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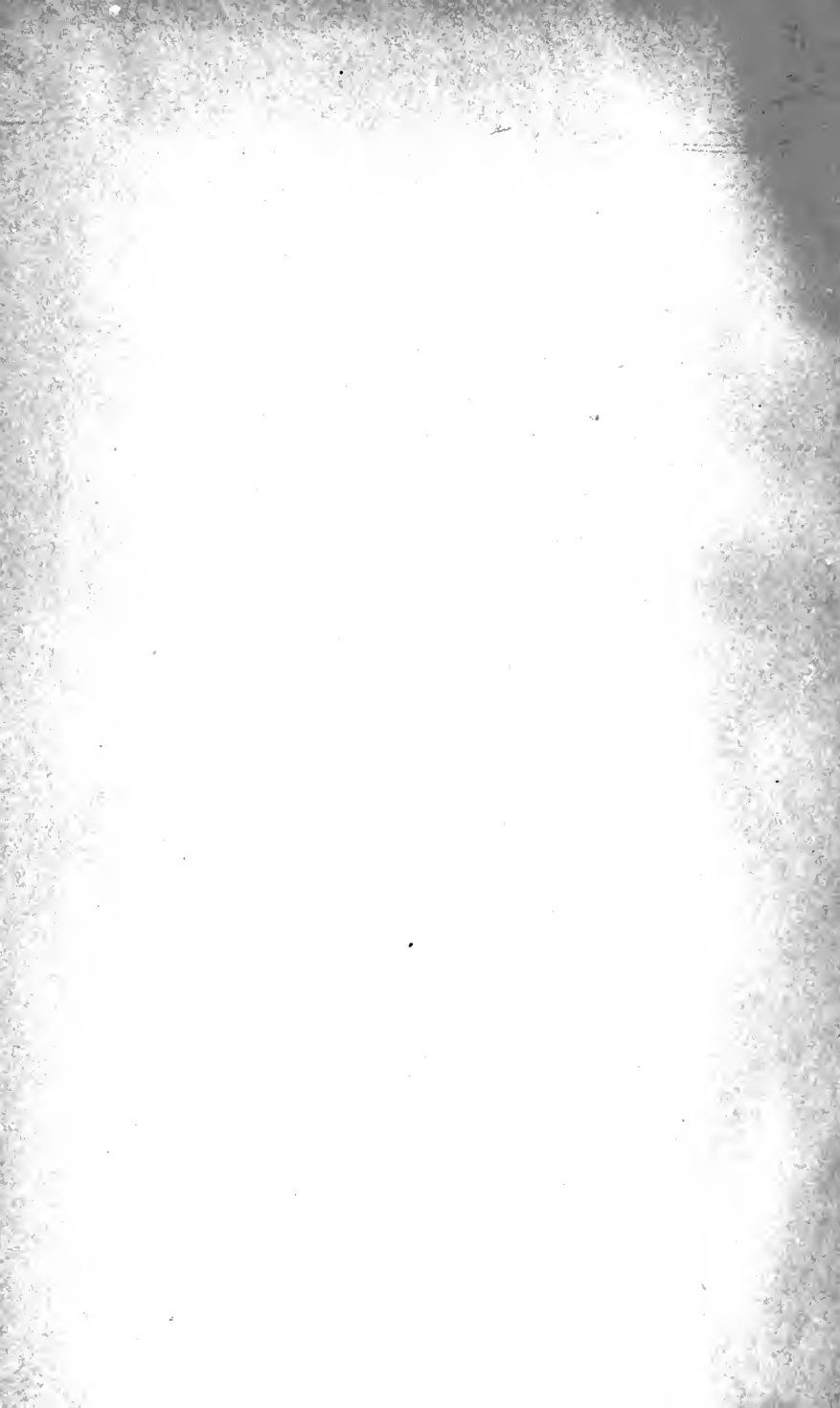
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XVIII.—*On the Tsu-shima Representative of the Japanese Sable.* By OLDFIELD THOMAS.

THE late Mr. P. A. Holst, while collecting birds for Mr. Henry Seebohm in the far East, obtained and sent home five specimens of the Marten which inhabits the islands known as Tsu-shima, between Corea and Japan. These specimens are clearly related to the Japanese Sable (*Mustela melampus*), but differ so much in the details of their coloration as to demand subspecific separation. Two of the specimens are in summer pelage and three in winter, and, for comparison with them, there are in the British Museum one summer and four winter examples of the Japanese form. The summer and one of the winter specimens are co-types of Temminck's species, while the former is, in addition, the type of *M. japonicus* of Gray, who, in spite of Temminck's definite account of the seasonal changes, considered the brown summer form as characterizing a different species, and re-named it accordingly.

Mustela melampus tsuensis, subsp. n.

Similar to the typical form in size, quality of fur, and in cranial and dental characters, but distinguished by the following colour-characters:—

In winter pelage.—General colour above dirty yellowish brown instead of rich orange-yellow. Top of head to nape, instead of only to forehead, ashy greyish white. Muzzle, up to and including the orbital region, and lips (both upper and lower) black; interramia* brown; throat white, in continuation with the white of the cheeks and crown, passing on the chest and belly into dark brownish yellow. Fore limbs black from the elbow downwards; hind limbs black on the feet, brown below the knee.

In this pelage the most marked distinctions from *typicus* are the black instead of brown muzzle and lips, the brown instead of white interramia, and white instead of yellowish throat, besides the difference in general tone and greater extension backwards of the ashy colour of the crown.

* *Interramia.*—The space between the rami of the lower jaw, behind the "chin" but anterior to the "throat." In describing mammals a name is constantly being wanted for this region; but I have been quite unable to discover whether there is already one in existence, and therefore now suggest one. I have personally felt the want of such a word again and again, especially when describing antelopes, in which the interramia is particularly distinct from either chin or throat.

In summer pelage.—General colour singularly like that of a dark-coloured pole-cat (*Putorius putorius*), much darker than in the typical form. All the parts that are brown in *typicus* are black in *tsuensis*, while the whole of the limbs, and not only their distal portions, are black. Below, the lips and interramia are black, the light mottling of the throat is less in extent but much brighter in colour, orange-yellow or orange, and the belly is much darker brown. Some of these differences may be due to the faded state of the only summer *typicus* available, and therefore less stress is to be laid on them than on those in the winter pelage. On this account the type selected is a winter example.

Approximate dimensions of the type, from a skin (♂):—
Head and body 470 millim.; tail 160; hind foot 85.

Skull: basal length 78; greatest length 88; greatest breadth 54; interorbital breadth 23; palate length from gnathion 41; palate breadth between outer corners of $\frac{p.4}{30}$.

Hab. Tsu-shima Islands.

Type: B.M. 91. 10. 14. 3, collected at Kamoze, April 17, 1891, by Mr. P. A. Holst.

XIX.—On a new Gazelle from Central Arabia.

By OLDFIELD THOMAS.

SURGEON LIEUT.-COLONEL A. S. G. JAYAKAR, of Muscat, to whom our knowledge of the fauna of South-eastern Arabia is largely due, has recently sent to the British Museum a further consignment of mammals, collected within the last two years. Besides the Oman specimens, all of which belong to species recorded in my paper on the mammals of that district*, there are several skins of a Gazelle received by Dr. Jayakar from Nejd, in the interior of Arabia, and these prove to represent a most distinct form from any previously known.

It may be called

Gazella marica, sp. n.

Size about as in *G. dorcas*. Colour of head very much as in *G. leptoceros* and *Loderi*—that is to say, with the usual gazelline face-markings almost obsolete. The central and lateral dark bands of the face are of about the general body-colour, and very slightly defined from the paler bands between them. In the middle line the central dark band, such as it

* P. Z. S. 1894, p. 448.

is, barely reaches to the level of the anterior canthus, the whole forehead, over an area roughly corresponding to the frontal bones, being white. Ears long, their backs uniformly pale fawnish white. Body pale fawn, of about the tint of *G. dorcas*, much paler than in the dark *G. muscatensis*. Pale lateral band scarcely visible; dark lateral band and pygal band pale brown, little marked, scarcely darker than the dorsal colour. Limbs whitish or very pale fawn throughout; distinct knee-tufts present.

Skull of about the size and proportions of that of *G. dorcas*, but the nasals are longer and the premaxillæ shorter; the nasal opening is consequently shorter and also broader. Posteriorly the nasals are more broadly rounded. Bullæ much inflated.

Horns unfortunately not perfectly describable, as in the only old male they have had their ends cut off, and the type is rather immature. So far as can be seen, however, they are of a somewhat lyrate shape, short, not very strongly curved backwards, and with their ends turned inwards towards each other. Female with horns of the usual proportions.

As to measurements, the distance from the calcaneum to the tip of the hoof round the curve is 305 millim., the same measurement in *G. muscatensis* being about an inch less. The ears, moistened, are about 135 millim. from notch to tip.

Skull of the type: basal length 150 millim.; greatest length 167; greatest breadth 77; nasals, length 57, breadth 22; nasal opening 42×24 ; gnathion to orbit 88; gnathion to front of tooth-row 36; palate length 86.

The horns of the type are just 200 millim. (8 inches) in length round the curve outside, and, judging from comparison with the older specimen, would have probably become about a couple of inches longer.

Hab. Nejd, Central Arabia.

Type Brit. Mus. 97. 1. 14. 5.

Dr. Jayakar says in his letter:—"Among the mammals are four Reem Gazelles from the Nejd desert, and one from Dahireh, the north-western district of Oman. It is probable that the species extends down to the desert behind Oman, as that is continuous with the Nejd desert."

No described species really needs any detailed comparison with *G. marica*, which differs from nearly all known Gazelles by its obsolete face-markings. Of the few species similarly pale-faced, *G. leptoceros* and *Loderi* are much larger and have wholly different elongate horns, and *G. gutturosa*, *subgutturosa*, and *picticaudata* have hornless females.

XX.—New Eastern Heterocera.
By Col. C. SWINHOE, M.A., F.L.S.

Fam. Sphingidæ.

Genus PHYLLOSPHINGIA, nov.

♂. Palpi broadly scaled, upturned, and not reaching vertex of head, which has a somewhat pointed crest; antennæ fasciculate; thorax with sharp dorsal crest. Fore wing long and narrow, outer margin oblique, evenly and deeply crenulate, hinder angle lobed and the inner margin excised before it. Hind wing with the costa excised to middle, then produced upwards to a lobe; outer margin deeply and evenly crenulate; veins 6 and 7 from upper angle.

Allied to *Cypa*, Walker, and *Degmaptera*, Hampson; differs from the former in the broadly scaled palpi, the evenly crenulate outer margins, and the excised lobed costa of hind wing; from the latter in the broadly scaled palpi, the evenly crenulate outer margin, the less excised inner margin of fore wing and costa of hind wing; and from both in veins 6 and 7 of hind wing being from angle of cell.

Type *P. perundulans* mihi.

1. *Phyllosphingia perundulans*, sp. n.

♂. Rosy chestnut-brown; shaft of antennæ, upper side of palpi, top of head, and a thin dorsal band on thorax dark brown. Fore wings with the costa dark brown, broadly brown on the basal third, and with some brown marks on the apical third, from whence to the apex there are some whitish suffusions; the disk crossed by three or four very indistinct brown lines; a dark and bright chestnut band on fascia from the middle of the cell, broad and lobed beneath the outer half of the median vein, and halfway outwards beneath vein 4, and another similar fascia nearly joining it from the outer margin below the apex, its upper side limited by the whitish apical suffusion. Hind wings coloured like the fore wings, with indications of faint transverse bands. Underside brighter chestnut-colour, the white suffusions near the costa towards the apex being developed into white bands; the hind wings brighter coloured than the fore wings, being of a red-chestnut, with a rosy-white band before the middle.

Expanse of wings $4\frac{7}{10}$ inches.

Jaintia Hills.

Fam. Notodontidæ.

Genus EUPLEXIDIA, nov.

♂. Palpi curving upwards, second joint thickly scaled, third oblique; antennæ with very minute cilia; a tuft on metathorax, also dorsal tufts on abdomen near the base; tibiæ with some long hairs. Fore wing with the apex rounded; vein 10 slightly touching 8 and 9, to form the areole. Hind wing with veins 6 and 7 stalked, 8 from the cell near the base, 5 very slight and from middle of discocellular.

Type *E. noctuiformis* mihi.

2. *Euplexidia noctuiformis*, sp. n.

Euplexidia noctuiformis, Swinh. MS.; Hampson, Moths, iv., Suppl. p. 461 (1896).

♂. Antennæ, head, body, and fore wings brown, with a slight pinkish tinge. Fore wings irrorated with white and black atoms in parts; costa with black marks and with three white dots near the apex; two or three small black dots near the base; a rather prominent key-shaped black mark placed longitudinally in the centre of the wing below the cell; orbicular and reniform marks indistinct, grey, marked with black; an indistinct sinuous grey submarginal line; a similar but more indistinct marginal line and black points in the interspaces on the margin. Hind wings white, with a brown marginal line and white cilia interlined with brown.

Expanse of wings $1\frac{6}{10}$ inch.

Cherra Punji.

Fam. Larentiidæ.

3. *Cryptoloba olivaria*, sp. n.

♂ ♀. Pale olive-grey; fore wings with minute brown costal dots close to each other; a grey transverse nearly straight band just before the middle, commencing at a brown mark on the costa; a similar discal band across both wings, with a disjointed black line running down its inner side above the middle on fore wings, the space between this band and the margin with a darker shade than the rest of the wings and with indications of a submarginal grey line; a brown spot on costa of fore wings before the apex.

Expanse of wings $\frac{7}{10}$ inch.

Shillong.

Fam. Boarmiidae.

4. *Dalima gigantea*, sp. n.

♀. Greyish ochreous; a straight, broad, dull ochreous-red band before middle of fore wings; a black cell-spot; a thick medial line across both wings, bent outwardly below costa of fore wings, and a broad marginal band of the same dull ochreous-red colour on both wings, with its inner margin on fore wings bent, corresponding to the angle of the middle line; this band is diffused hindwards, and joins the middle line on fore wings, and includes an ochreous patch at apex, a small one in the middle near the outer margin, and a large one near the hinder angle; in the hind wing it is diffused inwards, covering half the wing, and includes several ochreous patches; all the ochreous portions of both wings are sparsely covered with black dots. Underside as above, with the bands and dots darker and more prominent; the hind wing is produced into an angle at vein 6, as in *D. truncataria*, Moore; the fore wing has the apex much more acute, and has two large excavations immediately below it.

Expanse of wings $4\frac{2}{10}$ inches.

Jaintia Hills.

I have two perfect females; the pattern and shape of wings are quite different to those of any species of *Dalima* known to me.

Fam. Chalcosiidae.

5. *Herpa eupoma*, sp. n.

♂. Black, collar white; an orange-red spot on each side of the thorax in front corresponding to the broad orange costal band of the fore wings, which fines down to a line at one fourth before apex; a black band near base from costa to hinder margin, the orange inside the band nearly red, like the spots on the shoulders, principal veins pale; hind wings also black, bordered with bright red-orange, broadly on the costa, occupying one third of the wing-space, curving outwardly in the middle, the orange colour on the outer margin confined only to the cilia. Underside as above, all the veins orange-coloured, and a streak of that colour running down vein 1 c of the hind wings.

Expanse of wings $1\frac{6}{10}$ inch.

Jaintia Hills.

Looks like a *Soritia*, but has the venation of *Herpa*, the origin of veins 7 and 9 being more separated than usual in the genus.

Fam. Trifidæ.

6. *Ancara olivescaria*, sp. n.

♀. Head, body, and fore wings bright olive-brown, irrorated with black atoms; transverse bands black, double, composed of disconnected lunular marks; basal and ante- and postmedial orbicular and reniform with black rings, the former within the antemedial band and has a small square black patch beneath it; costa with black spots; a transverse discal row of white dots; black marginal points in the interspaces: hind wings black; cilia of both wings dull ochreous, with black patches. Underside pale olive-brown; fore wings with the inner parts black; both wings with black cell-spots and rather broad black transverse band.

Expanse of wings $2\frac{3}{10}$ inches.

Jaintia Hills.

Fam. Acontiidæ.

7. *Eublemma silicula*, sp. n.

♂. Pale pinkish grey; palpi brownish on the outer sides; top of the head white. Fore wings with a white costal line; a grey spot at the end of cell; some reddish-brown spots on the costa, the largest at apex, with two black dots below it; indistinct ante- and postmedial outwardly curved pale lines. Hind wings with the costal portion whitish; both wings with a grey marginal line.

Expanse of wings $\frac{7}{10}$ inch.

Karachi; Hydrabad, Sind; Koni, Shan States.

Fam. Stictopteridæ.

8. *Stictoptera cerea*, sp. n.

