

7. *MELANERPES ALBOLARVATUS*. — *Leuconerpes albolarvatus*, Cassin, Pr. Ac. Sc. Phil. 1850, p. 106 ; Journ. Ac. Phil. n. s. iii. p. 257. pl. 22, ♂ et ♀.

This is not uncommon in the Trinity Valley, seeking its food on the tall pines. The male is easily distinguished from the female by the red band of feathers at the base of the cranium.

(Better placed in the genus *Melanerpes* than with *Leuconerpes*.—P. L. S.)

8. *PICUS HARRISI* (Aud.).

Shot near Shasta, base of the Sierra Nevada.

9. *PICUS NUTTALLI*, Gambel.

Taken on the mountains near Shasta in September.

10. *TURDUS NÆVIUS* (Gm.), Bp. Consp. p. 271.

This pretty species of Thrush is very rare in California, as I have only seen two specimens. These I observed in the coast range of mountains west of Santa Clara. It inhabits the evergreen oak-groves, *Quercus densifolia*. Taken in October (female).

11. *CINCLUS AMERICANUS*, Sw.

I have only seen this remarkable bird in the head waters of Trinity and Scott's Rivers at California. It is constantly seeking its food amongst the boulder rocks in the rivers, or on the shallows amongst pebbles ; sometimes wading, diving or swimming, and at other times flying from rock to rock. I have often watched them, and always felt a sort of amusement at their restless and singular movements.

San Francisco, Nov. 18th, 1857.

2. MONOGRAPH OF THE ASIATIC SPECIES OF NEPTIS AND
ATHYMA, TWO GENERA OF DIURNAL LEPIDOPTERA BELONG-
ING TO THE FAMILY NYMPHALIDÆ. BY FREDERIC MOORE,
ASSISTANT, MUSEUM EAST INDIA COMPANY.

(Annulosa, Pl. XLIX.—LI.)

The following monograph contains descriptions of all the species of the genera *Neptis* and *Athyma* that I have been enabled to bring together from the various collections in this country.

Genus NEPTIS, Fabricius.

Neptis, Fabricius, Syst. Gloss. (Illiger's Mag. vi. p. 282, 1808) ; Horsfield ; Westwood.

Acca, p., Hübner, Verz. bek. Schmett (1816).

Limenitis, p., Boisduval, Ind. Meth. Eur. Lep. p. 16 (1840) ; E. Doubleday.

1. NEPTIS HORDONIA.

Papilio Hordonia, Stoll, Suppl. Cramer, Pap. Exot. i. t. 33. f. 4, 4. D. (1791).

Nymphalis Hordonia, Godart, Enc. Méth. ix. p. 429.

Limenitis Hordonia, E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 93.

Neptis Hordonia, Westwood in Doubleday & Hewitson's Diurnal Lep. p. 271. n. 3; Moore, Catal. Lep. Mus. E. I. C. i. p. 164.

Hab. Silhet; Darjeeling; N. India; Ceylon; Java. In most collections.

Remark.—*Neptis Hordonia* may be known by the mottled markings of the under-side.

2. NEPTIS PATA, Moore. (Pl. XLIX. f. 1.)

Neptis Pata, n. sp.—Upper-side brown-black; markings ferruginous, these being disposed as in *Neptis Hordonia*. May be distinguished from that species by the under-side being black, and without any mottled markings.

Hab. Manilla. In the collection of W. W. Saunders, Esq.

3. NEPTIS TIGA, Moore.

Papilio Heliodore, Fabricius, Ent. Syst. iii. pt. 1. p. 130 (1793); Jones, Icon. iv. t. 76. f. 2 (nec Cramer, 1782).

Nymphalis Heliodore, Godart, Enc. Méth. ix. p. 429.

Limenitis Heliodore, E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 93.

Neptis Heliodore, Westwood in Doubleday & Hewitson's Diurnal Lep. p. 271. n. 4; Moore, Catal. Lep. Mus. E. I. C. p. 164.

Hab. Java; Borneo. In Museum East India Company; British Museum, W. W. Saunders, Esq.

Remark.—*Neptis Tiga* may be distinguished from the two preceding by the well-defined markings of the under-side.

4. NEPTIS ANTARA, Moore. (Pl. XLIX. f. 2.)

Neptis Antara, n. sp. Male.—Upper-side dusky-brown; fore-wing with discoidal streaks, curved interrupted band from costal margin near the apex to middle of posterior margin, and narrow submarginal wavy line, deep ferruginous; indistinct marginal and narrow border to submarginal line, blackish; hind-wing with straight inner and curved narrower outer band deep ferruginous; indistinct marginal and submarginal line, and inward borders to the two bands blackish. Under-side very pale, markings as above, but all having black borders. Expanse nearly 2 inches.

Hab. Celebes. In British Museum Collection.

5. NEPTIS MIAH, Moore.

Neptis Miah, Moore, Catal. Lep. Mus. E. I. C. i. p. 164. pl. a. f. 1 (1857).

Neptis Miah.—Upper-side brown-black ; fore-wing with a longitudinal streak from base of wing, an oblique transverse short apical fascia, which nearly meets a reversely oblique fascia on posterior margin, rufous ; hind-wing with a nearly straight broad inner band and a narrow submarginal band rufous. Under-side dark ferruginous ; fore-wing with the longitudinal and oblique marks pinky-white ; two narrow submarginal lines purple ; hind-wing with inner band pinky-white ; two submarginal and a less distinct middle line purple ; costal margin at the base whitish. Expanse $2\frac{2}{3}$ inches.

Hab. Darjeeling ; N. India. In Museum East India Company, and W. W. Saunders, Esq.

Remark.—Allied to the two preceding species, but may be distinguished by the colour and markings of the under-side.

6. NEPTIS MANASA, Moore.

Neptis Manasa, Moore, Catal. Lep. Mus. E. I. C. i. p. 165, pl. 4 a. f. 2 (1857).

