus cordifolius*; and in Java Dr. Horsfield reared the larva on both *Leschenaultia* and *Epibatherium*.

## DESCRIPTION OF THE PLATES.

## PLATE XII.

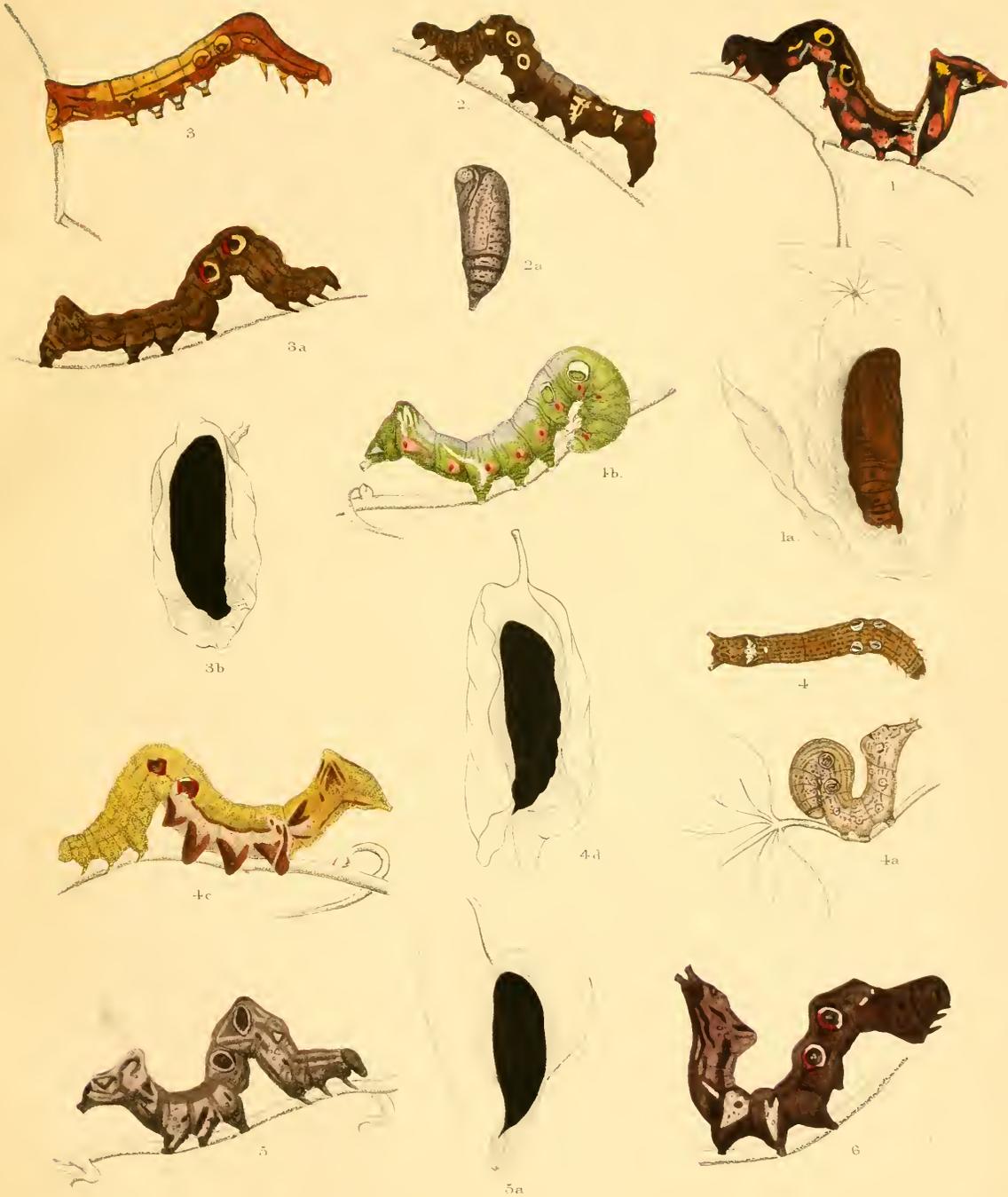
- Fig. 1. *Othreis fullonica*, larva (Allipore, *A. Grote*), p. 64.  
 Fig. 1a. „ „ pupa (Java, *Horsfield*), p. 64.  
 Fig. 2, 2a. *Othreis ancilla*, larva and pupa (Canara, *Ward*), p. 67.  
 Fig. 3. *Manas salamina*, larva (Allipore, *A. Grote*), p. 71.  
 Fig. 3a, b. „ „ larva and pupa (Java, *Horsfield*), p. 71.  
 Fig. 4, 4a. *Argadesa materna*, larva (Vizagapatam, *Elliot*), p. 74.  
 Fig. 4, b, c, d. „ „ larva and pupa (Allipore, *A. Grote*), p. 74.  
 Fig. 5, 5a. *Rhytia cocale*, larva and pupa (Java, *Horsfield*), p. 73.  
 Fig. 6. „ *hypermnestra*, larva (Canara, *Ward*), p. 73.