♂. Palpi, head, thorax, and fore wings bright chestnut-brown. Fore wings crossed by five double sinuous lines, which are here and there marked with white atoms—first at base, second before the middle, third medial, touching the inner side of the large ear-shaped reniform, fourth discal (well marked with white specks), fifth submarginal; four white dots on costa near apex. Hind wings black, with prominent white cilia. Underside: both wings uniform dull black; fore wings with the white costal dots and some white dots on the black cilia; hind wings with cilia pure white as above.

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

Gilolo.

Allied to *S. anthyalus*, Swinh.

Fam. **Quadrifidæ.**9. *Remigia crinigera*, sp. n.

♂. Pale fawn-colour; fore wings with a large brown spot at the end of cell; an erect discal brown band, its inner margin well defined by a dark brown thick line; the band is diffuse outwardly and is limited by an indistinct sinuous grey line halfway between the thick line and the margin; marginal black points between the veins. Hind wings with a brown dot at the end of cell, and a broad brown marginal band and marginal points. Underside paler, bands and cell-spots as above; a row of five or six small spots beyond the middle on the hind wings, and black marginal points on both wings; mid and hind tibiæ with very large tufts of long hairs.

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

Gilolo.

Fam. **Focillidæ.**10. *Mecodina obscurata*, sp. n.

♂ ♀. Of a uniform pale fawn-colour, very similar in shade to the coloration of a pale *Remigia frugalis*, Fabr. Fore wings with a black spot at end of cell; bands slightly darker than the ground-colour—one medial below the spot, another discal from costa near apex to hinder margin near the angle, both broad and straight; between these bands, but nearest to the middle band, is a sinuous line, more or less dentate in parts: the hind wing is paler than the fore wing, and has traces of bands and lines similar to those on the fore wing, and on both wings there are black dots on the margin in the interspaces between the veins. On the underside the coloration is paler and perfectly uniform; the fore wing is immaculate, but there is a prominent black spot at the end of the cell of the hind wings; marginal dots as above.

Expanse of wings $2\frac{4}{10}$ – $2\frac{5}{10}$ inches.

Jaintia Hills.

11. *Mecodina napa*, sp. n.

♀. Of a uniform pale brown colour, tinged with pinkish; lines and markings dark brown. Fore wings with a double sinuous line at the base; double sinuous line before the middle; a black dot at end of cell; a single thick and nearly straight line beyond the middle nearly touching the inner edge of the reniform, which is in the figure of 8; a thick similar line from costa near apex to outer margin above the

middle; inside of this is a sinuous line running parallel with it to the outer margin, then in a dentate form to the hinder margin near the hinder angle; between this and the margin is another similar but indistinct line. Hind wing with an inner straight thick line; a thick discal line deeply angled above the middle towards the margin; an indistinct dentate line inside of this, a lunulate line between it and the margin, and an indistinct lunular marginal line on both wings. Underside much paler, uniform in colour; indications of two discal lines on fore wings and three central lines on hind wings.

Expanse of wings 2 inches.

Singapore.

Allied to *M. lanceolata*, Guen.

12. *Diomea orsilla*, sp. n.

♀. Dark rufous; fore wings irrorated with black and white atoms, smeared with white on the costa; costal line pale pink, with three white dots near the apex; ante- and postmedial whitish transverse lines, both bent inwards on the costa, where they are thickened; the former line is outwardly and the latter inwardly lined with red, and there is a bare round blackish reniform stigma between them; an indistinct sinuous submarginal pale line and very indistinct brown marginal points. Hind wings with the costal portion paler, with a central transverse pale line, corresponding to the post-medial line of the fore wings.

Expanse of wings 1 inch.

Singapore.

Allied to *D. fabularis*, Swinh., from Burma.

13. *Zethes lahera*, sp. n.

♂. Both wings and body of a uniform pale rufous colour, tinged with grey; fore wings with a broad red band, edged on both sides with white, near the base, and a very large red patch at the apex, with a curved inner margin occupying nearly one fourth of the wing-space; a largish white spot, smeared with red, inside the patch near the apex; a black dot at end of cell, a white spot beyond; a discal and outwardly curved pale line from costa to hinder margin, the curve taking it inside the apical red patch; another dentated line between this and the margin; a lunular line close to the margin, the lunules being in the interspaces and having in them black points. Hind wings with a red patch on the anal

angle, and with outer pale transverse lines corresponding to the lines on the fore wings. Underside much paler, uniform in colour, with a thin discal (on hind wings medial) grey band across both wings.

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

Singapore.

There is a specimen from Tenasserim of this insect in the British Museum unnamed.

Fam. Pyralidæ.

14. *Sisyrophora cirralis*, sp. n.

♂. Palpi upturned, conically scaled; antennæ with the first joint dilated; the shaft laminate, excised at base, with tufts of scales on upperside before and after the excision. Fore wing with costal fold enclosing a tuft of long hair. Silvery white; head, base of collar, shoulders, and anal tuft black-brown; fore wing with the costa golden brown, expanding into patches at middle and end of cell, and conjoined to the discocellular line and patches beyond end of cell, all these markings being irrorated with metallic scales. Hind wing with discocellular spot; both wings with submarginal series of fuscous strigæ almost conjoined into a line and dentate inwards on vein 2.

Expanse of wings $1\frac{2}{10}$ inch.

South Borneo.

XXI.—Description of a new Species of *Delma* from Western Australia. By Dr. A. GÜNTHER.

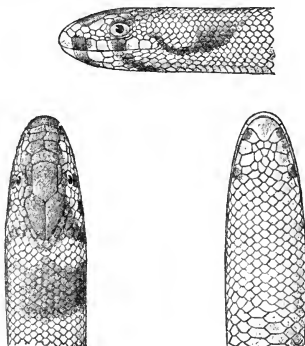
THE Lizard described here was discovered by H. N. Bailey, Esq., in the neighbourhood of Cue, a new township which has sprung up in the middle of the Murchison Gold-Field, some 200 miles from the coast. It was accompanied by a specimen of *Varanus caudolineatus* (Blgr.), which seems to be restricted to Western Australia, and is probably the smallest species of the genus.

Delma (*Cryptodelma*) *Baileyi*.

This species is allied to the type of the genus, *Cryptodelma nigriceps* (Fischer, Wieg. Arch. 1882, p. 290, Taf. i. figs. 5-9), from Nicol Bay, but distinguished by a considerably smaller number of longitudinal series of scales, viz. 22, whilst

the latter species is covered by 26 or 28. In other respects, especially general habitus and scutellation, the two species are very similar to each other.

The length of the tail exceeds that of the trunk and head. The rudimentary hind leg is small and flat, adpressed, and covered with scales, so as to be not readily distinguished from its surroundings.



Rostral shield broad and low. Nostril between three shields, the first labial, nasal, and internasal. The internasals meet behind the rostral, and form the foremost pair of the shields with which the snout is covered. The internasal pair is followed by two pairs of transversely narrow frontals, which, again, are succeeded by a single shield thrice as wide as long; the latter may be regarded as a detached portion of the vertical. Vertical five-sided, longer than broad, with the lateral margins parallel. Occipitals symmetrical, narrow, scarcely longer than vertical.

Two series of small scutes between the vertical and the eye, which is surrounded by a ring of very small scales. Loreal and temporal regions covered with scales. Seven upper labials. The mental is rather large and followed by two lower labials, none of which meet those of the other side. Behind the second lower labial two longitudinal series of small scutes follow.

Body surrounded by 22 longitudinal series of small scales: the ventral scutes are considerably larger than the adjoining scales and begin to be differentiated behind the throat; they are placed in 89 pairs. Eleven præanal pores. Vent with a pair of enlarged scutes; smaller scutes between them and the line of pores.

Yellowish olive, with a red network all over the back and sides; the meshes of the net enclose yellow spots on the sides.

Crown of the head and a broad crescentic band across the neck black. A pair of red spots separating the collar from the black crown. A black band descends from the eye to the infralabials. Lower parts whitish.

Total length 160 millim. Length of tail 90 millim.

This species would belong to Fischer's genus *Cryptodelma*, which has been separated from *Delma*, on account of the presence of præanal pores. However, a comparison of the allied species will show that this technical character leads to a rather unnatural subdivision of the genus.

XXII.—*Descriptions of new Species of Butterflies from the Pacific Islands.* By H. GROSE SMITH, B.A., F.E.S., F.Z.S.

Papilio oberon.

♂. *Upperside* brownish black; anterior wings crossed obliquely, at about one third from the apex, by a row of white spots arranged as in *P. ægeus*, Don., but the spot between the lowest subcostal and upper discoidal nervules is quadrate and not indented externally. Posterior wings with a brownish-white band of spots divided by the veins as in *P. ægeus*, but the inner edge of this band slightly invades the cell as in *P. ormenus*, Guér., and the outer ends are rather more indented and approach nearer the outer margins; above the anal angle is a large suboval brick-red spot.

Underside. Anterior wings as on the upperside; the oblique row of spots is broader and irrorated with grey on the inner side. Posterior wings with a row of six brick-red lunules crossing the disk from the submedian nervure to the apex, those nearest the anal angle the smallest, gradually increasing in size, the apical spot being the largest of them; another brick-red spot, larger than the last-named spot, is situate above the anal angle; inside the row of red spots are two rows of greyish markings, the outer of which consists of three narrow bluish-grey hastate lines between the submedian nervules, above which, divided by the veins, is a row of seven bars of grey scales, indented outwardly, those on either side of the uppermost median nervule being the broadest and most indented, the two bars nearest the apex nearly obsolete.

Expanse of wings $4\frac{1}{2}$ inches.

Hab. Santa Cruz (*Woodford*).

Very near *P. ægeus*, Don.

Stictoplæa melander.

♂. *Upperside* rich dark brown, with purple reflections over the anterior wings, on which are two small subapical violet spots (the spot nearest the apex the smaller), and four others, very minute, between the veins. Posterior wings with one small submarginal lilac spot below the second subcostal nervule, the space above the upper subcostal nervule to the inner margin pale brown.

Underside. Both wings dark brown, paler towards the outer margins. Anterior wings with the space above the submedian nervure and the costal margin pale brown; a triangular violet spot near the end of the cell and five others beyond the cell; one subapical small spot. Posterior wings with a violet spot near the end of the cell and eight others beyond the cell curving round it, the two nearest the inner margin being linear.

♀. *Upperside* pale brown, darker in the middle, with purple reflections on the anterior wings, on which is a violet spot near the end of the cell, and a little beyond it are five spots, three close together near the costa and the other two between the discoidal nervules; a submarginal row of violet spots, the first, third, and fourth of which are nearly obsolete. On the posterior wings the costal space becomes nearly white towards the apex, the outer fourth becomes very much paler to the margins.

Underside paler than above, becoming nearly white towards the outer margins, with all the spots larger and more distinct except the submarginal spots, which are nearly obsolete; the brands on the upperside of the male are represented by two long whitish streaks.

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

Hab. Santa Cruz (Woodford).

Nearest to *S. melolo*, Doherty; the wings are comparatively shorter and rounder in the male, and the submarginal row of spots on the anterior wings are much smaller and less distinct, while the female is quite different.

Asthipa Meeki.

♂. *Upperside* scarcely differs from *A. melusine*, Grose Smith, but the subapical vitreous streaks on the anterior wings are more elongate than in that species.

On the *underside* the wings are browner and on the posterior wings the pale bands do not approach so closely to the base; the pale streaks below the subcostal nervules are also

more elongate; the submarginal row of spots of *A. melusine* are only represented by four spots near the apex.

It is a larger insect than *A. melusine*, but very close to it.

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

Hab. Fergusson Island (*Meek*).

Cupha fumosa.

♂. *Upperside*: both wings fuliginous dark brown, the cells and basal two thirds of the wings paler fuliginous brown; the anterior wings are crossed from the middle median nervule to the inner margin at one third from the outer margin by three ill-defined bright brown spots placed under each other between the veins. Posterior wings crossed beyond the cell by a similar row of spots, outside which is a row of very indistinct dark brown spots.

Underside with the basal three fourths paler fuliginous brown, without any transverse lines or markings; the outer fourth is darker purplish brown, the inner side of the outer fourth is crossed from near the costal to near the inner margin by a row of orange-brown spots, centred with black and nearly surrounded by pale violaceous brown; a pale submarginal dark line crowned by pale violaceous-brown lunules.

Expanse of wings 2 inches.

Hab. Kiriwini, Trobriands (*Meek*).

Doleschallia Comrii, Godm. & Salv.

♂. *Upperside*: both wings resemble *D. dascylus*, Godm. & Salv., in colour, but the basal third of each wing is darker chocolate-brown. Anterior wings with a row of spots across the disk arranged as in *D. dascylus*; the spots are eight in number, the two nearest the costal margin white and small; the next four spots are pale blue centred with white, the fourth spot being larger than the third; the fifth spot is very large and elongated on the outer and inner sides, the latter extending as far as the cell; the fifth spot is abbreviated inwardly, but is wider than the fourth; the seventh and eighth spots are much smaller and are situate further from the margin.

Underside scarcely distinguishable from *D. dascylus*.

Expanse of wings $3\frac{1}{8}$ inches.

Hab. Fergusson Island (*Meek*).

The presence of both sexes of this species in the same collection enables me to describe the male of *D. Comrii*, hitherto, I believe, undescribed. The female specimens in Mr. Meek's collection agree almost exactly with the figure

of *D. Comrii* ♀ in the 'Proceedings of the Zoological Society,' 1878.

My specimen of *D. dascylus* ♀, Godm. & Salv., does not agree with their description of that sex, the band on the anterior wings being browner and entirely divided across the discoidal nervules by an oblique broad black band. If my female specimen is correctly allocated to *D. dascylus*, of which I have little doubt, as it was accompanied by seven or eight males, it is clear that *D. dascylus* (which has been confounded with *D. Comrii*) is a distinct species, the female of which, as in my collection, remains to be described.

Hypolimnas palladius.

♂. *Upperside*: both wings dark velvety brown, anterior wings crossed halfway between the cell and the apex by a broad oblique band of five white spots, divided by the black veins and situate between the subcostal and the lowest median nervules. Posterior wings with an obscure orange-rufous patch near the anal angle, in which is placed a black spot centred with violet; a submarginal row of other black spots is faintly visible, centred with minute violet spots.

Underside. Anterior wings crossed by the white band, wider than on the upperside, and extending between the median nervules nearly to the outer margin; between the lowest median nervule and the submedian nervule is an obscure dark spot, centred with violet. Posterior wings like those of *H. pandarus*, Linn., but the submarginal row of whitish lines is almost obsolete, and the inner edge of the discal tawny band is bordered by an almost white irregular band, widest in the middle, and the middle black spot in the tawny band is small and not centred with white.

♀. *Upperside* paler brown, with the white band on the anterior wings broader than in the male and extending over the subcostal nervules towards the base; a small white spot towards the apex, and a similar spot below the lowest median nervule. Posterior wings with the disk crossed by a broad irregular band of white, narrowing and becoming obsolete towards the costal margin; below this band is a row of black spots centred with white, except the third and fourth spots, the two spots nearest the anal angle partly surrounded by dusky tawny, and the next two bordered outwardly by a whitish space irrorated with black scales; outer margin broadly dark brown, the inner edge of which is sinuate.

Underside paler than above; towards the apex of the anterior wings are three white dots, and the spot above the

submedian nervure is centred with white. On the posterior wings the discal row of spots is smaller than in *H. pandarus*.

Expanse of wings, ♂ $3\frac{3}{8}$, ♀ $3\frac{5}{8}$ inches.

Hab. Fergusson Island (*Meek*).

Nearest to *H. pandarus* and *H. Saundersi*, Wall.

Hypolimnas paleutes.

♂. *Upperside* resembles *H. deois*, Hew., but on the posterior wings the pale discal patch is more widely suffused by violaceous, and the outer edge of the patch is less acutely angulated in the middle; there is only a faint indication of the orange-tawny patch at the anal angle, and there is a distinct submarginal row of spots centred, except the fourth, with violet.

Underside darker than in *H. deois*; the anterior wings are without the pale space in the middle of the costal margin, and, instead of two indistinct pale lines parallel with the outer margin, there is only an indication of one line close to the margin. The posterior wings are dusky brown, except a narrow pale space inside the discal row of spots, which are six in number, centred with violaceous, more conspicuously than in *H. deois*, in which the black spots are centred with white dots; the two spots nearest the anal angle are partly surrounded by dusky tawny; only the spot above the upper median nervule is obsolete, and the row of pale lines near the outer margin of *H. deois* is absent.

♀. *Upperside* dusky brown; a very indistinct, almost invisible, oblique paler band crosses the wings beyond the cell; a white streak at the middle of the costa and a submarginal row of white dots across the disk between the veins, except on either side of the upper median nervule. On the posterior wings is a curved row of black spots across the disk, centred with white, of which the second and sixth are the largest and the fourth the smallest; inside the row of spots between it and the cell is a slight irroration of white scales.

Underside as above, but paler. On the posterior wings the discal row of spots, in which the central spots are much larger, is bordered on either side by a paler dusky space, and the dark outer marginal band is divided by a pale brown sinuate line, divided by the dark veins.