Neptis Manasa. Male.—Upper-side dull dusky-brown ; markings white, tinged with very pale ferruginous ; fore-wing with the discoidal streak long, and continued in a curve to near the posterior angle ; an apical oblique streak ; two small spots on costal margin, and one below the margin ; a spot on middle of posterior margin ; a marginal row of small indistinct spots ; hind-wing with broad inner and narrower outer band, both extending across the abdominal margin ; an indistinct marginal line and line between the two bands ; narrow cilia white. Under-side pale ochreous, with indistinctly-defined white markings ; the discoidal streak is continued uninterrupted to the middle of the posterior margin, the space within being blackish ; on the hind margin are some small white markings between the inner band and costal vein. Expanse $2\frac{1}{2}$ inches.

Hab. N. India. In Museum East India Company.

Remark.—*Neptis Manasa* may be distinguished above by the discoidal streak being nearly confluent with the spot on the middle of the posterior margin, it being quite confluent on the under-side.

7. NEPTIS ANANTA, Moore.

Neptis Ananta, Moore, Catal. Lep. Mus. E. I. C. i. p. 166. pl. 4 a. f. 3 (1857).

Neptis Ananta. Male.—Upper-side brownish-black ; markings ferruginous ; fore-wing with discoidal streak straight ; a curved twice-interrupted band from anterior margin near apex to middle of posterior margin ; a pale marginal line ; hind-wing with rather broad inner and narrow outer band, both extending across the abdominal margin ; also a pale marginal line and line between the bands. Under-side very deep ferruginous ; fore-wing with discoidal streak, spots near apex and from posterior margin, ferruginous-white ; posterior margin broadly patched with black ; a marginal and submarginal bluish-ashy line ; hind-wing with inner band white, outer band

grey and indistinct; a marginal line and zigzag line between the two bands bluish-ashy. Expanse $2\frac{1}{2}$ inches.

Hab. Simla; N.W. India. In Museum East India Company, and W. C. Hewitson, Esq.

Remark.—This species may be known from *N. Manasa* by its ferruginous markings and straight discoidal streak.

8. NEPTIS NARAYANA, Moore. (Pl. XLIX. f. 3.)

Neptis Narayana, n. sp. Male.—Upper-side black; markings white; fore-wing with the discoidal streak narrow; along costal margin towards the apex some narrow spots, with two large spots descending obliquely across the apex; a quadrate spot in middle of disc, and another on posterior margin; two submarginal narrow spots parallel with the quadrate discal spot; hind-wing with straight inner and narrower nearly straight outer band. Under-side glossy ferruginous, darkest about the middle of the wings, very pale at the base of costal margin, and blackish along posterior margin of the fore-wing; fore-wing with markings as above; hind-wing with submarginal line, zigzag line between the two bands, greyish-white. Expanse $2\frac{5}{8}$ inches.

Hab. N. India. In British Museum Collection.

Remark.—Allied to *Neptis Zaida*, but may be known from that and other allied species by the markings on the upper-side being *pure white*.

9. NEPTIS RADHA, Moore.

Neptis Radha, Moore, Catal. Lep. Mus. E. I. C. i. p. 166. pl. 4 a. f. 4 (1857).

Neptis Radha. Male.—Upper-side brownish-black; markings ferruginous; fore-wing with a long discoidal streak, narrow at base, and extending to a short distance between the third and second median veinlets; two small spots on costal margin, and two larger oblique spots near the apex; a large spot on disc, and an elongate spot to middle of posterior margin; marginal line pale; hind-wing with rather broad inner and narrower outer band, both extending across the abdominal margin; a marginal line and line between the two bands pale brown. Under-side ferruginous-brown; markings as above, but indistinct, owing to the surface being mottled over with ashy-blue. Expanse $2\frac{7}{8}$ inches.

Hab. Darjeeling; Bootan; N. India. In Museum East India Company.

10. NEPTIS ZAIDA.

♂ *Limenitis Zaida*, E. Doubleday, MS.

Neptis Zaida, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 272. n. 9. t. 35. f. 3 (1850).

Hab. Simla; N.W. India. In Collection British Museum, and W. C. Hewitson, Esq.

Remark.—*Neptis Zaida* (the male *only* of which I am acquainted with) has the wings more rounded than in the other allied species, and on the hind-wing the inner band is very broad, the outer band narrow and *much curved*.

11. NEPTIS AMBA, Moore. (Pl. XLIX. f. 4.)

Neptis Amba, n. sp. Male.—Upper-side smoky-brown; markings white; fore-wing with long discoidal streak indented at the extremity of the cell; two oblique spots near the apex, and four reversely oblique spots to middle of posterior margin; an indistinct marginal and submarginal black line; hind-wing with rather broad inner band and narrow brownish-white outer band; marginal and submarginal line darker. Under-side dark ferruginous; markings as above; but the marginal and submarginal lines, base of costal margin, and streak near base of hind-wing also white.

Hab. Nepal (*General Hardwicke*). In Collection British Museum.

12. NEPTIS VIKASI, Horsfield.

Neptis Vikasi, Horsfield, Catalogue of Lep. Mus. E. I. C. (1829) t. 5. f. 2, 2a; Moore, Catal. Lep. Mus. E. I. C. i. p. 165.

Limenitis Vikasi, E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 94.

Athyma Vikasi, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 10.

Hab. Java; Darjeeling; N. India. In most collections.

13. NEPTIS COLUMELLA. (Pl. XLIX. f. 5.)

Papilio Columella, Cramer, Pap. Exot. iv. t. 296. f. A, B (1782).

Limenitis Columella, E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 95.

Neptis Columella, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 272. n. 7; Moore, Catal. Lep. Mus. E. I. C. i. p. 166.

Acca Columena, Hübner, Verz. bek. Schmett. p. 44.