## PLATE XIII.

- Fig. 1. *Othreis fullonica* ♂; fig. 1a, ♀: p. 64.      Fig. 4. *Khadira aurantia*, p. 69.  
 Fig. 2. „ *cajeta* ♂; fig. 2a, ♀: p. 67.      Fig. 5. *Adris tyrannus* ♂, p. 69.  
 Fig. 3. „ *ancilla* ♂ fig. 3a, ♀: p. 67.

## PLATE XIV.

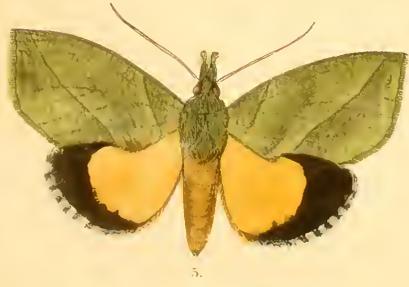
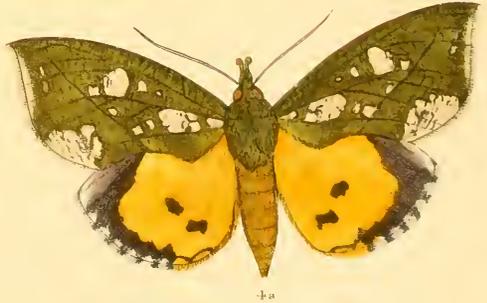
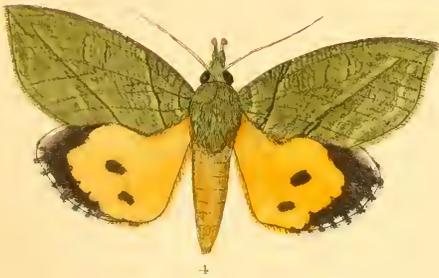
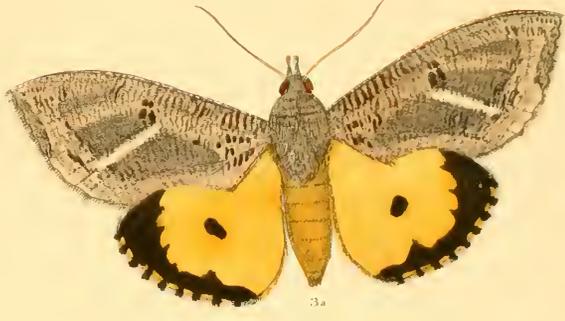
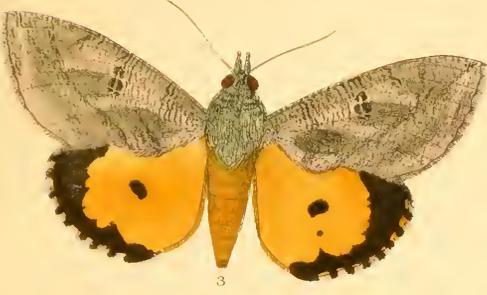
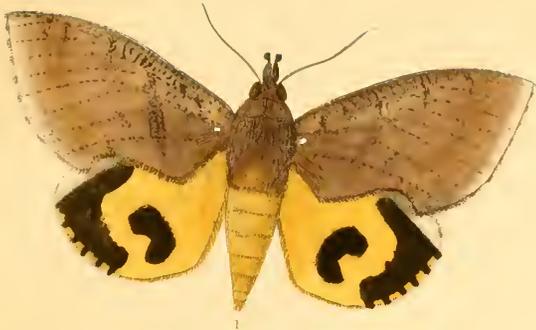
- Fig. 1. *Purbia discrepans* ♂, p. 71.      Fig. 4. *Rhytia hypermnestra* ♂; fig. 4a, ♀: p. 73.  
 Fig. 2. *Manas salamina*, p. 71.      Fig. 5. „ *cocale* ♂; fig. 5a, ♀: p. 73.  
 Fig. 3. *Argadesa materna* ♂; fig. 3a, ♀: p. 74.

















qQL Moore, Frederic, 1830-1907.  
542 Scientific results of the  
M6 second Yarkand mission :  
Ent. based upon the collections  
and notes of the late Ferdi-  
nand Stoliczka: Lepidoptera.

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