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

Hab. Kiriwini, Trobriands (*Meek*).

Parthenos thesaurinus.

♂. *Upperside* bright brown, less olivaceous than *P. thesaurus*, Mathew. Anterior wings: the apical portion nearly black, the brown streaks and markings becoming nearly obsolete; the submarginal brown bands are much narrower and the discal transverse band of spots is much whiter than in that species. On the posterior wings the three basal dark bands are narrower, the space between them being wider and the lunules in the submarginal band more conical in shape.

Underside browner than in *P. thesaurus*, especially on the posterior wings, in which the oblique band of obscure dusky bars which crosses the disk is brown instead of black, as in *M. thesaurus*, and the pale spaces on either side of the row of dark streaks below the band are less bluish grey and more tinged with brown.

Expanse of wings $2\frac{7}{8}$ inches.

Hab. Santa Cruz (*Woodford*).

This butterfly is considerably smaller than *P. thesaurus*, being nearly the same size as *P. aspila*, Honr.

Tenaris melanops.

♀. *Upperside* white; anterior wings with the lower third from the lowest median nervule, and thence across the cell to the costal margin, and the costal margin broadly to the apex fuliginous grey; the veins, except where crossed by the grey colour, are white. Posterior wings with the costal margin to the apex broadly grey, thence along the outer margin more narrowly grey, until that colour merges in the white lower part of the wings; on the disk, between the median nervules and a little on either side, is a very large diffused fuliginous greyish-black spot, in which, a little above its centre, is situate a large cluster of lavender-coloured scales; at the lower end of this cluster is a pure white spot, and near the outer edge of the black spot is another small lavender spot; near the apex is another small lavender spot surrounded by black. Towards the base the wings are clothed with long yellowish-brown hairs.

Underside. Anterior wings as on the upperside; posterior wings with two large fuliginous brown ocelli, one of which is situate on the margin near the apex and the other on the disk extending over the submedian nervules; both ocelli are centred by a white spot partially surrounded by a cluster of lavender-coloured scales, situate in a circular black zone; outside the zone is an indistinct fuscous ring, outside which,

still in the fuliginous brown area, is a minute white spot on each ocellus.

Expanse of wings 4 inches.

Hab. Sud Est, New Guinea (*Woodford*).

Nearest to *T. affinis*, Kirby.

Elymnias melanthes.

♂. *Upperside* dark fuliginous brown, slightly paler towards the apex of the anterior and the basal third of the posterior wings; on the anterior wings is a curved streak of fuliginous dark blue, slightly metallic, commencing on the costa a little above the end of the cell, but not extending to the apex or outer margin, and gradually fading towards the outer angle. The posterior wings are tinged with the same colour in the apical region, and there are two black spots centred with the same colour on the disk towards the anal angle; one of these spots is situate between the two lowest submedian nervules and is larger than the other spot, which is situate on the other side of that vein.

Underside dusky brown; anterior wings rather densely irrorated with pale scales beyond the cell and in the apical area, the posterior wings being also sparsely dusted with similar scales. Posterior wings with a large, irregular, oblong ovate, fulvous patch extending from a little beyond the middle submedian nervule to near the anal angle; in the patch are situate two large black spots, centred with blue spots, which are double in the lower spot; the fulvous patch is more oblique than in *M. agondas*, Boisd., and other allied species. Abdomen fulvous.

♀. Both wings white; anterior wings with costal margin broadly dusky brown, becoming broader at the apex, thence narrowing along the outer margin, and ceasing below the upper median nervule; inside the dusky brown apical area is a faint indication in certain lights of the blue metallic coloration of the male. Posterior wings with the costal and apical margins broadly dusky brown, which extends partly round the outer margin and becomes dusted with white scales towards the anal angle; there are two large diffused dusky spots towards the anal angle, much larger than in the male and centred with large blue spots, those in the lower spot being double; on the disk towards the apex is an indistinct streak of slightly metallic blue, corresponding with the like coloration of the male.

Underside white, with similar dusky brown marginal bands and veins of that colour; on the posterior wings the dusky

brown spots are represented by a large oblong ovate fulvous patch, in which are situate two black spots centred with blue as in the male.

Expanse of wings $3\frac{3}{8}$ inches.

Hab. Woodlark Island (*Meek*).

Nearest to *E. agondas*, Boisd., and *E. glaucopsis*, Stgr.

Lampides epilectus.

♂. *Upperside* resembles *L. eclectus*, Grose Smith, but on the anterior wings the apex is more broadly greyish black, and on the posterior wings the blue area is more restricted.

Underside: scarcely differs from *L. eclectus*, but on both wings the outer marginal dark area is narrower, the central white area being correspondingly broader.

♀. *Upperside*: anterior wings differ from that sex of *L. eclectus* in having the basal blue area more vivid and extended, and the outer marginal dark area is narrower than in *L. eclectus*, and more broadly margined interiorly with blue.

Underside. The outer marginal dark area of the anterior wings is much narrower; on the posterior wings the inner row of obscure black markings which crosses the disk is situate further apart from the outer row and from the metallic blue lunules which crown the latter.

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

Hab. Fergusson Island (*Meek*).

Holochila lamia.

♂. *Upperside* resembles *H. absimilis*, Feld., but slightly more violaceous; the cilia of the posterior wings are crossed with black at the ends of the veins.

Underside greyish silvery white, with the base of the wings pale greenish blue, which on the posterior wings extends over the basal fourth. Anterior wings with a grey line at the end of the cell and three dark grey lines across the disk, the outermost being on the margin and the two inner ones being sinuate, with the spaces between rather paler than the rest of the wings; in the interspaces between the veins near the outer margin is a row of hastate dark grey markings. The posterior wings are likewise crossed by three dark grey lines, with the interspaces paler than the basal portion of the wings; the outer line on the margin very narrow, the middle line very deeply indented inwardly, and the third line very sinuate; between the two outer lines is a row of spots resembling an inverted T; there is a fourth irregular line

crossing the wings a little beyond the cell and curving round it; two spots and a streak in the cell; one spot above and three spots below the cell nearer the base.

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

Hab. Fergusson Island (*Meek*).

Nearest to *H. absimilis*; on the underside it is quite distinct from that species.

XXIII.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.*

[Plates VI. & VII.]

THE following paper deals with species of *Heterocera* belonging to the families *Epicopiidæ*, *Uraniidæ*, *Epiplemidæ*, and *Geometridæ*. As, however, there are about nine hundred species in the latter family recorded from the region under consideration, it seemed advisable to divide the paper into two parts. In the present instalment, therefore, only the *Boarmiinae* subfamily of *Geometridæ* is referred to.

The arrangement of the list is based on the system of classification adopted by Sir George Hampson, Bart., in his work on Indian *Heterocera* ('Fauna of British India,' *Moths*, iii.), but in some instances Mr. Meyrick's revision of the *Geometrina* of the European fauna (*Trans. Ent. Soc. Lond.* 1892, pp. 53-140) has been followed.

Over one hundred and fifty of the species here enumerated have not, so far as I am aware, been previously described.

Family *Epicopiidæ*.

Genus *EPICOPIA*.

(*Westw. Arc. Ent.* i. p. 17 (1845).)

Epicopia mencia.

Epicopeia mencia, Moore, *Proc. Zool. Soc. Lond.* 1874, p. 578, pl. lxxvii. fig. 8.

I received specimens from Chang-yang, Kiukiang, Omeishan, and Moupin, taken in June and July.

Hab. Central, Eastern, and Western China.

* [We are indebted to the Author for the two Plates and also for contributing largely towards the cost of the extra sheets of letterpress.]

Epicopia Hainesii.

Epicopeia Hainesii, Holl. Trans. Amer. Ent. Soc. xvi. p. 72 (Jan. 1889).

Epicopeia simulans, Leech, Proc. Zool. Soc. Lond. 1888, p. 611, pl. xxxi. fig. 1 (April 1889).

There were specimens from Oiwake and Hakone in Pryer's collection. My native collector captured examples at Hakodate in June and July, and I have received the species from Ichang.

Var. *sinicaria*.

Differs from the type in being fawn-coloured and in the absence of first crimson marginal spot on secondaries.

Five female specimens from Ichang, taken in June.

Distribution. Japan; Central China.

Var. *sinicaria* appears to mimic the pale female form of *Papilio mencius*.

Epicopia philenora.

Epicopeia philenora, Westw. Arc. Ent. i. p. 19, pl. v. fig. 2 (1843).

Epicopeia varunæa, Moore, Proc. Zool. Soc. Lond. 1865, p. 799.

Epicopia philenora, Hampson, Fauna Brit. Ind., Moths, iii. p. 109 (1895).

One female specimen of the *varunæa* form from Moupin, taken in July.

Distribution. Sikhim; Assam (*Hampson*); Western China.

Family **Uraniidæ**.

Genus **ACROPTERIS**.

(Hübner, *Hampson*, Fauna Brit. Ind., Moths, iii. p. 114 (1895).)

Acropterus iphiata.

Micronia iphiata, Guen. Phal. ii. p. 29 (1857).

Micronia pontiata, Guen. l. c.

Acropterus iphiata, Hampson, Fauna Brit. Ind., Moths, iii. p. 116 (1895).

There were specimens from Yokohama in Pryer's collection; I met with the species at Nagasaki, Fushiki, and Gensan in July, and have received it from Kiukiang, Ichang, Chang-yang, and the province of Kwei-chow.

Distribution. Himalayas; Khâsis; Burma (*Hampson*); Japan; Eastern, Central, and Western China.

Genus PSEUDOMICRONIA.

(Moore, Lep. Ceyl. iii. p. 461 (1887).)

Pseudomicronia archilis.*Micronia archilis*, Oberth. Etud. d'Entom. xv. p. 23, pl. iii. fig. 33 (1891).*Pseudomicronia archilis (soror)*, Alph. Rom. sur Lép. vi. p. 53, pl. iii. fig. 1, ♀ (1892).

This species, which was discovered by Mons. Biet at Tachien-lu, was obtained by my collectors in most of the localities they visited in Western China. Alphéraky records it from the province of Kan-Sou, July.

In one form, which so far has been received only from Moupin, the ground-colour and that of all the markings is suffused with brownish.

Hab. Western China.

Genus MICRONIA.

(Guenée, Phal. ii. p. 22 (1857).)

Micronia aculeata.*Micronia aculeata*, Guen. Phal. ii. p. 26, pl. xiii. fig. 8 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 117 (1895).*Micronia gannata*, Guen. *l. c.*

One specimen was received from Huang-mu-chang, where it was taken in July, and I captured one example at Foochau in April.

Distribution. Throughout India, Ceylon, and Burma; Andamans; Java; Borneo; Formosa (*Hampson*); Western China; Foochau.

Genus AUZEA.

(Walker, Cat. Lep. Het. xxv. p. 1487 (1862).)

Auzea obliquaria, sp. n.

Pale brownish grey, tinged with violaceous. Primaries have a fine oblique brown line, angled below costa, before the middle, and a broad oblique olivaceous-brown line from apex to about the middle of the abdominal margin of secondaries; there is a whitish patch sparingly irrorated with fuscous on the costa before apex; this is preceded by an olivaceous-brown cloud, and has a small spot of the same colour on its outer edge. Under surface orange freckled with fuscous: primaries are suffused with purplish grey on the disk, and have a yellowish patch on costa towards apex; a pale oblique line

edged inwardly with blackish from apex: secondaries have two purplish-grey transverse lines.

Expanse 44 millim.

Two female specimens from Chang-yang, June and July.

Hab. Central China.

Family Epiplemidæ.

Genus DECETIA.

(Walker, Cat. Lep. Het. xx. p. 232 (1860).)

Decetia numicusaria.

Decetia numicusaria, Walk. Cat. Lep. Het. xx. p. 95; Hampson, Fauna Brit. Ind., Moths, iii. p. 122 (1895).

I received a specimen from Moupin and one from Omei-shan; both were taken in July.

Distribution. Sylhet (*Hampson*); Western China.

Decetia violacearia, sp. n.

Violet-grey, suffused with brown on the costa and also on the outer marginal area beyond the darker brown oblique line which runs from near apex of primaries to middle of abdominal margin of secondaries; this line is inwardly edged with pale violet; a blackish discal dot on each wing: the primaries have indications of a wavy dusky line before the middle; fringes brown. Under surface similar to above, but the portion within the oblique line is paler on all the wings.

Expanse 36 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Decetia argentilinearia, sp. n.

Olivaceous brown. Primaries have an oblique silvery-grey line, angulated below costa and slightly elbowed inwards above the inner margin; between this line and the base of the wing there are two or three finer wavy and angulated lines; outer marginal area golden brown, with an upright dark brown bar on inner margin: secondaries have two silvery-grey transverse lines on central area and three wavy diffuse lines of the same colour on the outer marginal area, the outermost being on the margin itself. Under surface olivaceous grey; apical third of primaries pale golden, and there is a tinge of the same colour on the outer margin of secondaries. Antennæ pectinated.

Expanse 33 millim.

Two male specimens taken by my native collector at Hakodate in June or July.

Hab. Yesso.

Decetia lilacinaria, sp. n.

Fuscous brown. Primaries speckled with lilacine atoms and suffused with golden brown on outer marginal area; there are two faint lilacine transverse lines, the outer one angled below costa, continued across the secondaries to middle of the margin, where it terminates in a patch of golden brown, and is outwardly bordered with the same colour; discal spot black. All the wings have indications near the inner margin of a dark submarginal band; fringes brown, tipped with greyish and preceded by an interrupted lilacine line. Under surface pale brown, darker towards outer margin; each wing has a dusky double transverse line and a black discal spot; the costa of primaries is edged with pale ochreous, especially towards apex, and there is a large golden-brown patch on outer margin of these wings; the apex of primaries is much produced.

Expanse 40 millim.

One male specimen from the summit of Omei-shan, taken in July.

Hab. Western China.

Genus PARADECETIA.

(Swinhoe, Trans. Ent. Soc. Lond. 1894, p. 164.)

Paradecetia albistellaria.

Decetia albistellaria, Walk. Cat. Lep. Het. xxvi. p. 1522 (1862).

Two male specimens from Ta-chien-lu and two examples of each sex from Chang-yang.

Distribution. Khásis; E. Pegu; Shán States (*Hampson*); Central and Western China.

Genus EPIPLEMA.

(Herr.-Schäffer; *Hampson*, Fauna Brit. Ind., Moths, iii. p. 125 (1895).)

Epiplema moza.

Erosia moza, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 402 (1878); Ill. Typ. Lep. Het. iii. p. 42, pl. li. fig. 7 (1879).

The specimens in Pryer's collection were from Yokohama. I took the species at Nagasaki in May and Gensan in July, and have received it from Chang-yang and Omei-shan, July.

Distribution. Japan; Corea; Central and Western China.

Epiplema morataria, sp. n.

Allied to *E. moza*, Butl., with which it agrees very nearly in marking, but differs very greatly from that species in the contour of the wings. The angle at middle of outer margin of primaries is more pronounced, and there is a very conspicuous lobe at inner angle; both tails of secondaries are longer and thicker.

The transverse lines of primaries are more decidedly angled, especially the first one, and the dark spot on inner margin is almost square and hardly extends beyond the second line. On the secondaries the second transverse line is bordered inwardly with dusky and edged outwardly by a pale reddish-brown line; it is obtusely angled. There is a dusky submarginal line. Under surface fuscous grey, irrorated with brown.

Expanse 34 millim.

One female specimen from Moupin, July.

Hab. Western China.

Epiplema cretacea.

Erosia cretacea, Butl. Trans. Ent. Soc. 1881, p. 414.

There was a male specimen in Pryer's collection and I took a female example at Shimonoseki in July. Butler's type was from Tokio.

Hab. Japan.

Epiplema styx.

Erosia styx, Butl. Trans. Ent. Soc. 1881, p. 416.

Specimens from Oiwake and Fujisan in Pryer's collection. Types from Yokohama.

Hab. Japan.

Epiplema himala.

Erosia himala, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 221 (1880); Ill. Typ. Lep. Het. vi. p. 47, pl. cxii. fig. 9 (1886); Alph. Rom. sur Lép. vi. p. 52 (1892).

Epiplema himala, Hampson, Fauna Brit. Ind., Moths, iii. p. 131 (1895).
Erosia auroguttata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 311, pl. vi. fig. 11.

Several specimens were received from Chang-yang and also from various localities in Western China, July and August.

Alphéraky records the species from the province of Szechuen (taken in August) and Poujade from Moupin.

Distribution. Sikhim; Khásis (*Hampson*); Central and Western China.

Epiplema schidacina.

Erosia schidacina, Butl. Trans. Ent. Soc. 1881, p. 415.

Specimens in Pryer's collection from Oiwake. I met with the species at Hakodate in August, and I have received examples from Omei-shan, Chia-ting-fu, Ta-chien-lu, and Pu-tsu-fong, taken in June and July.

Distribution. Japan; Yesso; Western China.