Hab. Darjeeling, N. India; China; Ceylon; and specimens from the Island of Lombok, which I have examined, are also identical. In Collection British Museum, East India Company, W.W. Saunders, Esq., and W. C. Hewitson, Esq.

14. NEPTIS JUMBA, Moore.

Neptis Jumba, Moore, Catal. Lep. Mus. E. I. C. i. p. 167. pl. 4a. f. 5 (1857).

Neptis Jumba. Upper-side smoky-black; fore-wing with a narrow longitudinal streak, and a parallel triangular spot, white; a transverse curved row of interrupted white spots, from apical third of costal margin to near middle of posterior margin, composed of two very narrow longitudinal spots on the costal margin, beneath which are two large spots, then a very small streak, then two large spots, and lastly two narrower spots terminating on posterior margin; between this band of spots and exterior margin are two rows of more

or less defined lunular-shaped white spots, these being bounded exteriorly by a row of deep black; hind-wing with a broad white band from costal to abdominal margin, being intersected by the veins; near outer margin a row of ill-defined white lunulated marks, bounded exteriorly by deep black, then a submarginal row of black lines; between the white band and row of lunated white marks is a broad band of black. Under-side ferruginous; fore-wing with markings as above, but the four rows of markings along exterior margin white, and suffused at the apex and near the middle with ferruginous; hind-wing with the broad white band; abdominal margin, base of costal margin, and broadly across parallel with the band, suffused with white; a marginal and two submarginal rows of whitish marks, between which and the broad band is a series of fine dark ferruginous spots from abdominal margin, and terminating in white marks on costal margin. Body above black, beneath white. Sexes alike. Expanse $2\frac{2}{8}$ to $2\frac{1}{2}$ inches.

Hab. Darjeeling, N. India; Ceylon. In Museum East India Company, British Museum, and W. C. Hewitson, Esq.

15. NEPTIS HELIODORA.

Papilio Heliodora, Cramer, Pap. Exot. iii. t. 212. f. E, F (1782) (nec Fabr. 1793).

Acca Heliodora, Hübner, Verz. bek. Schmett. f. 44.

Nymphalis Helicopis, Godart, Enc. Méth. ix. p. 431 (1819).

Athyma Helicopis, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 3.

Hab. Moluccas; Amboyna (*Cramer*).

Remark.—I have not as yet seen any example of this species. It is allied to the following.

16. NEPTIS SHEPHERDI. (Pl. L. f. 1.)

Limenitis Shepherdii, Newman, MS.—Upper-side brownish-black; fore-wing, with discoidal streak in two portions, the first being indistinct, the second a triangular spot; oblique spots from costal margin near apex, two larger spots on middle of the disc, and an elongated spot and a small dot above it on posterior margin, a submarginal row of spots and second outer very indistinct row, white; hind-wing with broad white transverse band from near middle of anterior to middle of abdominal margin; marginal lines pale brown. Under-side ferruginous-brown, suffused in parts with paler brown; fore-wing with base of costal margin yellow; markings as above, but the first portion of discoidal streak more distinct, the discal spots somewhat smaller, and between marginal row of spots and outer margin are two rows of narrow white linear marks; hind-wing with transverse white band; three and an indistinct fourth row of narrow marginal lines; base of anterior margin and below costal vein whitish. Expanse $2\frac{3}{4}$ inches.

Hab. New South Wales, Australia. In Collection British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

17. NEPTIS SOMA, Moore. (Pl. XLIX. f. 6.)

Neptis Soma, n. sp.—Allied to, but differs from, *Neptis Nandina*, on the upper-side, in having the discoidal streak narrower, and the curved row of seven spots are much smaller, being only half their size, and are wider apart; the submarginal row of spots is also smaller; the bands on hind-wing are also narrower; on the under-side the colour is of a deep maroon, the markings as in upper-side, but those on the hind-wing less straight. Sexes alike. Expanse from $2\frac{3}{8}$ to $2\frac{5}{8}$ inches.

Hab. Silhet, N. India. In Collection British Museum, and W. C. Hewitson, Esq.

18. NEPTIS NANDINA, Moore.

Neptis Nandina, Moore, Catal. Lep. Mus. E. I. C. i. p. 168. pl. 4 a. f. 7 (1857).

Neptis Nandina.—Upper-side black; markings white; fore-wing with discoidal streak in two entire portions; the curved row of seven spots broadly interrupted; and a submarginal row of small less-defined spots; hind-wing with inner band, and narrow outer row of less-defined square spots; indistinct marginal line and line between the bands brown. Under-side deep chocolate-brown, with markings as above, but more defined and of a brighter colour; those of the hind-wing rather straight, except the marginal and submarginal lines, which are gently curved. Sexes alike. Expanse $2\frac{1}{4}$ to $2\frac{5}{8}$ inches.

Hab. Darjeeling, Assam, N. India; Java. In Museum East India Company, British Museum, and W. C. Hewitson, Esq.

Remark.—This species may be known from *Neptis Aceris* by the deep chocolate colour of the under-side, by the anterior margin of hind-wing being evenly arched to beyond the middle, and by all the markings on this wing being nicely and evenly curved, more evenly than is shown in the figure.

19. NEPTIS ACERIS.

Papilio Aceris, Esper, Ausl. Schmett, t. 81. cont. 31. f. 3, 4; t. 82. f. 1 (1785); Fabricius, Mant. Ins. ii. p. 52; *id.* Ent. Syst. iii. pt. 1. p. 245.

Nymphalis Aceris, Godart, Enc. Méth. ix. p. 430.

Acca Aceris, Hübner, Verz. bek. Schmett. p. 44.

Limenitis Aceris, Boisduval, Icon. Hist. t. 18. f. 2; *id.* Ind. Méth. p. 16; E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 95; Kollar in Hügel's Kaschmir, iv. pt. 11. p. 428.

Neptis Aceris, Fabricius, Syst. Gloss. (Illiger's Mag. vi. p. 282); Horsfield, Catal. Lep. Mus. E. I. C. t. 7. f. 9; Westwood in Doubleday and Hewitson's Diurnal Lep. p. 271. n. 5; Moore, Catal. Lep. Mus. E. I. C. i. p. 168.

Papilio Plautilla, Hübner, Europ. Schmett. Pap. f. 99, 100 (1805).

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

Neptis Matuta, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 272. n. 6.

Papilio Leucothoë, Cramer, Pap. Exot. iv. t. 296. f. E, F (nec Linn.); Donovan, Ins. of China, 1st edit. t. 35. f. 3 (nec Linn.).

Limenitis Eurynome, Westwood in 2nd edit. Donovan's Ins. of China, p. 66. t. 35. f. 3.

Athyma Eurynome, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 2.

Hab. Germany; Hungary; South Russia; North-western, North-eastern, Central, and Southern India; Ceylon; China; Madjico Sima; Pinang, Malacca, Java, Borneo, Manilla. In most collections.

Remark.—After carefully examining a number of specimens of this species from all the localities above enumerated, I am enabled to say that I can detect no difference between the alleged species *Aceris*, *Matuta*, and *Eurynome*. Specimens measuring in expanse from $1\frac{1}{2}$ to $2\frac{1}{4}$ inches are obtained from the same locality, and the Chinese specimens are generally larger, some being $2\frac{1}{2}$ inches in expanse; those from the latter locality have been named *Eurynome* by Mr. Westwood, the *type*-specimen of which I have examined.

20. NEPTIS IDA, Moore. (Pl. XLIX. f. 7.)

Neptis Ida, n. sp.—Upper-side dusky brown; fore-wing with discoidal streak, and curved series of white spots as in *Neptis Aceris*; marginal, submarginal and third inner row of small white spots; hind-wing with broad inner band, and narrower outer row of widely separated spots, white; a marginal line of narrow whitish marks; line between the two bands pale brown. Under-side pale ferruginous, markings as above, all white and broader. Expanse $2\frac{1}{2}$ inches.

Hab. Celebes or Mindanao. In the Collection of W. W. Saunders, Esq., and W. C. Hewitson, Esq.

This beautiful species was recently brought home by Madame Ida Pfeiffer.

21. NEPTIS DURYODANA, Moore. (Pl. XLIX. f. 8.)

Neptis Duryodana, n. sp.—Differs from Bornean specimens of *Nep. Aceris*, in being of a much blacker colour on the upper-side, the markings also being much whiter; and in the under-side being brown, where the inner band of the hind-wing does not extend to the inner margin as in that species, and the marginal and submarginal lines are more curved. Expanse $2\frac{1}{8}$ inches.

Hab. Borneo. In collection of British Museum, and W. C. Hewitson, Esq.

22. NEPTIS NATA, Moore.

Neptis Nata, Moore, Catal. Lep. Mus. E. I. C. i. p. 168. pl. 4 a. f. 6 (1857).

Neptis Nata.—Upper-side deep black, markings very white; fore-wing with discoidal streak long, in two portions; curved series of spots small; hind-wing with the bands narrow. Under-side dusky brown; inner band of hind-wing not extended to anterior margin;

a marginal line only between outer band and exterior margin, the submarginal line being obsolete. Sexes alike. Expanse $2\frac{2}{3}$ inches.

Hab. Singapore and Borneo. In Collection East India Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

Genus *ATHYMA*, Westwood.

Athyma, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 272 (1850).

Acca, pt., Hübner, Verz. bek. Schmett.

Biblis, pt., Fabricius, Syst. Gloss.; Horsfield, Catal. Lep. Mus. E. I. C. (1829).

Limenitis, pt., E. Doubleday, List Lep. Brit. Mus.

1. *ATHYMA LEUCOTHOË*.

Papilio Leucothoë, Linnæus, Mus. Lud. Ulr. 292; *id.* Syst. Nat. ed. 12. ii. p. 780; Fabricius, Ent. Syst. iii. pt. 1. p. 129; Sulzer, Hist. Ins. t. 18. f. 2, 3.

Nymphalis Leucothoë, Godart, Enc. Meth. ix. p. 430.

Acca Leucothoë, Hübner, Verz. bek. Schmett. p. 44.

Biblis Leucothoë, Horsfield, Catal. Lep. Mus. E. I. C. t. 8. f. 3.

Limenitis Leucothoë, Westwood in Donovan's Ins. of China, 2nd edit. t. 35. f. 4; Kollar in Hügel's Kaschmir, iv. pt. 11. p. 428; E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 94.

Athyma Leucothoë, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 273; Moore, Catal. Lep. Mus. E. I. C. i. p. 170.

Papilio Eriosine, Cramer, Pap. Exot. iii. t. 203. f. E. F.

Najas hilaris Erosine, Hübner, Samml. Exot. Schmett. Band.

Papilio Polyxena, Donovan, Ins. of China, 1st edit. t. 35. f. 4 (1798).

Hab. N. India; China; Java; Sumatra. In most collections.

Remark.—The specimens of *Athyma Leucothoë* from Java are generally smaller than those from India, and have the central band broader and the portions closer together. Sexes alike.

2. *ATHYMA OPALINA*.

Lymenitis opalina, Kollar in Hügel's Kaschmir, iv. pt. 2. p. 427 (1844).

Athyma opalina, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 5; Moore, Catal. Lep. Mus. E. I. C. i. p. 171. pl. 5 a. f. 2.

Hab. Darjeeling; Masuri (*Kollar* and *Hearsey*). In Collection East India Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

Remark.—This species may be distinguished by the discoidal streak being divided into four portions, as in *Athyma Leucothoë*, and by the deep ferruginous colour of the under-side being suffused

in parts with grey and greyish brown. Expanse $2\frac{3}{8}$ to $2\frac{7}{8}$ inches. Sexes alike.