Epiplema instabilata.

Erosia instabilata, Walk. Cat. Lep. Het., Suppl. xxxv. p. 1646 (1866).
Dirades conchiferata, Moore, Lep. Ceyl. iii. p. 403, pl. clxxxvi. fig. 11 (1887).

Epiplema instabilata, Hampson, Fauna Brit. Ind., Moths, iii. p. 131 (1895).

Three specimens taken at Ningpo by a native collector in July. Two examples were received from Ichang, taken in June and July.

One specimen from Ningpo has the fore wings entirely whitish, with a small black discal spot.

Distribution. India; Ceylon; Solomon Islands; China.

Epiplema plagifera.

Erosia plagifera, Butl. Trans. Ent. Soc. 1881, p. 414.

There were specimens from Yokohama and Gifu in Pryer's collection. I took the species at Foochau in April and in Satsuma in May.

Distribution. Japan; Eastern China.

Epiplema bicaudata.

Erosia bicaudata, Moore, Proc. Zool. Soc. Lond. 1867, p. 643, pl. xxxiii. fig. 12.

One specimen taken by my native collector at Ningpo in June. I received two specimens from Ichang, one from Wassu-kow, and several from Omei-shan and Moupin, taken in June and July.

Distribution. Dharmasála; Sikhim; Khásis (*Hampson*); North, Central, and Western China.

Epiplema nubifasciaria, sp. n.

Creamy white, slightly suffused with blackish on basal two thirds. Primaries have a black-edged brown band beyond the middle, and this is followed by a large irregular blackish-grey cloud, which occupies all but the apical portion

of the outer marginal area and has a slightly curved black bar on its external edge: secondaries have the basal area marked with blackish; central band and cloud beyond similar to those on primaries; discal spot elongate, black. Under surface white; primaries have a large blackish patch on basal half, but this does not extend to inner margin; a narrow blackish band just beyond the middle of the wing, separated from a broader band of the same colour by a narrow space of the ground-colour; secondaries have a blackish discal mark and small blackish spots on basal area, and some large ones and a cloud on outer marginal area.

Expanse 20 millim.

One male specimen from Chang-yang, August.

Hab. Central China.

Closely allied to *E. bicaudata*, Walk.

Epiplema rapha.

Erosia rapha, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 403 (1878); Ill.

Typ. Lep. Het. iii. p. 42, pl. li. fig. 5 (1879).

Several specimens from Oiwake in Pryer's collection. I obtained one example at Hakodate in July.

Hab. Japan and Yesso.

Genus GATHYNIA.

(Walk.; Hampson, Fauna Brit. Ind., Moths, iii. p. 134 (1895).)

Gathynia fasciaria, sp. n.

Primaries brownish, with a darker central fascia, which is indented on its inner edge and bordered with ochreous: secondaries rather darker than primaries, with a dark brown dot on abdominal area towards the base, and a dark brown central transverse line outwardly edged with ochreous; fringes dark grey. Under surface fuliginous grey.

Expanse 18 millim.

One female specimen from Gensan, July.

Hab. Corea.

Genus ATOSSA.

(Moore, Proc. Zool. Soc. Lond. 1874, p. 577.)

Atossa nelcinna.

Atossa nelcinna, Moore, Proc. Zool. Soc. Lond. 1874, p. 577, pl. lxxvii. fig. 7; Elwes, P. Z. S. 1890, p. 381, pl. xxxiv. fig. 1, ♂.

Atossa nelcynna, var. *chinensis*, Leech, Entom. xxiii. p. 83 (1890).

I have a male specimen of this species from Wa-shan, a

female from Chang-yang, and two females from Omei-shan, May, June, and July.

Distribution. N.W. Himalayas (*Hampson*); Central and Western China.

Atossa Leechi.

Atossa Leechii, Elwes, Proc. Zool. Soc. Lond. 1890, p. 381.

A male specimen was received from Huang-mu-chang, one from Omei-shan, another and also a female from Moupin, June and July.

Hab. Western China.

Both these species of *Atossa* exhibit considerable resemblance to *Delias patrua*, Leech, a butterfly occurring in the same localities.

The characters given by Mr. Elwes as separating this species from *A. nelcinna* appear to be constant.

Genus (^{*Parabrazas*} OBERTHÜRIA), nov. (*cf. part II p. 110*)

Palpi porrect, hairy, extending beyond head. Antennæ fasciculate. Primaries with vein 5 from just above the middle of discocellulars, 6 and 7 stalked, as also are 8, 9, and 10. Secondaries with two internal veins and 5 from just above the middle of discocellulars. Outer margin of all the wings rounded; costa of primaries arched at the base.

Type *O. Davidi*.

Oberthüria Davidi.

Abraxas Davidi, Oberth. Ann. Soc. Ent. Fr. 1885, p. ccxxix; Etud. d'Entom. xi. p. 33, pl. iii. fig. 16 (1886).

Five male specimens from Moupin and one from Chia-ting-fu, July.

Hab. Western China.

Oberthüria flavomarginaria, sp. n. (Pl. VI. fig. 7.)

Closely allied to *A. Davidi*, but differing from that species in having much broader and richer yellow borders to all the wings; these borders are traversed by a series of black spots and are inwardly limited by narrower black bands, the black marginal spots are rounder and exhibit less tendency to confluence; the costal area is more deeply yellow and more finely speckled with black; on the secondaries there is no black transverse bar at end of discal cell and the abdominal margin is not suffused with blackish; the body is yellower.

Expanse 50-58 millim.

Three male specimens from Wa-shan, June.

Hab. Western China.

Oberthüria nigromacularia, sp. n. (Pl. VI. fig. 6.)

White; the costa and outer margin of primaries are broadly yellow, the former dotted with black, the latter traversed by two series of black spots and bordered inwardly by a third series; there is an interrupted macular central band, and from this to the inner margin there is a series of five black spots bordering the yellow costal stripe: secondaries are black at the extreme base of the wing, and have large black spots placed as follows:—two confluent about the centre of the wing, a longitudinal series above them, and three contiguous rows on the outer marginal area; the ground between some of these latter is tinged with yellowish. Fringes of primaries black, marked with yellow towards inner angle; of secondaries white. Under surface as above, but the rows of spots on outer marginal area of secondaries are smaller and more distinctly separated. Body yellow, marked with black.

Expanse 50 millim.

Two male specimens from Chang-yang, July.

Hab. Central China.

The black discal markings, absence of yellow border to secondaries and of black on the neurulation at once separate this species from either *A. Davidi* or *A. flavomarginaria*.

Genus PSYCHOSTROPHIA.

(Butl. Ann. & Mag. Nat. Hist. (4) xx. p. 401 (1877).)

Psychostrophia melanargia.

Psychostrophia melanargia, Butl. Ann. & Mag. Nat. Hist. (4) xx. p. 401 (1877); Ill. Typ. Lep. Het. ii. p. 9, pl. xxiii. fig. 7 (1878); Leech, Proc. Zool. Soc. Lond. 1888, p. 612.

There were specimens in Pryer's collection from Nikko and Fujisan. I obtained the species at Tsuruga in July.

Hab. Japan.

Psychostrophia nymphidiaria.

Abraxas nymphidiaria, Oberth. Etud. d'Entom. xviii. p. 34, pl. ii. fig. 28 (1893).

Not uncommon at Chang-yang; Ichang; Moupin; Wanshan, Ta-chien-lu, and Chia-kou-ho. June and July.

Hab. Central and Western China.

Psychostrophia picaria, sp. n. (Pl. VI. fig. 11.)

Male.—Primaries black, with a broad oblique central fascia extending from inner margin to outer extremity of discal cell,

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indented on its upper edge and represented on apical area by an oval spot; below the latter there is a submarginal series of four round spots, also white: secondaries white, with a black central band and a black border on outer margin. Fringes black, marked with white below apex of primaries and just above the middle of secondaries. Under surface as above, but the costa is streaked with yellowish.

Female.—Similar to the male, but the white markings of primaries are wider and the black one of secondaries is narrower.

Expanse, ♂ 33–43, ♀ 45–47 millim.

A long series from Chang-yang and one female specimen from Ichang, June.

Hab. Central China.

The white band on primaries and the black on secondaries are variable in width.

Family Geometridæ.

Subfamily BOARMINÆ.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 139 (1895).)

Genus URAPTERYX.

(Leech; Hampson, *op. cit.* p. 144.)

Urapteryx sambucaria.

Phal. Geometra sambucaria, Linn. Syst. Nat. x. p. 519.

Urapteryx persica, Mén. Cat. Mus. Pet. p. 267 (1832).

? *Urapteryx nivea*, Butl. Journ. Linn. Soc., Zool. xvii. p. 199 (1893).

I took specimens of the var. *persica* in Satsuma in May and at Nagasaki in June. This form is whiter than the type, but it can hardly be called smaller. One of the Satsuma examples expands 68 millim. I did not meet with the species in any other part of Japan, and there were no specimens in Pryer's collection. My native collector obtained the species in the island of Kiushiu.

I received specimens of the type form and also of var. *persica* from Pu-tsu-fong and Omei-shan, but the variety only was obtained in the province of Kwei-chow. The typical specimens from China are rather more striated than is the case in European examples.

Distribution. Europe; Armenia; Amur; Japan; Western China.

Urapteryx latimarginaria, sp. n.

White; the markings on primaries are somewhat similar

to those of *U. costistrigaria*, but the bands, which are fuliginous grey in colour, are narrower, and there are fewer streaks on the costa, and these are confined to the basal area with the exception of a streak between the first transverse band and the short central band; on the outer area of the wing there is a fuliginous grey band, which is very broad towards apex, but tapers slightly to the first median nervule, whence it is continued in slender streaks to inner angle: on the secondaries the transverse band is also narrower and the cloud on outer area is greyish and suffused with paleochreous. Above the tail, which is rather broader and more obtusely produced, there is a large reddish spot, and below it another spot of the same colour; both are ringed with black, and there is an elongated black spot nearer the anal angle. Under surface: markings of upperside reproduced, but the central bands are fainter and narrower and that on outer area much darker; the secondaries have some dark grey shading along outer margin.

Expanse 68 millim.

One male example from Omei-shan, June.

Hab. Western China.

Urapteryx costistrigaria, sp. n.

White; primaries traversed by two rather broad oblique brownish bands, becoming blackish towards costa; a shorter and narrower band between them, commencing in a darker spot on costa and terminating in first median interspace; basal area of costa streaked with dark brown; these streaks are short near the base, but the outermost extend almost to submedian nervure; the outer third is heavily striated and clouded with fuliginous; the costa between the broad bands is also streaked with brownish; fringes brown from apex to just above termination of submedian nervure, and thence white, except where interrupted by continuation of the broad transverse bands: secondaries traversed by an oblique brownish band from fork of subcostal nervure to a large cloud of the same colour on outer area; the abdominal area of the wing is clothed, except towards anal angle, with long silky hairs of a creamy colour; above the tail, which is obtusely produced, there is a reddish spot ringed with black, and below it there is an elongated blackish mark; fringes fulvous brown, except at costal and anal angles. Head snowy white; face brown; collar creamy. Under surface white, discal markings on upper surface of primaries faintly reproduced; outer area broadly fuliginous as far as submedian nervure; the second-

aries are without markings, except on the anal half of outer area in one specimen, where there are some fuliginous streaks and shading.

Expanse 68 millim.

Two male specimens from Omei-shan, taken in June.

Hab. Western China.

Urapteryx ebuleata.

Urapteryx ebuleata, Guen. Phal. i. p. 32 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 145 (1895).

Occurs in July at Pu-tsu-fong, Omei-shan, Kia-ting-fu, and Wa-shan; also at Chang-yang, in June and July.

The specimens, among which are examples of the larger *multistrigaria* form, appear to differ chiefly from *U. sambucaria*, var. *persica*, in being more heavily striated, and may possibly be only extreme forms of that variety.

Hampson (Fauna Brit. Ind., Moths, iii. p. 145) considers *kantalaria*, Feld., *multistrigaria*, Walk., and *Yerburii*, Butl., to be synonymous with *U. ebuleata*. Alphéraky (Rom. sur Léop. vi. p. 52) notes one female specimen of *U. Yerburii* from the province of Szechuen, taken in August.

Distribution. Central and Western China; mountains of Northern India.

Urapteryx similaria, sp. n. (Pl. VI. fig. 3.)

In size and general appearance closely resembles *E. maculicaudaria*, Motsch., but the antennæ of the male are not pectinated, and in both sexes the line on secondaries is straight and the tails rather more prolonged and ornamented with a red and a black spot, the black one being the smaller. In the female the central band on secondaries is interrupted, its lower extremity being represented by a spot.

Expanse, ♂ 50, ♀ 47 millim.

Two specimens, a male from Omei-shan and a female from Chang-yang, July.

Hab. Central and Western China.

Urapteryx subpunctaria. (Pl. VI. fig. 2.)

Urapteryx subpunctaria, Leech, Entom., Suppl. p. 42 (May 1891).

Tristrophis obtusicauda, Warren, Novit. Zool. i. p. 399 (1894).

Two specimens from Oiwake in Pryer's collection.

Superficially resembles *E. maculicaudaria*, Motsch., but the antennæ of the male are not pectinated and the arrangement of the lines above and the spot on the secondaries beneath are dissimilar.

Hab. Japan.

Urapteryx kernaria.

Urapteryx kernaria, Oberth. Etud. d'Entom. xviii. p. 23, pl. ii. fig. 20 (Nov. 1893).

This species was discovered in Western China at Tsé-kou by R. P. Dubernard; my collectors did not meet with it.

Genus EUCTENURAPTERYX.

(Warren, Novit. Zool. i. p. 399 (1894).)

Euctenurapteryx maculicaudaria.

Acæna maculicaudaria, Motsch. Bull. Soc. Nat. Mosc. 1866, i. p. 196.

Euctenurapteryx maculicaudaria, Warren, Novit. Zool. i. p. 399 (1894).

Urapteryx luteiceps, Feld. Reis. Nov., Lep. v. pl. cxxii. fig. 2 (1875).

A series from Yokohama and Oiwake in Pryer's collection. I took specimens at Tsuruga in July and at Hakodate in August.

Among the specimens in Pryer's collection is a remarkable female aberration from Yokohama, in which the usual white colour is replaced by pale greyish brown; the transverse lines are, in consequence of the ground-colour, indistinct, but they are more ferruginous in colour, as also are the fringes and the spots at angle of the secondaries.

Distribution. Japan; Yesso; Eastern China.

Euctenurapteryx parallelaria.

Urapteryx parallelaria, Leech, Entom., Suppl. p. 5 (Jan. 1891).

I have one female specimen which was taken by a native collector at Chang-yang.

Hab. Central China.

Euctenurapteryx nigrociliaria.

Urapteryx nigrociliaris, Leech, Entom., Suppl. p. 5 (Jan. 1891).

Appears to be not uncommon at Huang-mu-chang, in July. It also occurs at Omei-shan and in the province of Kweichow in June.

Hab. Western China.

Genus THINOPTERYX.

(Butl. Journ. Linn. Soc., Zool. xvii. p. 202 (1883).)

Thinopteryx crocoptera.

Urapteryx crocoptera, Koll. Hüg. Kasch. iv. p. 483 (1848).

Thinopteryx striolata, Butl. Journ. Linn. Soc., Zool. xvii. p. 202 (1883).

Thinopteryx crocoptera, Hampson, Fauna Brit. Ind., Moths, iii. p. 148 (1895).

I obtained this species at Nagasaki and in Satsuma in May, at Gensan in July, and I have received specimens from various localities in Central and Western China. There were some examples from Kintokisan and Nikko in Pryer's collection.

It is very variable, and I have intergrades between the typical form and *striolata*, Butl. One specimen has three purple-brown spots on primaries, and a patch of the same colour on secondaries; there is a similar specimen in the series of *T. crocoptera* from Dharmasala in the National Collection at South Kensington.

Distribution. Japan; Corea; North, Central, and Western China; North India.

Thinopteryx prætoraria.

Urapteryx prætoraria, Feld. Reise Nov., Lep. v. pl. cxxii. fig. 13 (1875).

One female example taken at Omei-shan, Western China, in July.

This specimen seems very distinct from *T. crocoptera*, Koll.

Distribution. Sylhet, Western China.

Thinopteryx delectans.

Urapteryx delectans, Butl. Ill. Typ. Lep. Het. ii. p. 45, pl. xxxv. fig. 2 (1878).

Several specimens from Fujisan, Ohoyama, and Nikko in Pryer's collection. I have examples from Ichang, Changyang, Wa-shan, Omei-shan, and the Provinces of Kwei-chow, taken in June and July.

The yellow marking in this species is subject to variation; in typical specimens the wings are thickly sprinkled with yellow, whilst in other examples the yellow is confined to the median area and outer margin.

Distribution. Japan; North, Central, and Western China.

Genus SIRINOPTERYX.

(Butl. Journ. Linn. Soc., Zool. xvii. p. 201 (1883).)

Sirinopteryx rufivinctata.

Urapteryx rufivinctata, Walk. Cat. Lep. Het. xxvi. p. 1747 (1862).

Sirinopteryx rufivinctata, Hampson, Fauna Brit. Ind., Moths, iii. p. 147 (1895).

Several specimens from Moupin, and one example from Changyang, July.

Distribution. Northern India; Central and Western China.

Genus TRISTROPHIS.

(Butl. Journ. Linn. Soc., Zool. vii. p. 199 (1883).)

Tristrophis veneris.

Urapteryx veneris, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 392 (1878);
Ill. Typ. Lep. Het. iii. p. 29, pl. xlvi. fig. 1 (1879).

A fine series from Yokohama and Nikko in Pryer's collection.

The transverse bands of primaries vary in width and the black spots on disk of secondaries are inconstant both as regards size and number.

Hab. Japan.

Genus MYRTETA.

(Walk. Cat. Lep. Het. xxiii. p. 831 (1861).)

Myrteta sinensaria, sp. n. (Pl. VI. fig. 13.)

Near to *M. planaria*, Walk., but rather whiter in the ground-colour; outer third of primaries more heavily suffused and the three transverse lines approach nearer to each other toward inner angle; the three blackish spots towards anal angle of *M. planaria* are in *M. sinensaria* replaced by a sinuate black line, and the two submarginal spots are represented by a blotch.

Expanse 46 millim.

One male example from Moupin, July.

Hab. Western China.

Myrteta angelica.

Myrteta angelica, Butl. Trans. Ent. Soc. 1881, p. 413.

Two specimens from Yokohama in Pryer's collection.

I captured the species at Oiwake in October.

Hab. Japan.

Myrteta tripunctaria, sp. n.

Very near to *M. angelica*, Butl., but whiter, and the three transverse lines of primaries are narrower and more oblique; on the outer edge of the yellow patch at anal angle of secondaries there are three black spots, the middle one the largest, and a short indented black line on its inner edge. On the under surface the neuration is dark coloured; the outer marginal area of primaries is broadly blackish, preceded by a blackish line, and the basal area is suffused with the same colour; above the three blackish spots on outer margin of secondaries there is a blackish patch; submarginal line

blackish, indented above anal angle. Except at anal angle the line at base of the fringes of secondaries is blackish instead of light brown, as in *M. angelica*, and the antennæ are more broadly pectinated than in that species.

Expanse 44 millim.

One male specimen from Moupin, July.

Hab. Western China.

Myrteta sericea.

Orthocabera sericea, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 439 (1879).

Orthocabera brunneiceps, Warren, Proc. Zool. Soc. Lond. 1893, p. 387, pl. xxxi. fig. 23.

Myrteta sericea, Hampson, Fauna Brit. Ind., Moths, iii. p. 152 (1895).

Four specimens from Nikko in Pryer's collection.

Distribution. Sikkim; Khâsis (*Hampson*); Japan.

Myrteta unio.

Acidalia unio, Oberth. Etud. d'Entom. v. p. 50, pl. ix. fig. 12 (1880).

Cabera magna, Butl. Trans. Ent. Soc. 1881, p. 416.

One female specimen in Pryer's collection and I received one example of the same sex from Mr. Manley of Yokohama.

Distribution. Askold; Japan.

Myrteta argentaria, sp. n.

Silvery white. Primaries have a blackish discal spot and are traversed by three dusky bands, the first of which is rather more oblique than the others; submarginal line dusky, parallel with outer margin except towards inner margin, where it terminates close to the inner angle; marginal band dusky. Secondaries have a blackish discal spot and two wavy dusky bands; submarginal band dusky, diffuse on its inner edge; the middle of outer margin is slightly angled and there is a black spot on the angle. Fringes tinged with greyish. Under surface white; all the wings have a black discal spot, and the secondaries have a diffuse dusky submarginal band; in some specimens the primaries also have traces of a dusky submarginal band. Antennæ serrated.

Expanse, ♂ 46, ♀ 48 millim.

Three male specimens and three females from Omei-shan, Pu-tsu-fong, Chia-ting-fu, July.

Hab. Western China.

Genus BAPTA.

(Steph. Ill. Brit. Ent., Haust. iii. p. 294 (1829).)

Bapta bimaculata.

Phalæna bimaculata, Fabr. Syst. Ent. 635 (1775).

Geometra taminuta, Hüb. Geom. fig. 90.

Pseudopanthera bimaculata, Meyrick, Trans. Ent. Soc. 1892, p. 117.

Bapta subnotata, Warren, Novit. Zool. ii. p. 127 (1895).

I took specimens at Gensan in June and there were a few examples in Pryer's collection from Oiwake. My native collector obtained the species at Hakodate.

Distribution. Europe; Altai; Japan; Yesso; Corea.

Bapta punctata.

Phalæna punctata, Fabr. Syst. Ent. 637.

Geometra temerata, Hübn. Geom. fig. 91.

Pseudopanthera punctata, Meyrick, Trans. Ent. Soc. 1892, p. 117.

Asthera sancta, Butl. Trans. Ent. Soc. Lond. 1881, p. 413.

There were a few specimens from Oiwake in Pryer's collection, and I received examples from Hakodate taken in June.

Two of the specimens from Oiwake and one from Hakodate are slightly suffused with pale greyish, with the markings more or less obliterated, and are almost identical with an example from Germany in my collection. On the other hand, a specimen from Oiwake has the markings as dark and well defined as any in my European series.

Distribution. Europe; Ural; Amur; Japan; Yesso.

Bapta mytylata.

Corycia mytylata, Guen. Phal. ii. p. 58 (1857).

Bapta mytylata, Hampson, Fauna Brit. Ind., Moths, iii. p. 155 (1895).

There was a series from Oiwake and Yesso in Pryer's collection. I received a specimen from Wa-shan, taken in June, one from Huang-mu-chang and one from the Province of Kwei-chow, taken in July.

Distribution. N.W. Himalayas; Thundiáni; Punjab; Sikhim; Khásis (*Hampson*); Japan; Yesso; Western China.

Bapta fœdata.

Bapta fœdata, Warren, Novit. Zool. i. p. 404 (1894).

Warren describes this species from Japan.

I have one male specimen from Chang-yang and four females from Ta-chien-lu, taken in June and July.

Differs from *B. mytylata*, Guen., in having the upper surface more densely powdered with fuscous, and in the discal area of under surface of primaries being suffused with fuscous.

Distribution. Japan (*Warren*); Central and Western China.

Bapta platyleucata.

Acidalia platyleucata, Walk. Cat. Lep. Het., Suppl. xxxv. p. 1628 (1866).

Bapta platyleucata, Hampson, Fauna Brit. Ind., Moths, iii. p. 155 (1895).

Three specimens from Pu-tsu-fong, taken in June and July.

Distribution. Kashmir; Sikhim; Khásis (*Hampson*); Western China.

Bapta sacra.

Corycia sacra, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 404 (1878); Ill. Typ. Lep. Het. iii. p. 44, pl. li. fig. 11 (1879).

Specimens from Yokohama in Pryer's collection.

I captured this species in Satsuma and at Nagasaki in May, at Gensan in June, and Mr. Smith took examples at Hakone in August. My native collector also obtained specimens in the latter month at Hakodate. Specimens have been received from Ichang and Omei-shan, taken in July.

Distribution. Japan; Yesso; Corea; Central and Western China.

Bapta candidaria, sp. n.

Male.—White, with a black discal dot on each wing. Primaries traversed by two dusky macular bands; the secondaries have one macular band. Under surface white; primaries slightly suffused with fuscous on basal two-thirds, and traversed by a dusky band which does not extend to inner margin; all the wings have a black discal dot.

Female.—Similar to the male, but the transverse markings are more distinct; there is a series of black dots on the outer margin of both surfaces of each wing, and the secondaries have a macular band on the under surface.

Expanse ♂ 30, ♀ 34 millim.

One example of each sex from Oiwake in Pryer's collection.

Hab. Japan.

Allied to *B. sacra*, Butl.

Bapta nigropunctaria, sp. n.

Silvery white powdered with fuscous. All the wings have dusky postmedial and submarginal bands and a blackish discal spot. Primaries have an elongate velvety black spot on costa just before the apex; costa pale brown. Fringes silvery, preceded by a pale brown line. Under surface

silvery white, faintly suffused with fuscous-grey, except on inner marginal area of primaries; fringes tipped with fuscous.

Expanse 36 millim.

Two male specimens. Moupin and Ta-chien-lu. July.

Hab. Western China.

Bapta distans.

Bapta distans, Warren, Novit. Zool. i. p. 404 (1894).

Seven specimens (1 ♂, 6 ♀) from Omei-shan, Wa-shan, Pu-tsu-fong, Che-tou, and Chang-yang, June.

Distribution. Japan (Warren); Central and Western China.

Bapta clarissa.

Iodis clarissa, Butl. Ill. Typ. Lep. Het. ii. p. 49, pl. xxxvi. fig. 4 (1878).

Pseudopanthera clarissa, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 117.

A nice series from Yokohama in Pryer's collection.

I obtained specimens in Satsuma in May and at Nagasaki in June, and my native collector took the species at Hakodate and in the island of Kiushiu.

Hab. Japan; Yesso; Kiushiu; Amur.

Bapta inamata.

Acidalia inamata, Walk. Cat. Lep. Het. xxii. p. 755 (1861).

Noreia inamata, Moore, Lep. Ceyl. iii. p. 406, pl. 185. fig. 4 (1887).

Acidalia simpliciaris, Walk. l. c. xxiii. p. 793 (1861).

Bapta inamata, Hampson, Fauna Brit. Ind., Moths, iii. p. 154 (1895).

I obtained a female specimen in Satsuma which appears to be referable to this species, but the transverse line is rather deeper in colour on all the wings.

Distribution. Sylhet; Nilgiris; Ceylon; Sumatra; Borneo (*Hampson*); Japan.

Bapta ochrilinea.

Bapta ochrilinea, Warren, Novit. Zool. i. p. 404 (1894).

Hab. China.

I have not seen the type of this species.

Genus ANGERONA.

(Dup. Léop. iv. p. 181.)

Angerona prunaria.

Phal. Geometra prunaria, Linn. Syst. Nat. x. 520.

Geometra prunaria, Hübn. Geom. figs. 122, 123.

Angerona prunaria, Dup. vii. pl. 147. figs. 1, 2; Guen. *Phal.* i. p. 115.

Euchlæna prunaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 112.

Several specimens from Yokohama, Oiwake, and Yesso in Pryer's collection. I took the species at Gensan in June.

Most of the European forms are represented in Japan, but there is a wider range in the size of the specimens—the smallest example being only 36 millim. in expanse, whilst the largest measures 74 millim.

Distribution. Europe; Amur; Corea; Japan; Yesso.

Angerona nigrisparsa.

Angerona nigrisparsa, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 370 (1879).

A few specimens from Yokohama and Oiwake in Pryer's collection. I captured the species at Sendai in September. Mr. Smith met with it at Hakone and Myianoshita in August.

Hab. Japan.

Genus METROCAMPA.

(Latr.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 111.)

Metrocampa grandinaria.

Angerona grandinaria, Motsch. Etud. Ent. p. 37 (1860).

Ennomos serrata, Brem. Lep. Ost-Sib. p. 100, pl. viii. fig. 11 (1864).

Metrocampa serrata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 112.

There were several specimens in Pryer's collection, and I have received examples from Mr. Manley of Yokohama. The species also occurs at Ohoyama, Nikko, Tokio, Oiwake, and Kintokisan.

Distribution. Amur; Japan.

Metrocampa prattiararia.

Cidaria prattiararia, Leech, Entom., Suppl. p. 51 (May 1891).

Cidaria prattiararia, var. *unicoloraria*, Leech, l. c. p. 52.

Several specimens from Oiwake in Pryer's collection.

I received one male specimen and two females from Omeishan; one male from Moupin and one example of each sex from Chang-yang: July.

The Chang-yang specimens are rather redder in colour than the others in the series, and the Moupin male is brownish tinged with purplish. All the Chinese specimens are larger than the Japanese.

Distribution. Japan; Central and Western China.

Genus CABERODES.

(Guen.; Hampson, Fauna Brit. Ind., Moths, iii. p. 158 (1895).)

Caberodes simplicior.

Somatina simplicior, Butl. Trans. Ent. Soc. 1881, p. 412.

Cidaria pallidaria, Leech, Entom., Suppl. p. 51 (1891).

There were two specimens, labelled Fujisan and Nikko,

in Pryer's collection, and my native collector took an example in Kiushiu. Butler's type was from Tokio.

Hab. Japan and Kiushiu.

Genus NUMERIA.

(Dup. Lép. iv. p. 107.)

Numeria pulveraria.

Phal. Geometra pulveraria, Linn. x. 521; Clerck, Icon. pl. v. figs. 6, 9.

Metrocampa pulveraria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 112.

Numeria japonica, Butl. Trans. Ent. Soc. Lond. 1881, p. 418.

A fine series in Pryer's collection under the name *N. japonica*.

My native collector obtained specimens at Gensan in July and also in the island of Kiushiu. I received one example from Chang-yang taken in July.

The specimens from Gensan and Kiushiu are very small.

Distribution. Europe; Ural; Altai; Amur; Japan; Kiushiu; Corea.

Genus ENDROPIOIDES.

(Warren, Novit. Zool. i. p. 463 (1894).)

Endropioides abjecta.

Endropia abjecta, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 371 (1879).

Endropia Snelleni, Hedem. Horæ Soc. Ent. Ross. xvi. p. 46, pl. x. fig. 1 (1881).

A fine series from Yokohama, Fujisan, Gifu, and Yesso in Pryer's collection.

Snelleni, Hedem., is certainly a dark form of *E. abjecta*, Butl. The species is variable as regards coloration, and ranges from dark reddish brown through pale reddish brown to a pale whity brown with reddish-brown outer margins. In some of the dark specimens the wings are unicolorous; in others the basal area of primaries is paler.

Meyrick (Trans. Ent. Soc. Lond. 1892, p. 112) places *Snelleni* in *Metrocampa* and considers it synonymous with *indictinaria*, Brem.

Distribution. Japan; Yesso; Askold.

Genus EPHORIA.

(Meyrick, Trans. Ent. Soc. Lond. 1892, p. 109.)

Ephoria arenosa.

Epione arenosa, Butl. Ill. Typ. Lep. Het. ii. p. 46, pl. xxxv. fig. 1 (1878).

Ephoria arenosa, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 109.

There was a fine series from Oiwake and one specimen from Yesso in Pryer's collection.

Butler's type was from Hakodate.

Distribution. Amur (*Graeser*); Japan; Yesso.

Ephoria leda.

Epione leda, Butl. Ill. Typ. Lep. Het. ii. p. 46, pl. xxxv. fig. 5 (1878)
(♂).

Epione strenioides, Butl. l. c. fig. 6 (♀).

Epione lachrymosa, Butl. Trans. Ent. Soc. 1881, p. 402 (var. ♂).

Epione ossea, Butl. l. c. (var. ♀).

Calcaritis Oberthuerii, Butl. *op. cit.* p. 597 (var. ♀).

Therapis straminea, Butl. *op. cit.* p. 401 (var. ♀).

There was a fine series of each sex of this species from Ohoyama and Nikko in Pryer's collection, including examples of the forms *lachrymosa* and *ossea*.

I have received a male which approaches the *strenioides* form from Chang-yang and a female of the same form from Chia-ting-fu, both taken in July.

Distribution. Japan; Central and Western China.

Ossea and *Oberthuerii* appear to be forms of the female, and *lachrymosa* a form of the male, while *straminea* is a modification of the *ossea* form in which all the transverse lines are absent.

Genus SCARDAMIA.

(Guen. Phal. i. p. 89 (1857).)

Scardamia metallaria.

Scardamia metallaria, Guen. Phal. i. p. 89 (1857).

Laginia bractearia, Walk. Cat. Lep. Het. xx. p. 245 (1860).

Scardamia aurantiacaria, Brem. Lep. Ost-Sib. p. 72, pl. vi. fig. 15 (1864).

Scardamia taprobanes, Feld. Reise Nov. pl. cxxiii. fig. 2 (1875).

Appears to be plentiful in the island of Kiushiu. I met with it at Nagasaki and in the province of Satsuma, and have received it from Gensan in Corea.

In Western China it occurs at Moupin and in the province of Kwei-chow; and in Central China at Ichang and Chang-yang.

Distribution. Central and Western China; Japan; Corea; Eastern Siberia; India; Ceylon; Java.

Scardamia obliquaria, sp. n.

Similar to *S. metallaria*, Guen., but the first transverse line of primaries is elbowed above the middle, and the second

line is oblique from near apex; the marginal area is deeper orange than other portions of the wings.

Expanse 28 millim.

One female specimen taken by myself at Gensan in July.

Hab. Corea.

Genus PERATOPHYGA.

(Warren, Novit. Zool. i. p. 407 (1894).)