3. *ATHYMA BAHULA*, Moore. (Pl. L. f. 2.)

Athyma Bahula, n. sp.?—Allied on the upper-side to *Athyma opalina*, and, like that species, on the fore-wing has the discoidal streak divided into four portions, but which differs in being narrow and the terminal portion being much elongated, whereas in *A. opalina* this portion is short; it has also a distinct submarginal row of linear spots; the bands are also narrower throughout; on the under-side this species differs in the fore-wing in having the portions of the discoidal streak divided by a blackish line, and a distinct marginal and submarginal row of spots; space between the markings blackish; on the hind-wing between the curved precostal streak and inner band are some short blackish lines: in *Ath. opalina*, on the inner band from the middle of its lower margin, there is a descending greyish portion to abdominal margin, whereas in *Ath. Bahula* this is wanting; space between the two bands with blackish patches; a distinct marginal row of linear spots. Expanse $2\frac{3}{8}$ to $2\frac{7}{8}$ inches. Sexes alike.

Hab. Sylhet. In British Museum Collection, and W. C. Hewitson, Esq.

4. *ATHYMA LARYMNA*.

Limenitis Larymna, E. Doubleday, MS.

Athyma Larymna, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 7. t. 35. f. 1 (1850); Moore, Catal. Lep. Mus. E. I. C. i. p. 172.

Hab. Borneo. In Collection East India Company, British Museum, and W. W. Saunders, Esq.

Remark.—In this fine species, recently sent home by Mr. Wallace, the sexes are alike.

5. *ATHYMA RETA*, Moore. (Pl. L. f. 3.)

Athyma Reta, n. sp.—Allied to, but differs from *Ath. Kresna* in having the discoidal streak somewhat narrower, the three oblique spots near the apex and the three to the posterior margin much larger, there also being a small spot between these two series; marginal lines very indistinct; bands on the hind-wing rather broad; markings of the under-side as in above. Expanse $2\frac{3}{8}$ inches.

Hab. Sumatra (*Raffles*). In the collections of Dr. Horsfield and W. C. Hewitson, Esq.

6. *ATHYMA KRESNA*, Moore. (Pl. L. f. 4.)

Athyma Kresna, n. sp. Male.—Upper-side blackish-brown; fore-wing with discoidal streak in three portions, the third portion largest and triangular; an oblique transverse row of three spots near the apex; a large spot in middle of disc, and two smaller spots on middle of posterior margin, bluish-white; a submarginal row of

small ill-defined whitish spots; hind-wing with inner band and narrower outer row of spots, bluish-white; a narrow marginal line to both wings, light brown. Under-side brown, with markings as above, but all less defined, except the marginal line, which is whitish. Expanse $2\frac{3}{10}$. Body with collar and band across abdomen white.

Hab. Borneo; Sumatra. In Collection British Museum.

Allied to *Ath. Larymna*, Dbl., but distinguished by its smaller size and white markings, the discoidal streak in that species being in *four* portions.

7. *ATHYMA NEFTE*. (Pl. L. f. 5.)

♀ *Papilio Nefte*, Cramer, Pap. Exot. iii. t. 256. f. E. F. (1782).

Pantoporia Nefte, Hübner, Verz. bek. Schmett. p. 44.

Nymphalis Nefte, Godart, Enc. Meth. ix. p. 429.

Limenitis Nefte, Boisduval, Spec. Gen. Lep. t. 8 (4 B.). f. 6; E. Doubleday, List Lep. Brit. Mus. pt. 1. p. 93.

Athyma Nefte, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 11; Moore, Catal. Lep. Mus. E. I. C. i. p. 173.

Hab. Java; Borneo. In Museum East India Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

Remark.—The male of *Athyma Nefte* has all the markings of the upper-side white, these in the female being orange-coloured.

8. *ATHYMA ASITA*, Moore.

Anthyma Asita, n. sp. Male.—Differs from *Ath. Inara* on the upper-side of the fore-wing in having the basal portion of the discoidal streak white; the submarginal row of spots being ferruginous at the apex of the wing only, the rest being white; and on the hind-wing in having both bands white. Under-side with markings coloured as in upper-side. Expanse $2\frac{2}{8}$ inches.

Hab. Unknown, probably N. India. In Collection of W. W. Saunders, Esq.

Remark.—This species is intermediate between *Athyma Nefte* and *Ath. Inara*. Female unknown.

9. *ATHYMA INARA*. (Pl. L. f. 6.)

♂ *Limenitis Inara*, E. Doubleday, MS.

♂ *Athyma Inara*, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. t. 34. f. 3 (1850); Moore, Catal. Lep. Mus. E. I. C. i. p. 173.

Hab. Darjeeling, N. India. In Collection East India Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

Remark.—The female of *Athyma Inara* has all the markings on the upper-side orange colour, as in that sex of *Ath. Nefte*.

10. *ATHYMA SUBRATA*, Moore. (Pl. LI. f. 1.)

Athyma Subrata, n. sp. Female.—Upper-side deep brown, with the markings disposed as in the female of *Athyma Nefte*; but they are all narrower, and instead of being of a deep orange colour, are

suffused with very pale brown. The under-side is also much darker, being of a light smoky-brown, with all the markings white. Expanse $2\frac{1}{2}$ inches.

Hab. Malacca, Sumatra. In Collection British Museum, and W. W. Saunders, Esq.

11. *ATHYMA CAMA*, Moore.

Athyma Cama, Moore, Catal. Lep. Mus. E. I. C. i. p. 174. pl. 5 a. f. 5 ♂ ♀ (1857).