Peratophyga ærata.

Acidalia ærata, Moore, Proc. Soc. Lond. 1867, p. 643.

Ephyra grata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 438 (1879).

Peratophyga ærata, Hampson, Fauna Brit. Ind., Moths, iii. p. 164 (1895).

There were specimens in Pryer's collection from Yokohama, and I met with the species at Nagasaki. It occurs also at Chang-yang, Kiukiang, Moupin, Pu-tsu-fong, Ta-chien-lu, and Omei-shan.

Distribution. Eastern, Central, and Western China; Japan; Himalayas.

This species seems to vary considerably in size and in the intensity of the markings.

Genus STEGANIA.

(Guen.; Hampson, Fauna Brit. Ind., Moths, iii. p. 164 (1895).)

Stegania irroraria, sp. n. ^{*Nymphaea* Harr. Nov. Zool. I. p. 406 (1894)} _{1 sp. Add. & Desc. Sin. etc. xx}

Pale ochreous, irrorated with ferruginous. Primaries have the costa purplish brown, and there is a narrow curved and recurved band of the same colour from one fourth before apex to inner angle; from the lower curve of this band there is a broad purplish-brown bar extending to the marginal line, which is of the same colour. Secondaries have a narrow purplish-brown band on outer margin. All the wings have a blackish discal dot and a diffuse ferruginous-brown central band, the latter is often interrupted and sometimes entirely absent. Fringes of the ground-colour. Under surface rather paler than above, with similar markings but darker in colour.

Expanse 21 millim.

I obtained a nice series at Nagasaki in May, and I have received specimens from Ningpo and Gensan.

Distribution. Kiushiu; Corea; and N.E. China.

Allied to *S. bilineata*, Butl.

Genus SYNEGIA.

(Guen. Phal. i. p. 423 (1857).)

Synegia pardaria.

Anisodes pardaria, Guen. Phal. i. p. 420 (1857).

Synegia pardaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 170 (1895).

Occurs at Chang-yang, Moupin, and Omei-shan.

Distribution. Khásis; Ceylon; Borneo (*Hampson*); Central and Western China.

Synegia hadassa.

Anisodes hadassa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 400 (1878); Ill. Typ. Lep. Het. iii. p. 38, pl. L. fig. 5 (1879).

Synegia inconspicua, Butl. Trans. Ent. Soc. 1881, p. 412.

Syntaracta hadassa, Warren, Novit. Zool. i. p. 403 (1894).

Both forms of this species occur commonly in the island of Kiushiu. There was one example of the *inconspicua* form in Pryer's collection, and I received one specimen of the same form from Yokohama, several from Hakone, and one from Chang-yang.

In the series from Kiushiu there are forms connecting the type and *inconspicua*, and others which are broadly suffused with leaden grey.

Distribution. Japan; Kiushiu; Central China.

Synegia omissa.

Syntaracta omissa, Warren, Novit. Zool. i. p. 409 (1894).

One example from Chow-pin-sa, Western China. I have also received it from the Loochoo Islands and from Kiushiu; and there was a specimen in Pryer's collection.

Distribution. Loochoo Islands; Japan; Western China.

Synegia esther.

Synegia esther, Butl. Trans. Ent. Soc. Lond. 1881, p. 411.

There were several specimens in Pryer's collection. I have also received examples from Chang-yang, Omei-shan, and the island of Kiushiu.

The Chinese specimens are lighter in colour and the transverse lines are narrower and not diffused.

Distribution. Japan; Kiushiu; Central and Western China.

Synegia rosearia, sp. n. ^{*Synegia rosearia* Warren. Novit. Zool. I, 410 (1894)} ~~cf. *hadassa* in Warren's *Novit. Zool.* p. 245~~

Male.—Primaries yellowish; basal half freckled with rosy and traversed by a violet-grey band, which is elbowed below costa; the outer half has a broad violet-grey band, from the inner edge of this there is a suffusion of the same colour towards the base of the wing and a diffuse projection towards the middle of outer margin; a violet-grey streak from apex almost touches the band, and there are some marks of the same colour towards inner angle. Secondaries yellowish; basal patch violet-grey; beyond, the wing is traversed by

more or less confluent rosy waved lines, and the outer margin has a diffuse violet-tinged rosy band. Under surface pale whitish brown, with the markings of upperside reproduced in dusky violet-grey.

Female.—The discal area of primaries is more suffused with violet-grey.

Expanse, ♂ 31, ♀ 34 millim.

One male specimen from Ichang, a male from Omei-shan, and a female from Moupin: June and July.

Hab. Central and Western China.

Genus SELENIA.

(Hübner, Verz. Schmett. p. 292 (1816).)

Selenia tetralunaria.

Geometra tetralunaria, Hufn. Berl. Mag. iv. p. 506 (1769).

Selenia illustraria, Hübner, Verz. Schmett. p. 293; Guen. Phal. i. p. 154.

Selenia tetralunaria, var. *æstiva*, Staud. Cat. p. 157, = var. A, Guen. l. c. p. 155.

My native collector took a female specimen of the typical form at Hakodate in June, and I captured four examples of var. *æstiva* at that place in August.

Distribution. Europe; Yesso.

Selenia pallidaria.

Selenia pallidaria, Leech, Entom., Suppl. p. 43 (May 1891).

There was one female specimen from Yesso in Pryer's collection.

Hab. Yesso.

Selenia adustaria. (Pl. VII. fig. 7.)

Selenia adustaria, Leech, Entom., Suppl. p. 42 (May 1891).

Selenia adustaria, var. *fusca*, Leech, l. c.

Three specimens from Yesso in Pryer's collection. One of these is probably an individual of the second brood.

Hab. Yesso.

Selenia sordidaria, sp. n.

Very pale whitish brown, irrorated and marked with brownish on costa of primaries; all the wings have two thin brownish transverse lines. Under surface as above, but there is an ochreous lunular patch freckled with brownish on apex of primaries, and the area of secondaries between the outer line and the base of the wing is tinged with ochreous and

speckled with brownish; discal spots black, that on primaries linear.

Expanse 48 millim.

One male specimen from Ichang, April.

Hab. Central China.

Selenia (?) *crenularia*, sp. n.

Pale primrose-yellow. Basal area of primaries pinkish on the costa and limited by a dingy olive band with irregular edges, commencing as a brown spot on costa; there are some marks of the same colour within the band; beyond there is an interrupted macular, dingy olive band, the costal spot brown; the outer marginal area is limited by a pink line and suffused on the lower portion with the same colour. Secondaries have a dark discal spot, and the outer marginal area agrees with that of the primaries. The outer margins of all the wings are highly crenulate, and the fringes are olive. Under surface similar to the upperside, but the yellow is brighter and the secondaries are sprinkled with pinkish on costa, and the abdominal area is whitish. Antennæ with short ciliæ.

Expanse 50 millim.

One male specimen from Ta-chien-lu, May.

Hab. Western China.

Selenia (?) *bilinearis*, sp. n.

Whity brown, with a faint tinge of pink. Primaries have two oblique dark transverse lines—the first is angulated on costa, edged inwardly with whitish, and limits the brownish basal area; the second line traverses an irregular brownish band and is outwardly edged with whitish; the outer margin is clouded with brownish below apex and above inner angle, and there are some smaller marks of the same colour between the clouds. Secondaries have a dark transverse line agreeing with the outer one of primaries, and the ground-colour is obscured with brownish, except on costal and submarginal areas. Fringes of the ground-colour suffused and chequered with darker. Under surface: primaries bright yellow, paler on costa and inner margin; there are two transverse lines as above; secondaries paler, with two dark transverse lines approximating on inner margin.

Expanse 36 millim.

One male specimen from Chang-yang, June.

Hab. Central China.

Genus PERICALLIA.

(Steph. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 223 (1895).)

Pericallia distans.*Hygrochroa distans*, Warren, Novit. Zool. ii. p. 143 (1895).

There was a specimen from Yesso in Pryer's collection. Mr. Smith took a male specimen at Hakone in August, and my native collector obtained one in the island of Kiushiu. I received one female from Omei-shan, taken in July.

In the Chinese example the transverse line is blacker and more conspicuous than in the Japanese specimens. The Kiushiu specimen is only 32 millim. in expanse.

Distribution. Japan ; Yesso ; Kiushiu ; Western China.

P. distans is very close to *P. syringaria* from Europe, and is possibly only an Asiatic form of that species. It may be referable to *P. parva*, Hedem.*, from Amurland.

Pericallia marmorataria, sp. n. (Pl. VI. fig. 15.)

Greyish-white, with a faint pinkish tinge. Basal patch of primaries reddish-grey, clouded with darker and limited by a whitish grey-edged curved line ; central line deep brown, acutely angled below costa, slightly curved to first median fork, where it passes through a violet-brown cloud, then oblique to inner margin ; between the central line and the whitish apex of the wing there is a grey-brown patch on costa intersected by a whitish stripe, and from the lower end of this last a thin brown curved line runs to a grey-brown cloud on inner margin. Secondaries are traversed by two brown lines, the outer one very fine and dotted with blackish on the nervules ; beyond, the outer marginal area is clouded and suffused with greyish brown and traversed by a wavy line of the ground-colour. Fringes brown. Under surface : colour as above ; primaries have a brownish basal patch and a diffuse central line, the last is slightly angulated below costa and followed by a brownish patch, which is intersected by a whitish streak that unites with a whitish submarginal line, the lower end of the submarginal line is bordered by a brownish cloud, and there is another cloud of the same colour on the middle of outer margin ; secondaries clouded with brownish at the base, discoidal spot blackish, other markings correspond with those of upperside, but the abdominal portion of central line is reddish brown.

Expanse 40 millim.

* Horæ Soc. Ent. Ross. xvi. p. 45 (1881).

One male specimen from Chang-yang, July.

Hab. Central China.

This species is very similar to *P. syringaria*, Linn., in colour and approaches the Japanese *P. distans*, Warren.

Pericallia productaria, sp. n.

Light brown, striated and clouded with darker. Primaries have a brownish subbasal line elbowed below costa and a central brown fascia, the outer edge of the latter is blackish and has an obtuse projection extending to the indistinct pale submarginal line; costa and outer margin with paler patches tinged with lilacine. Secondaries have a central fascia which appears to be a continuation of that on primaries, but the projection on outer edge is less pronounced and there are two indentations below it. All the wings have a black discal spot, that on primaries rather linear. Fringes crenulate, brown marked with paler, and preceded by a brown line. Under surface ochreous, striated with reddish brown; all the wings have a blackish discal spot and a purplish-brown central line, the latter, on secondaries, is bordered with purplish towards abdominal margin; there is a dusky transverse shade on primaries from costa to median nervure. Vertex of head whitish.

Expanse 36 millim.

One male specimen from Wa-shan, May.

Hab. Western China.

Allied to *P. albifrons*, Moore.

Pericallia olivaria, sp. n.

Pale brown, striated and suffused with olivaceous; beyond the black discal spot there is an olive band crossing all the wings, the inner edge of this band is diffuse and the exterior elbowed below costa of primaries and obtusely angled on secondaries; there are indications of a pale wavy submarginal line on each wing intersecting an olivaceous cloud towards the inner and anal angles respectively; the apex of primaries and outer angle of secondaries are also clouded with olivaceous; secondaries have a blackish discal spot and there is a dark olive spot in the middle of submarginal line and a curved one at the costal end of the same line. Under surface yellow, powdered with reddish on inner area of primaries; outer marginal area of all the wings brownish, clouded with yellow towards apex and outer angle, and with greyish white towards inner and anal angles, the limiting line is dark brown edged outwardly with whitish.

Expanse 40-42 millim.

Four male specimens from Moupin, July.

Hab. Western China.

Pericallia crenularia, sp. n.

Brown tinged with lilacine. Primaries have a subbasal dusky line, curved towards costa and again towards inner margin; a concolorous central fascia outlined in brownish, the inner edge almost straight and the outer edge obtusely angled below costa and then inwardly oblique; submarginal line interrupted, most distinct towards costa. Secondaries have a dusky, wavy, central line, edged inwardly with brownish and preceded by an obscure brownish shade and discal spot; submarginal line indistinct. Under surface yellow; outer marginal area limited by a strong blackish line. Fringes brown, crenulate. Vertex of head pure white.

Expanse 40 millim.

One male specimen from Omei-shan, July.

Hab. Western China.

Pericallia latimarginaria, sp. n.

Pale brown. Primaries: basal area suffused with darker and limited by a curved, wavy, blackish line; outer line blackish, parallel with outer margin as far as third median nervule, then turned inwards and curved from second to first median nervule, from which point it runs almost straight to inner margin, this line traverses a brownish shade which tapers from inner margin to costa; there is a brownish cloud on the outer margin below apex, and the space between this and the transverse shade is tinged with pinkish. Secondaries have the outer half brownish, tinged with pinkish towards margin, and traversed by a bidentate blackish line. All the wings have a black discal spot and an ill-defined, shaded, pale submarginal line. Under surface yellow; outer marginal area clouded with greyish brown, limited by a dark line and marked with whitish at angle of each wing; discal spots and transverse lines as above. Vertex of head white.

Expanse 36-40 millim.

Several specimens of each sex from Chang-yang and from Moupin, June and July.

Hab. Central and Western China.

Pericallia variaria, sp. n.

Pale greyish-brown, tinged with pinkish, freckled with fuscous and clouded with the latter colour, especially on the

basal area of secondaries and between the transverse lines of primaries. There are two transverse lines on primaries: the first is blackish, elbowed below costa, and slightly indented above inner margin; the second is rather oblique, double, except at each extremity, enclosing a paler area; beyond the second line there is a blackish quadrate blotch, the centre of which is filled in with pinkish; discal spot black. Secondaries have a black discal spot and an olivaceous crenulate band; submarginal band serrated, blackish, but not well-defined towards costa. Fringes fuscous, tinged with olivaceous. Under surface violet-grey, clouded and suffused with fuscous; primaries have a dusky band, elbowed below costa, before the middle, and a ferruginous-brown band bordered with darker beyond the middle; the space between these bands is marked with creamy white; submarginal line whitish; a broad and diffuse ferruginous patch extends from black discal spot to submarginal line, which it obscures at this point; secondaries have the basal area marked with creamy white: the transverse band appears to be a continuation of the outer one on primaries; submarginal band as above but dusky in colour. Outer margin of the wings, especially of secondaries, crenulate.

Expanse 36 millim.

One male specimen from Chia-ting-fu, July.

Hab. Western China.

Pericallia testacea.

Pericallia testacea, Butl. Trans. Ent. Soc. 1881, p. 405.

There were several specimens from Yesso in Pryer's collection. Fenton took the species at Tokio.

Hab. Japan and Yesso.

Genus XYLOSCIA.

(Warren, Novit. Zool. i. p. 462 (1894).)

Xyloscia subspersata.

Hemerophila subspersata, Feld. Reise Nov., Lep. v. pl. cxxv. fig. 16 (1875).

Xyloscia subspersata, Warren, Novit. Zool. i. p. 462 (1894).

Several specimens from Oiwake and Yokohama in Pryer's collection. I captured a female example at Gensan in July.

Hab. Japan and Corea.

Xyloscia biangularia, sp. n. (Pl. VI. fig. 5.)

Pale brown, sparingly irrorated with blackish; the basal

area of primaries and outer marginal area of all the wings suffused with violaceous brown. On the primaries the blackish line limiting the basal area is biangulate below costa and very oblique from median nervure to inner margin; outer line oblique, blackish, appearing to commence below apex in the undulated and diffuse blackish submarginal line and preceded by a slightly wavy brown line, which limits the outer marginal area. Secondaries have a brown central line followed by a blackish one parallel with it; submarginal line diffuse, blackish; all the wings have a black discal dot, but that on secondaries most conspicuous. Under surface similar to above, but the basal two-thirds of secondaries paler.

Expanse 37 millim.

One male specimen from Chang-yang, June.

Hab. Central China.

Closely allied to *X. subsersata*, Feld., but the transverse markings rather different, the outer line on primaries terminates on outer margin below the apex; outer margin of secondaries is slightly crenulate, with a distinct projection above the middle.

Genus *APERICALIA*, nov.

Palpi porrect, densely hairy, extending considerably beyond the frons. Antennæ of male bipectinated to apex. Posterior tibiæ not dilated, with all spurs present. Primaries have the outer margin slightly concave below apex, angled at fourth vein, thence oblique. Secondaries have the outer margin slightly angled at middle. Venation similar to that of *Pericallia*.

Type *A. bilinearia*, sp. n.

Apericallia bilinearia, sp. n.

Primaries whitish grey, tinged with lilacine and freckled and clouded with fuscous; the central area is traversed by two dusky-brown, almost blackish, lines: the inner one very slightly curved and the outer one oblique and followed by two blackish spots. Secondaries pale whitish brown, powdered with fuscous, and traversed by a dark brown line, which tapers towards but does not attain the costa. Fringes brown on primaries, grey on secondaries, merging into brown at anal angle. Under surface ochreous brown, freckled with blackish; transverse lines and markings generally as above, but the outer line of primaries is followed by a ferruginous patch on costa; the secondaries are whiter and have

a diffuse ferruginous central band which obscures the transverse line.