Athyma Cama. Male.—Upper-side velvety-black; fore-wing with a brown marginal and submarginal line; discoidal streak indistinct, ferruginous, and dusted over with black; near the apex a ferruginous spot; two oblique spots from subcostal vein on one-third of the wing from the apex, and a band of three spots from middle of wing to posterior margin, joining a band across the hind-wing, white, bordered with blue; on the hind-wing also a marginal and submarginal brown line. Body black, with a broad white band across base of abdomen, also a pale ferruginous line across the thorax. Under-side pale ferruginous, markings purplish-white; the curved band as above; fore-wing with a long broad irregular discoidal streak, a submarginal and indistinct marginal line; a black patch near the base of wing, and another near posterior angle; hind-wing with a curved line near base of wing, and a rather broad outer band, a marginal row of marks; some patches of brown between outer and inner band. Body and abdominal margin broadly grey.

Female.—Upper-side black; markings ferruginous; fore-wing with a long discoidal streak; an oblique band from anterior to near middle of exterior margin, and nearly joining a band running to middle of posterior margin; a marginal and submarginal brown line, the latter ferruginous anteriorly and posteriorly; hind-wing with a broad inner and narrower outer band; also a marginal brown line. Body black, with a white band across the base of abdomen, and tinged below the band with ferruginous; also a pale white collar. Under-side ferruginous; markings as in the male, but pinky-white, except marginal and submarginal lines, which are purplish-white. Expanse of wings in male $2\frac{1}{2}$ to $2\frac{7}{8}$ inches, female 3 inches.

Hab. Darjeeling, N. India. In Museum East India Company, and W. C. Hewitson, Esq.

Remark.—The male of *Athyma Cama* may at once be known from that sex of *Ath. Selenophora* in having on the upper-side a ferruginous spot close to the apex, and the band on the fore-wing being composed of three spots.

12. *ATHYMA SELENOPHORA*.

♂ *Limenitis Selenophora*, Kollar in Hügel's Kaschmir, iv. pt. 11. p. 426. t. 7. f. 1, 2 (1844); Westwood in Doubleday and Hewitson's Diurnal Lep. p. 276. n. 8.

Athyma Selenophora, Moore, Catal. Lep. Mus. E. I. C. i. p. 175.

Hab. Masuri (Kollar); Darjeeling. In Collection East India

Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

Remark.—The male of this species may be distinguished from *Ath. Cama* on the upper-side by having the oblique subapical spots narrower, and the band on the fore-wing being composed of four spots; in the under-side being of a darker ferruginous colour, and the streak along discoidal cell being divided into four portions, and in having darker black blotches; also in having on the hind-wing four short black lines disposed between the inner band and discoidal vein. Expanse of male $2\frac{6}{8}$ inches. Female unknown, but would have the markings above ferruginous.

13. *ATHYMA RANGA*, Moore.

Athyma Ranga, Moore, Catal. Lep. Mus. E. I. C. i. p. 175. pl. 5 a. f. 6 (1857).

Athyma Ranga.—Upper-side smoky-black; fore-wing with a curved interrupted white band from anterior margin, one-third from the apex, to middle of posterior margin, being composed of eight spots, the first on anterior margin very narrow, second, third and fourth elongate conical, the fourth being the shortest; fifth triangular and broadly divided from the fourth; sixth broad, largest, and nearly square; seventh narrower and broadly divided from the sixth; and eighth long and narrow; a marginal and submarginal row of rather indistinct whitish spots; base of wing covered with indistinct white spots; hind-wing with broad inner band, intersected by the veins; an outer or submarginal row of broad conic-shaped indistinct white spots; a marginal row of very indistinct spots, also indistinct spots at the base of wing; abdominal margin whitish. Body dark brown: abdomen with two rows of small white spots. Under-side with the markings the same and very distinct; body and abdominal margin greenish-white. Expanse $2\frac{3}{8}$ inches. Sexes alike.

Hab. Darjeeling. In Museum East India Company, British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

14. *ATHYMA MAHESA*, Moore.

Athyma Mahesa, Moore, Catal. Lep. Mus. E. I. C. i. p. 176. pl. 5 a. f. 7 (1857).

Athyma Mahesa. Male.—Upper-side smoky-black; fore-wings with a green gloss in some lights; fore-wing with three white ovate spots obliquely from subcostal vein one-third from the apex; two white spots in middle of the wing, the upper one very small, and two white spots on middle of posterior margin, the upper oval, the lower narrow; two indistinct white spots in discoidal cell, and some indistinct greenish spots at the base of the wing; a marginal and submarginal row of light brown spots; hind-wing with an inner white band, divided by the veins, and an outer or submarginal row of indistinct brownish-white conic-shaped spots; also a very indistinct marginal row of small light brown spots. Body brown; abdomen

with two rows of white spots. Under side paler, tinged with ferruginous about the disc; markings the same, but all very distinct, and more or less white; the spots within discoidal cell and base of fore-wing divided by black marks; base of costal margin yellowish-white; hind-wing with space between precostal and costal vein yellowish-white; a curved oval black mark, whitish within, between the costal vein and inner band; a row of black patches between inner and outer band. Body and broadly on abdominal margin yellowish-grey. Expanse $2\frac{7}{8}$ inches.

Hab. Darjeeling. In Museum East India Company, and Hopeian Collection at Oxford.

Remark.—This species may be known from *Athyma Ranga* by its larger size and much narrower band.

15. *ATHYMA ABIASA*, Moore. (Pl. L. f. 7.)

Athyma Abiasa, n. sp. Male.—Upper-side black; markings bluish-white; fore-wing with an indistinct narrow streak from base, and a large spot near extremity of the discoidal cell; an indistinct narrow transverse disco-cellular line; three spots obliquely from subcostal vein one-third from the apex, the third spot being minute; two spots in middle of the disc, the upper one small, the lower very large, also a large spot on middle of posterior margin; also a submarginal row of very small whitish spots; hind-wing with rather broad inner band, and outer row of recurved small triangular spots; an indistinct brown marginal line. A band of white across base of abdomen. Under-side dusky-brown, marked as above, with the marginal lines plainer. Expanse 2 inches.