Expanse 36–40 millim.

Four male specimens and three females from Pu-tsu-fong and Moupin, June and July.

Hab. Western China.

Genus *HETEROCALLIA*, nov.

Palpi extending beyond the frons, clothed with long hair; antennæ of male setaceous; hind tibiæ dilated, all spurs present. Primaries with apex slightly produced, outer margin obtusely angled at middle. Secondaries with outer margin rounded, slightly emarginate above middle. Venation similar to that of *Pericallia*.

Type *H. truncaria*, sp. n.

Heterocallia truncaria, sp. n. (Pl. VI. fig. 1.)

Whitish-grey, tinged with violaceous, irrorated and clouded with fuscous. Primaries have three transverse dark-brown or blackish lines, the first not always clearly defined, all are curved below costa, and the third is recurved and dentate before inner margin; following the third line is a fuscous-brown band marked with darker brown below the upper curve, which is also deeper brown; submarginal line oblique, white towards costa, where it is interrupted and adjoins the fuscous-brown band. Secondaries have three fuscous bands, but these are only well-defined on the abdominal area. Fringes greyish, preceded by a series of black dots. Under surface pale greyish, irrorated with fuscous and suffused on the disk with ochreous; apical area of primaries clouded with brownish, submarginal line represented by three white dots: secondaries have two diffuse transverse bands, these are brown inclining to blackish on abdominal area, the outer one with a small elongate blackish spot about the middle.

Expanse 42 millim.

Occurs at Moupin, Ta-chien-lu, Pu-tsu-fong, and Che-tou in July. I received twelve specimens, including both sexes.

Hab. Western China.

Genus *PSYRA*.

(Walk.; Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 221 (1895).)

Psyra rufolinearia, sp. n.

Whitish brown, with a faint ochreous tinge on the disk and irrorated with fuscous. Primaries have a sinuous red-

dish line, dotted with black on the nervures, before the middle; this does not extend to the costa, where it is represented by a black dot and an oblique reddish line, followed by a series of black dots on the nervules beyond the middle; there is also a short, interrupted blackish band from just before apex, and a similar one towards inner margin; the oblique line together with series of black dots are continued on the secondaries, and all the wings have a blackish discal dot and a marginal series of black dots. Fringes of the ground-colour. Under surface whitish-brown, irrorated with fuscous; outer marginal area with fuscous border, most clearly defined on the primaries; the secondaries have a dusky central line and two series of blackish dots, the outer series connected by a dusky lunulated line; marginal and discal dots as above.

Expanse 60 millim.

One female specimen from Moupin, July.

Hab. Western China.

Psyra cuneata.

Psyra cuneata, Walk. Cat. Lep. Het. xxi. p. 483 (1860); Hampson, Fauna Brit. Ind., Moths, iii. p. 223 (1895).

One male specimen from Wa-shan, two females from Putsu-fong, and a male from Japan in Pryer's collection.

Distribution. N.W. Himalayas; Sikhim; Khásis (*Hampson*); Japan; Western China.

Genus FASCELLINA.

(Walk. Cat. Lep. Het. xx. p. 215 (1860).)

Fascellina plagiata.

Geometra plagiata, Walk. Cat. Lep. Het. xxxv. p. 1601 (1866).

Fascellina plagiata, Hampson, Fauna Brit. Ind., Moths, iii. p. 226 (1895).

I have specimens from Ichang, Chia-ting-fu, Ta-chien-lu, and Omei-shan.

Distribution. Khásis (*Hampson*); Kulu, N.W. Himalayas; Central and Western China.

Genus LEPTOMIZA.

(Warr.; Hampson, Fauna Brit. Ind., Moths, iii. p. 228 (1895).)

Leptomiza calcearia.

Hyperythra calcearia, Walk. Cat. Lep. Het. xx. p. 132 (1860).

Leptomiza calcearia, Hampson, Fauna Brit. Ind., Moths, iii. p. 231 (1895).

One specimen from Moupin, July.

Distribution. N.W. Himalayas; Sikhim (*Hampson*); Western China.

Leptomiza dentilineata.

Selenia dentilineata, Moore, Lep. Atk. p. 228 (1887).

Leptomiza dentilineata, Hampson, Fauna Brit. Ind., Moths, iii. p. 231 (1895).

Heterolocha mediolimbata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 308, pl. vi. figs. 3, 3 a.

One specimen received from Chang-yang, August; Poujade records an example from Moupin.

Distribution. Sikhim (*Hampson*); Central and Western China.

Leptomiza (?) lentiginosaria.

Collix lentiginosaria, Leech, Entom., Suppl. p. 55 (May 1891).

There were some specimens from Yokohama? and Gifu in Pryer's collection. I obtained examples of each sex at Hakodate in August, and received a female specimen from Chia-ting-fu, taken in July.

Distribution. Japan; Yesso; Western China.

GENUS GARÆUS.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 623.)

Garæus specularis.

Garæus specularis, Moore, Proc. Zool. Soc. Lond. 1867, p. 623, pl. xxxii. fig. 3; Hampson, Fauna Brit. Ind., Moths, iii. p. 233, fig. (1895).

Endropia mactans, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 393 (1878); Ill. Typ. Lep. Het. iii. p. 30, pl. xlvi. fig. 3 (1879).

Garæus fenestratus, Butl. Trans. Ent. Soc. Lond. 1881, p. 404.

There were several specimens from Ohoyama and Nikko in Pryer's collection, and I received two examples from Chang-yang and one from Ichang.

Distribution. Sikhim; Japan; Central China.

This species is exceedingly variable both in colour and markings; in some specimens the hyaline spots are entirely absent. The range of colour is from pale yellowish brown to dark purplish brown. One of the Chang-yang specimens agrees with Hampson's figure of *G. specularis*, Moore.

Garæus argillaceus.

Pseudomiza argillacea, Butl. Ill. Typ. Lep. Het. vii. p. 100, pl. cxxxv. fig. 15 (1889).

Garæus argillaceus, Hampson, Fauna Brit. Ind., Moths, iii. p. 235 (1895).

One male specimen from Chia-ting-fu, Western China, July.

Distribution. Dalhousie; Dharmasála; Sikhim; Shillong (*Hampson*); Western China.

Genus NOTHOMIZA.

(Warren, Novit. Zool. i. p. 443 (1894).)

Nothomiza formosa.

Ellopiia formosa, Butl. Ill. Typ. Lep. Het. ii. p. 47, pl. xxxv. fig. 8 (1878).

Several specimens from Yokohama and Gifu in Pryer's collection.

I captured specimens in Satsuma in May and at Tsuruga and Nagahama in July. Mr. Smith took the species at Hakone in August.

Hab. Japan; Kiushiu.

Genus HETEROMIZA.

(Warren, Proc. Zool. Soc. Lond, 1893, p. 405.)

Heteromiza sanguiflua.

Cimicodes sanguiflua, Moore, Lep. Atk. p. 233, pl. viii. fig. 4 (1887).

Heteromiza flava, Hampson, Fauna Brit. Ind., Moths, iii. p. 236 (1895).

I have received specimens from Oniei-shan, Moupin, and Chang-yang, June and July.

Hampson considers that *H. flava* is a form of *H. sanguiflua*, but I am inclined to regard them as distinct species.

Distribution. Khásis; Central and Western China.

Heteromiza flava.

Cimicodes flava, Moore, Lep. Atk. p. 233, pl. viii. fig. 5 (1887).

One male example from Moupin, July.

Distribution. Khásis (*Hampson*); Western China.

Heteromiza cruentaria.

Cimicodes cruentaria, Moore, Proc. Zool. Soc. Lond. 1867, p. 616; Waterh. Aid, pl. cli. fig. 6.

Heteromiza cruentaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 237 (1895).

One example of each sex from Chang-yang, July.

Distribution. Western Himalayas; Khásis (*Hampson*); Central China.

Genus DALIMA.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 614.)

Dalima variaria, sp. n.

Male. — Ochreous-brown, striated with purplish-brown. Primaries have a brownish diffuse band, which is angled below costa and traversed throughout its course by a wavy

silvery-white line, and terminates in a black quadrate spot on middle of the inner margin; submarginal band shade-like and obscure: secondaries have two purplish-brown bands, and between these there is an interrupted silvery-white line bordered with fuscous. All the wings have a dusky discal spot; fringes brown. Under surface orange, sparingly freckled with blackish; primaries have a black discal spot and a blackish wavy submarginal band, the latter interrupted towards costa, where it is represented by a round spot; secondaries have a black discal spot, preceded by a blackish abbreviated band from abdominal margin, and a blackish wavy submarginal band. Antennæ as in *D. acutaria*.

Female.—Cinnamon-brown; the markings as in the male, but less distinct.

Expanse, ♂ 52, ♀ 58 millim.

Four male specimens and one female from Moupin, Omei-shan, and Ta-chien-lu, June and July.

Var. grisearia, nov.

Purplish grey, deeper on the secondaries and outer marginal area of primaries; there are no purplish-brown striations; the transverse markings and discal spots are similar to those of the type, but the outer line of primaries is olive-brown.

Two male specimens from Omei-shan, July.

Var. albomaculata, nov.

Primaries ochreous brown, suffused with olive-brown, conspicuously so beyond the transverse line: secondaries purplish brown. Markings as in the type, but in addition there is a series of silvery-white lunules on the outer margin of primaries and a cloud of the same colour, interrupted by the nervules, in the angle of transverse line.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

Dalima obliquaria, sp. n.

Apex of primaries acute; secondaries have an angular projection above middle of outer margin. Pale reddish brown; first line of primaries rufous, undulated; second line indicated by a short rufous streak from costa and another on inner margin; third line rufous, running obliquely from apex to middle of the inner margin, where it terminates very close to the second line, a short outwardly oblique streak from the costa approaches the upper portion of this line; there are traces of a diffuse, dusky, submarginal band. Fringes darker.

Secondaries have two rufous lines and a diffuse submarginal band as on primaries. Under surface orange, speckled with fuscous grey; outer margins suffused with fuscous.

Expanse 52 millim.

One female specimen from Wa-ssu-kow, June.

Hab. Western China.

Dalima ochrearia, sp. n.

The apex of primaries is acutely produced and the secondaries have an angular projection above the middle of outer margin. Pale ochreous brown, tinged with pink, especially on the outer marginal areas of all the wings. Primaries have three brown spots on costa; beyond the middle there is a transverse yellowish line, sharply angled in the direction of the apex of the wing, and then oblique to inner margin, where it terminates slightly in advance of a dark quadrate spot placed on the middle of the margin; this line is outwardly bordered with olivaceous. Secondaries have a transverse yellowish line outwardly bordered with olivaceous and an indistinct dusky line nearer the base of the wing. In some specimens there are indications of a submarginal line on each wing. Under surface orange, freckled with fuscous.

Expanse 50-52 millim.

Several examples of both sexes from Moupin; Chia-ting-fu; Wa-shan; Pu-tsu-fong; Chang-yang: June and July.

The Chang-yang examples are tinged with olivaceous and have indistinct traces of basal and median transverse lines.

Hab. Central and Western China.

Dalima acutaria, sp. n.

The primaries are produced at apex and there is a slight projection on the outer margin of the secondaries below outer angle. Brownish grey, more or less tinged with rufous. Primaries have three short rufous-brown dashes on costa, from the first of which there are indications of a silvery-grey-edged transverse line to the inner margin, and from the third there is a line projected in the direction of outer margin, which, however, it does not reach, but turns sharply inwards and runs obliquely to middle of the inner margin; beyond this line, which is edged with yellowish, the wing is tinged with fuliginous. Secondaries have two central rufous-brown lines, the inner straight and the outer curved, the latter edged inwardly with yellowish. Fringes rufous-brown. Under surface orange, freckled with blackish; marginal area of all the wings suffused with dusky and limited inwards by a

blackish diffuse band. All the wings have a black discal spot on both surfaces. Antennæ of male serrate and fasciculate.

Expanse 56–64 millim.

Two male specimens from Pu-tsu-fong and one from Omei-shan, July.

The type described is rather browner in colour than the other specimens; this is probably due to its finer condition.

Hab. Western China.

Dalima columbinaria, sp. n.

Grey, with a tinge of lilacine. Primaries have two short transverse dashes on the costa and a transverse line beyond the middle, which is sharply angled below the apex of the wing, and then runs obliquely to the middle of the inner margin, where it is inwardly edged with silvery grey; discal spot blackish: secondaries have two slightly curved blackish or dark brown lines, the outer edged internally with silvery grey. All the wings have an interrupted dusky submarginal band-like shade. Fringes brown. Under surface orange, freckled with blackish; transverse markings of upper surface indicated in blackish.

Expanse 54–56 millim.

One male specimen from Omei-shan and one from Moupin, June and July.

Allied to *D. vulpinaria*, Moore.

Hab. Western China.

Dalima subferrugineata.

Drepanodes subferrugineata, Poug. Ann. Soc. Ent. Fr. 1895, p. 307, pl. vi. figs. 2, 2a.

Poujade records a female specimen taken by M. l'Abbé A. David at Moupin.

Hab. Western China.

Genus **AMBLYCHIA**.

(Guen. Phal. i. p. 214 (1857).)

Amblychia angeronaria.

Amblychia angeronaria, Guen. Phal. i. p. 215, pl. iv. fig. 9 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 242 (1895).

One female specimen from Wa-shan, May.

Distribution. Sikhim; Assam; Ceylon (*Hampson*); Western China.

Genus CEPPHIS.

(Hüb. ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 118.)

Cepphis advenaria.

Geometra advenaria, Hüb. Beitr. ii. pl. iii. fig. Q ; Geom. fig. 45 ; Esp. pl. xvi. figs. 1-3.

Cepphis advenaria, Hüb. Verz. Schmett. p. 294 ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 114.

Epione advenaria, Dup. Lép. vii. pl. cl. fig. 3 ; Guen. Phal. i. p. 97.

I captured specimens at Gensan in July and at Hakodate in August.

Distribution. Europe ; Amur ; Japan ; Yesso ; Corea.

Cepphis (?) laterinata.

Numeria laterinata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 312, pl. vi. fig. 13 (= *N. lateritaria*, Pouj. Bull. Muséum, février 1895).

Poujade records a male specimen from Moupin. I have two males from that locality taken in July, and one from Huang-mu-chang taken in August.

Hab. Western China.

Genus HYPERYTHRA.

(Guen. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 218 (1895).)

Hyperythra khasiana.

Calopyrrha khasiana, Swinh. Ann. & Mag. Nat. Hist. (6) xii. p. 221 (1893).

Hyperythra phoenix, Swinh., Hampson, Fauna Brit. Ind., Moths, p. 219 (1895).

Two males from Omei-shan and a female from the province of Kwei-chow, July.

The female has a slight olivaceous tint, but the males are pinkish and yellow.

Distribution. Sikhim ; Khásis ; Nágas (*Hampson*) ; Western China.

Genus ANTHYPERYTHRA.

(Warren, MS. ; Swinhoe, Trans. Ent. Soc. Lond. 1891, p. 485.)

Anthyperythra hermearia.

Anthyperythra hermearia, Swinh. Trans. Ent. Soc. Lond. 1891, p. 485, pl. xix. fig. 9.

One male specimen from Omei-shan, July.

Distribution. Khásis ; Western China.

Genus CORYPHA.

(Walk. Cat. Lep. Het. xx. p. 270 (1860).)

Corypha incongruaria.*Corypha incongruaria*, Walk. Cat. Lep. Het. xx. p. 270 (1860); Bull. Ill. Typ. Lep. Het. p. 31, pl. xlviii. fig. 6 (1879).

I obtained specimens in Satsuma in May and at Tsuruga in July, and my native collector took the species in the island of Kiushiu and at Ningpo.

Distribution. Japan; Kiushiu; N. China.

Genus AUAXA.

(Walker, Cat. Lep. Het. xx. p. 271 (1860).)

Auaxa sulphurea.*Bizia sulphurea*, Butl. Ill. Typ. Lep. Het. ii. p. 47, pl. xxxv. fig. 10 (1878).

Several specimens from Yokohama and Oiwake in Pryer's collection. I took this species in Satsuma in May, at Tsuruga in June, and at Nagasaki and Gensan in July. I have also received specimens from Chang-yang, Omei-shan, and Moupin, June and July.

The basal line and discal spot of primaries are variable characters in this species; in some of my specimens both are absent.

Distribution. Japan; Corea; Central and Western China.

Probably identical with *Auaxa cesadaria*, Walk., from China, the type of which I have not been able to discover.

Genus BIZIA.

(Walk. Cat. Lep. Het. xx. p. 231 (1860).)