Hab. Java. In British Museum Collection.

16. *ATHYMA IDITA*, Moore. (Pl. LI. f. 3.)

Athyma Idita, n. sp. Male.—Upper-side blackish-brown; markings bluish-white; fore-wing with the discoidal streak in two portions, the first narrow, the second somewhat round; from subcostal vein curving to middle of posterior margin a series of seven spots, the upper two oval, rather long, the third the smallest, fourth larger, the third and fourth widely separated from second and fifth, fifth largest, nearly round, outwardly oblique, sixth and seventh irregularly shaped; a submarginal row of narrow indistinct marks, that at the posterior angle being largest; hind-wing with inner band, and narrow row of six rather square spots curving upward and outward from near abdominal angle, the last spot near anterior angle centred with a dark brown dot. Front of thorax beautifully variegated with ferruginous, green, brown and blue; base of abdomen with broad bluish-white band. Under-side very deep ferruginous; fore-wing having the discoidal streak with black transverse margins and an ill-defined third portion: curved row of spots as above; a submarginal row of large white, black-centred spots; a submarginal and marginal line of white marks; some dusky patches along posterior margin; the large portion of the discoidal streak and submarginal row

of spots with purple reflexions ; hind-wing with curved streak near the base, inner band, outer row of recurved spots, submarginal line of lunular marks, and marginal row of spots, white ; abdominal margin greyish. Expanse $2\frac{1}{2}$ inches.

Hab. Java? In the Collection of the British Museum, Dr. Horsfield, and J. O. Westwood, Esq.

17. *ATHYMA KANWA*, Moore. (Pl. LI. f. 2.)

Athyma Kanwa, n. sp. Female.—Upper-side brown-black ; fore-wing with discoidal streak in two portions, the first long, slightly clavate, the second large and triangular ; two small oval oblique spots near the apex, the two outer the smallest ; a round spot in middle of the disc, and a spot and a dot on middle of posterior margin ; an ill-defined submarginal row of narrow marks, white ; hind-wing with inner and outer narrow band, white, divided by the veinlets ; also an indistinct pale brown submarginal line. Under-side paler, with darker patches between the veins ; markings as above. Body with two transverse bluish-white bands. Expanse $2\frac{2}{8}$ to $2\frac{4}{8}$ inches.

Hab. Borneo. In Collection British Museum, and East India Company.

18. *ATHYMA ASURA*, Moore.

Athyma Asura, Moore, Catal. Mus. E. I. C. i. p. 171. pl. 5 a. f. 1 (1857).

Athyma Asura.—Upper-side smoky-brown ; markings creamy-white ; fore-wing with a narrow discoidal streak, which is terminated at a short distance by an angular mark ; a band of spots curving outwards from anterior to middle of posterior margin, the first spot commencing as a very narrow line, second and third long and oval, fourth the smallest, fifth somewhat larger and rounded, sixth larger still and oval, seventh the largest, square, indented at the side, eighth narrow and on posterior margin ; a submarginal row of well-defined lunular marks, terminated on the apex of the wing by an inner row of three small spots ; hind-wing with a broad inner band, also a less broad band from abdominal to anterior angle, this being intersected by the veinlets, and having a single black spot in the middle between each veinlet ; marginal line in both wings pale brown. Body with a narrow bluish-white collar and band across the base of the abdomen. Under-side bright ferruginous ; markings as above, but the fore-wing has the submarginal row of marks broad, and having a black spot in the middle of each ; also a marginal row of small spots ; some black lines bordering the discoidal marks, also a small black circle near base of wing, and a patch of black on posterior margin near the angle ; hind-wing with the inner and spotted outer band the same as above ; a bluish-green curved line across the base of wing, and a marginal row of lunular spots. Body and upper part of abdominal margin bluish-green. Sexes alike. Expanse 3 inches.

Hab. N. India. In Collection India House, British Museum, W. W. Saunders, Esq., W. C. Hewitson, Esq., and Hopeian Museum at Oxford.

Remark.—This species may be distinguished from all others by the outer band on the hind-wings having a central spot between each vein.

19. *ATHYMA SULPITIA*.

Papilio Sulpitia, Cramer, Pap. Exot. iii. t. 214. f. E. F (1782), nec Fabr.

Acca Sulpitia, Hübner, Verz. bek. Schmett. p. 44.

Nymphalis Strophia, Godart, Enc. Méth. ix. f. 431 (1819).

Athyma Strophia, Westwood in Doubleday and Hewitson's Diurnal Lep. p. 274. n. 4.

Hab. China. In Collection W. W. Saunders, Esq., and W. C. Hewitson, Esq.

20. *ATHYMA SANKARA*.

Limenitis Sankara, Kollar in Hügel's Kaschmir, iv. pt. 11. p. 428 (1844).

Hab. Masuri, N. W. India (*Kollar*).

Remark.—We have been unable to identify this species from the description by Kollar.

21. *ATHYMA JINA*, Moore.

Athyma Jina, Moore, Catal. Lep. Mus. E. I. C. i. p. 172. pl. 5a. f 3 (1857).

Athyma Jina. Male. — Upper-side smoky-brown; markings creamy-white; fore-wing with the discoidal streak *entire*, long, broad and thickening to the extremity; a series of seven spots from subcostal vein, curving outward to middle of posterior margin, the first being small, second larger, broader, third narrow, fourth small, fifth larger, oval, sixth the largest, somewhat square and indented at the side, seventh narrow, elongated, triangular; a submarginal row of rather indistinct spots, those on the apex broadest; hind-wing with inner band somewhat narrow; outer band composed of broad lunulated spots. Band at the base of the abdomen whitish. Under-side brilliant ferruginous, posterior margin of the fore-wing blackish; markings the same as above, but the fore-wing with an additional spot on costal margin to the curved row; extreme exterior margin blackish, bounded inwardly by a submarginal row of white lines; hind-wing with the inner band extending across abdominal margin; space between base of wing and costal vein white; extreme exterior margin blackish, bounded inwardly by a marginal row of narrow lunular marks. Body white. Expanse 3 inches.

Hab. Darjeeling, N. India. In Museum East India Company.

Remark.—This species may at once be distinguished by the discoidal streak being *entire*.

22. *ATHYMA PRAVARA*, Moore.

Athyma Pravara, Moore, Catal. Lep. Mus. E. I. C. i. p. 173. pl. 5 a. f. 4 (1857).

Athyma Pravara.—Upper-side smoky-brown, markings creamy-white; fore-wing with an *entire* club-shaped streak; a transverse row of spots curving outward from costal vein towards the apex, to middle of posterior margin, the first and second spot being rather large and square, the third much smaller, the fourth a mere dot, the fifth the largest and oval, the sixth large and indented at the sides, the last narrow; a row of submarginal linear-shaped spots, more or less distinct; hind-wing with a broad inner band, and a narrow band of spots curving outwardly from anal angle to anterior angle; a submarginal line and abdominal margin light brown. Body with a narrow bluish-white band across the thorax, and another across the base of the abdomen. Under-side paler brown, with markings as above, but with dark-brown patches between the markings. Body and abdominal margin greyish. Sexes alike. Expanse $2\frac{1}{8}$ inches.

Hab. Java; Borneo. In Museum East India Company, and W. C. Hewitson, Esq.

23. *ATHYMA ILLIGERA*. (Pl. LI. f. 4.)

Limenitis Illigera, Escholtz in Kotzebue's Voy. t. 8. f. 17.

Neptis Illigera.—Upper-side brown-black; fore-wing with ill-defined brownish-white *entire* discoidal streak; a large spot crossed by a vein in middle of the disc, and a small spot on middle of posterior margin, white; also several transverse series of small white spots at the apex; hind-wing with a broad white inner band; an indistinct narrower outer band, marginal line and line between the bands, pale brown. Under-side as above, with all the markings white. Sexes alike. Expanse $2\frac{1}{8}$ inches.

Hab. Manilla. In collection British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

24. *ATHYMA DAMA*, Moore. (Pl. LI. f. 5.)

Athyma Dama, n. sp. Female.—Upper-side brown-black; fore-wing with narrow straight line within discoidal cell, and a parallel large longitudinally oval spot white, the narrow line tinged at the base with yellow; two small subapical spots, a larger spot on lower part of disc, and two narrow spots on posterior margin, white; an ill-defined brownish-white marginal and submarginal spotted line; hind-wing with broad white inner band, and a narrow outer band, marginal line, and line between the bands, pale brown. Under-side as above, but tinged with ferruginous; all the markings white. Expanse $1\frac{8}{10}$ inch.

Hab. Manilla. In collection of W. W. Saunders, Esq., and W. C. Hewitson, Esq.

25. *ATHYMA KASA*, Moore. (Pl. LI. f. 6.)

Athyma Kasa, n. sp. Female.—Upper-side smoky brown; fore-

wing with ill-defined whitish discoidal streak, in three portions; from costal margin near the apex three narrow spots, oblique; in middle of disc two large spots, and two on middle of posterior margin, broad, white; an indistinct marginal and submarginal pale brown line, the latter anteriorly spotted with white; hind-wing with broad white inner band, and very narrow line of whitish lunulate marks, bounded above with a lunular black spot; an indistinct black line between the band and the latter; an indistinct pale brown marginal line. Under-side ochreous-red, with darker margins, markings as above, the interstices with patches of black; spots at base of wings, and row of spots within the outer band and another row between the two bands of the hind-wing, black; marginal lines white. Abdominal margin and body greenish-grey. Expanse 3 inches.

Hab. Philippine Islands. In British Museum Collection.

26. *ATHYMA GUTAMA*, Moore. (Pl. LI. f. 7.)

Athyma Gutama, n. sp. Female.—Upper-side smoky-black; fore-wing with ill-defined brownish-white discoidal streak, straight, entire; three oblique spots from costal margin near the apex, and three to the middle of posterior margin, white, the first of the latter being large and oval, the second square, the third narrow; an ill-defined margin and submarginal brownish-white lines, the submarginal anteriorly being spotted with white; hind-wing with broad white inner band, and narrow brownish-white outer band; marginal line and line between the band brownish. Under-side rather paler, with markings as in upper-side, but more defined and all white, except the line between the bands of the hind-wing and an irregular line outside the oblique spots of the fore-wing, which are ochreous. Expanse $2\frac{3}{4}$ inches.

Hab. Manilla; Philippine Isles. In collections of the British Museum, and W. W. Saunders, Esq.

27. *ATHYMA VENILIA*.

Papilio Venilia, Linnæus, Syst. Nat. ed. 10. n. 120 (1767); Clerck, Icon. t. 32. f. 4; Fabricius, Ent. Syst. iii. 1, p. 134; Cramer, Pap. Exot. iii. t. 219. f. B. C.

Nymphalis Venilia, Godart, Enc. Meth. ix. p. 433.

Hab. Java; Ceram or Amboyna (*Madame Pfeiffer*). In collection British Museum, W. W. Saunders, Esq., and W. C. Hewitson, Esq.

✓ 3. DESCRIPTIONS OF ELEVEN NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

(Mollusca, Pl. XL.)

1. *HELIX WALLACEI*, Pfr. *T. subperforata, subconoideo-depressa, solidula, leviter striata, pallide isabellina, fusco-unizonata et*



Moore, F. 1858. "Monograph of the Asiatic species of Neptis and Athyma, two genera of diurnal Lepidoptera belonging to the family Nymphalidae." *Proceedings of the Zoological Society of London* 1858, 3–20.

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