Bizia axaria.*Bizia axaria*, Walk. Cat. Lep. Het. xx. p. 261 (1860); Butl. Ill. Typ. Lep. Het. iii. p. 31, pl. xlviii. fig. 5 (1879).*Endropia mibuaria*, Feld. Reise Nov. v. pl. cxxiii. fig. 31 (1875).

Several specimens from Yokohama in Pryer's collection. I obtained the species at Tsuruga and Gensan in July, and Mr. Smith took it at Hakone in August. I have also received specimens from Ichang, Chang-yang, Kiukiang, Omei-shan, Chia-ting-fu, and the province of Kwei-chow, June and July.

Fairly constant in colour and markings, but varies in size.

My smallest male specimen expands 44 millim. and largest female 72 millim.; the latter is from Chang-yang.

Distribution. Japan; Yesso; Corea; Western and Central China.

Genus COLOTOIS.

(Hüb. Verz. Schmett. p. 288.)

Colotois pennaria.

Phal. Geometra pennaria, Linn. Faun. Suec. 324.

Geometra pennaria, Esp. pl. xviii. figs. 4-6; Hüb. Geom. fig. 14.

Colotois pennaria, Hüb. Verz. Schmett. p. 288; Meyrick, Trans. Ent. Soc. 1892, p. 114.

Himera pennaria, Dup. Léop. vii. pl. cxlvi. figs. 1, 2; Guen. Phal. i. p. 182.

There was one male specimen in Pryer's collection.

Distribution. Europe; Amur; Japan.

Genus ENNOMOS.

(Treit.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 114.)

Ennomos autumnaria.

Geometra autumnaria, Wernb. Stett. ent. Zeit. 1859, p. 361.

Geometra alniaria, Esp. Schmett. v. pl. ix. figs. 1-6; Hüb. Geom. fig. 26.

Eugonia alniaria, Hüb. Verz. Schmett. p. 291.

Ennomos alniaria, Treit. Schmett. vi. i. 79; Guen. Phal. i. p. 175.

Ennomos autumnaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 115.

A few examples from Oiwake and Yesso in Pryer's collection.

Distribution. Europe; Ural; Amur; Japan, Yesso.

Genus CROCALLIS.

(Treit.; Hampson, Fauna Brit. Ind., Moths, iii. p. 231 (1895).)

Crocallis acutaria, sp. n.

Primaries pale yellowish brown, sprinkled and suffused with darker; a dark brown line inwardly edged with whitish commences on costa near apex and terminates on inner margin one third from outer angle; a black spot on outer margin in each nervular interspace: secondaries pale brown, slightly suffused with darker within the brownish central line, which becomes indistinct towards costa. All the wings have a dark discal spot, annular on primaries. Fringes brown, paler on

secondaries. Under surface whitish brown, with dark markings of upperside faintly reproduced.

Expanse 48 millim.

One example of each sex from Chang-yang, July.

This species is very like the paler forms of *C. arida*, which also occurs in China, but the apex of primaries is acutely produced, especially in the female, and the outer margin is not scalloped between apex and the angular projection. The transverse line, too, is oblique, not curved in the least, and starts from a point on costa much nearer to the apex.

Hab. Central China.

Crocallis arida.

Niphonissa arida, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 394 (1878)

Ill. Typ. Lep. Het. iii. p. 31, pl. xlviii. fig. 7 (1879).

Crocallis obliquaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 232 (1895).

There were several specimens in Pryer's collection from Yokohama and Oiwake. I have also received the species from Kiushiu, taken by a native collector, and I met with it at Oiwake and Nikko in September.

My collectors in Western China obtained it at Moupin, Pu-tsu-fong, and Chow-pin-sa in June, but only single specimens in each locality. The Moupin example agrees in colour with the Japanese specimens, but the others are much darker.

Distribution. Japan; W. China.

Crocallis (?) acuminaria, sp. n.

Ochreous brown. Primaries traversed by two blackish transverse lines, the first almost straight and the second oblique, angled near costa and outwardly edged with whitish; there is a semihyaline spot on costa extending to angle of second line and intersected by nervule; discal spot black: secondaries have an incomplete waved central blackish band, a faint discal spot, and a dusky cloud at anal angle. Under surface light brown; primaries marked as above, but the transverse lines are finer and the second is followed by some blackish dots on the neuriation, instead of being edged with whitish: secondaries freckled with brownish grey; transverse band extends only to discal spot, and there are indications of a submarginal line.

Expanse 40 millim.

One female specimen from Che-tou, July.

Hab. Western China.

Genus PACHYLIGIA.

(Butler, Ann. & Mag. Nat. Hist. (5) i. p. 442 (1878).)

*Pachyligia dolosa.**Pachyligia dolosa*, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 442 (1878);
Ill. Typ. Lep. Het. p. 50, pl. liii. fig. 5 (1879).

Several specimens from Yokohama in Pryer's collection.

Hab. Japan.*Pachyligia modesta.**Pachyligia modesta*, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 443 (1878);
Ill. Typ. Lep. Het. iii. p. 50, pl. liii. fig. 6 (1879).♀. *Cymatophora tristis*, Leech, Proc. Zool. Soc. 1888, p. 652, pl. xxxii.
fig. 8.

Several specimens from Yokohama in Pryer's collection.

There were two females of this species among Pryer's unidentified insects; one of these I erroneously described as a distinct species under the name *Cymatophora tristis*.

Some of the specimens are unicolorous, others have a darker central band.

Hab. Japan.

Genus ZETHENIA.

(Motsch. Etud. Ent. p. 34 (1860).)

*Zethenia rufescentaria.**Zethenia rufescentaria*, Motsch. Etud. Ent. p. 35 (1860).*Zettienia rufescentaria*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 102.

Several specimens from Yokohama in Pryer's collection.

I captured examples of the type form at Gensan, and my native collector obtained the species at Hakodate in June.

There are two distinct colour-forms of this species; one is of the typical brownish, the other is pale whitish grey, with space between the inner and outer lines filled in with blackish. I took specimens of this form, for which I propose the varietal name *grisearia*, at Nagasaki in May and Fushiki in July. There was one example of this form in Pryer's collection.*Hab.* Japan, Yesso, Kiushiu, and Corea.*Zethenia contiguaria*, sp. n.Somewhat similar in appearance to *Z. rufescentaria*, Motsch., but darker in colour. The first line of primaries is angulated below the costa; the wavy second line is dotted with black on the neuration as in *Z. rufescentaria*, but it is inwardly edged

with whitish towards inner margin and is preceded and followed by a diffuse fuscous-brown transverse band; discal spot black: secondaries have a black discal spot and a wavy blackish transverse line, the latter preceded and followed by fuscous-brown bands as on primaries. Underside paler, markings very similar to those of upper surface.

Expanse 42-44 millim.

Several specimens from Ichang, Chang-yang, Moupin, Omei-shan, Chia-ting-fu, and the province of Kwei-chow: July.

Hab. Central and Western China.

Zethenia albonotaria.

Selenia albonotaria, Brem. Lep. Ost-Sib. p. 73, pl. vi. fig. 16 (1864).

Zettienia albonotaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 102.

Several specimens from Yokohama in Pryer's collection.

I obtained the species at Nagasaki, Ningpo, and in Satsuma in April and May. My native collector captured examples at Hakodate in June.

One of the specimens from Ningpo and one from Nagasaki seem to agree with *consociaria*, Christ.

Distribution. E. Siberia; Japan; Yesso; Kiushiu; North China.

Genus SELENIOPSIS.

(Warr. Novit. Zool. i. p. 462 (1894).)

Seleniopsis evanescens.

Endropia evanescens, Butl. Trans. Ent. Soc. Lond. 1881, p. 404.

Seleniopsis evanescens, Warr. Novit. Zool. i. p. 462.

There were specimens from Yokohama, Ohoyama, and Nikko in Pryer's collection. I captured the species at Hakodate in August, and my native collector took it in the island of Kiushiu.

Hab. Japan, Yesso, and Kiushiu.

Seleniopsis grisearia, sp. n.

Greyish white. Primaries powdered with darker grey; discoidal spot black, linear; beyond this, on the costa, is an almost white spot followed by a small blackish cloud: secondaries powdered with darker grey on abdominal margin, especially towards anal angle, where there are traces of two dark transverse lines. Fringes dark grey, spotted with blackish

at the ends of the nervules. Under surface brownish grey, tinged with violet; outer margin of primaries bordered with violet-grey, costal area striated and powdered with brown, discoidal and costal spots as above, but the latter is surrounded with black; secondaries are freckled with brownish and clouded with violet-grey below the black linear discoidal spot; above the anal angle there is a short whitish diffuse line, edged inwardly with violet-grey.

Expanse 38 millim.

One male specimen from Moupin, July.

Hab. Western China.

Closely allied to *S. evanescens*, Butl., and perhaps only a local form of that species.

Genus ANONYCHIA.

(Warr. Proc. Zool. Soc. Lond. 1893, p. 412.)

Anonychia grisea.

Nadagra grisea, Butl. Proc. Zool. Soc. Lond. 1883, p. 172.

Onychia grisea, Swinhoe and Cotes, Moths of India, p. 574 (1887).

Anonychia grisea, Hampson, Fauna Brit. Ind., Moths, iii. p. 178 (1895).

I have specimens from Moupin, Ta-chien-lu, Pu-tsu-fong, Wa-ssu-kow, taken in June and July.

Distribution. N.W. Himalayas; Sikkim; Khásis (*Hampson*); Western China.

Anonychia latifasciaria, sp. n.

Allied to *A. grisea*, Butl. Primaries greyish, powdered and freckled with brownish; the central band, which is intersected by a blackish sinuous line, is broad and darker, especially towards the edges; the inner edge of the band is curved about the middle; submarginal line diffuse, pale, wavy: secondaries fuscous grey, with a blackish, central, slightly curved line. Under surface fuscous grey; costa yellowish, freckled with black; the primaries have a blackish discal spot and a series of spots on the neuration beyond; secondaries are much freckled and have a discal spot and a series of spots as on primaries. Fringes grey, darker at their base and marked with blackish at extremities of the nervules.

Expanse 32 millim.

Occurs at Omei-shan, Pu-tsu-fong, Ni-tou; I have one male specimen from each locality: July.

Hab. Western China.

Anonychia præditaria, sp. n. (Pl. VI. fig. 4.)

Light brown. Basal half of primaries suffused with fuliginous and coarsely striated with blackish; there is a wavy blackish subbasal line and a curved one beyond, the latter increases in width towards costa, where it is almost black; limiting the basal half of the wing is a broad fuliginous undulated band, the outer edge of which is outlined with whitish and has an obtuse projection above its centre; there is a short transverse blackish streak from the costa before apex, and the outer margin is suffused with fuliginous. Secondaries have the basal two thirds suffused with blackish and limited by a pale line, which has a small bidentate projection about the middle; beyond this there is a series of dusky dots. All the wings have a blackish discal spot. Fringes of the ground-colour, chequered with darker. Under surface light brown, with a pinkish tint: primaries have a second line and the broad band of upper surface reproduced. Secondaries have the basal two-thirds limited by a series of black dots, and striated and freckled with blackish.

Expanse 42 millim.

One example of each sex from Moupin, and two males from Pu-tsu-fong, July.

Hab. Western China.

Allied to *A. mendica*, Butl.

Anonychia anomala.

Cidaria (?) *anomala*, Butl. Trans. Ent. Soc. Lond. 1881, p. 425.

Butler states that this appears to be a tolerably common species at Tokio. It was not represented in Pryer's collection, neither did I meet with it in any part of Japan that I visited.

I have a specimen from Pu-tsu-fong, taken in June or July, which seems to be referable to this species, but the markings on primaries are more pronounced.

Distribution. Japan; Western China.

Anonychia mendica.

Cidaria mendica, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 446 (1879).

There were four specimens from Nikko and Ohoyama in Pryer's collection. I took one example at Hakodate in August, and Mr. Smith one at Hakone in the same month. I have also received a male from Chang-yang.

In the Chinese specimen the outer edge of central fascia is bolder in outline.

Distribution. Japan; Yesso; Central China.

Genus EURYMENE.

(Dup. Cat. Lép. Eur. p. 220 (1844).)

Eurymene dolabraria.*Phal. Geometra dolabraria*, Linn. Syst. Nat. xii. 861.*Geometra dolabraria*, Esp. pl. 15. figs. 1, 2; Hübn. Geom. fig. 42.*Eurymene dolabraria*, Dup. Lép. vii. pl. 148. fig. 5; Guen. Phal. i. p. 145.*Metrocampa dolabraria*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 112.

There were four very typical specimens from Yesso in Pryer's collection.

Distribution. Europe; Yesso.

Eurymene subpurpuraria, sp. n.

Pale brown. Primaries tinged with violet on the central and basal areas; there are three more or less quadrate marks on the costa, and there are some black dots on the third median nervule, at end of cell, and on nervule above. Secondaries have a blackish central band, but this is only distinct towards abdominal margin; there are some black dots as on primaries: all the wings have an indistinct blackish discal spot. Fringes pale brown chequered with slightly darker brown. Under surface: primaries buff, clouded, except on apical area, with reddish brown, and suffused with violet-grey; the costa is marked with reddish brown and whitish; secondaries clouded with brownish and blackish, the latter confined to the anal and central areas; a blackish discal spot on all the wings.

Expanse 50 millim.

One male specimen from Pu-tsu-fong, June.

Hab. Western China.

Genus PRIONIA.

(Hübn. Zutr. iv. p. 40; Hampson, Fauna Brit. Ind., Moths, iii. p. 175 (1895).)

Prionia paupera.

Osicerda paupera, Butl. Trans. Ent. Soc. Lond. 1881, p. 418.

A nice series in Pryer's collection, taken at Gifu and Oiwake.

Hab. Japan.

Prionia rosearia.

Prionia rosearia, Leech, Entom., Suppl. p. 56 (May 1891).

I obtained six specimens, including both sexes, in the Snowy valley, Ningpo, April.

The first of the central lines is not always clearly defined in some specimens.

There is an un-named example of this species, labelled "Chekiang," in the National Collection.

Hab. North China.

Genus HETEROLOCHA.

(Led. Verh. zool.-bot. Ges. Wien, iii. p. 207 (1853); Hampson, Fauna Brit. Ind., Moths, iii. p. 179 (1895).)

Heterolocha falconaria.

Aspilates falconaria, Walk. Cat. Lep. Het., Suppl. v. p. 1665 (1866).

Heterolocha falconaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 179 (1895).

Two male specimens from Pu-tsu-fong and one female from Che-tou, July.

Distribution. N.W. Himalayas, Sikhim, Punjab (*Hampson*); Western China.

Heterolocha latifasciaria, sp. n.

Closely allied to *H. subroseata*, but the outer margin of secondaries is rounder in contour. The oblique band of primaries is marked towards costa with dusky spots, as in *H. falconaria*, Walk., but there is no apical spot as in *H. apiciaria*, and the band of secondaries is broader and more distinctly purple towards abdominal margin. The markings on under surface are purplish, with a slight grey tinge.

Expanse 32-34 millim.

Two male specimens from Ichang and one female from Chang-yang, June and July.

Hab. Central China.

Heterolocha subroseata.

Heterolocha subroseata, Warren, Novit. Zool. i. p. 449 (1894).

A long series from Chang-yang, Moupin, Omei-shan, and the Province of Kwei-chow, June and July.

In some specimens the upper surface is more or less irrorated with fuscous, especially on the outer marginal area.

The markings are subject to modification as regards development: sometimes the basal patch of primaries is only indicated by a fuscous spot on costa, and the oblique transverse band is entirely absent; in these specimens, however, the purple patch on inner margin remains. In other examples the oblique band is well defined, but the marginal patch is eliminated.

Expanse ranges from 31–41 millim.

Distribution. Japan (Warren); Central and Western China.

Heterolocha stulta.

Hyperythra stulta, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 370 (1879).

A fine series from Ohoyama and Oiwake in Pryer's collection.

Varies in the intensity and definition of markings.

Hab. Japan.

Heterolocha notata.

Heterolocha stulta, var. *notata*, Warren, Novit. Zool. i. p. 449 (1894).

Male.—Primaries straw-colour, irrorated, especially on the costal and outer marginal areas, with fuscous; basal patch, a band before the discal spot, and one beyond pinkish, the latter attenuated towards costa, and followed by a pink-tinged fuscous transverse cloud. Secondaries straw-colour, paler towards costa and irrorated with fuscous; beyond the dusky discal spot there is a pinkish band, which does not reach the costa; a transverse pink-tinged fuscous band before outer margin. Under surface: primaries yellowish, irrorated with pinkish grey, whitish on inner marginal area. Secondaries whitish, irrorated with pinkish grey, yellowish on costal area; the transverse markings of upperside are reproduced but are not distinct.

Female.—Rather paler in colour.

Expanse 30–32 millim.

A number of male specimens from Chang-yang and Ichang, chiefly from the first-named locality, whence four females were also received, June.

Varies considerably in the intensity of the pinkish markings. In some examples these are very pronounced, whilst in others they are, to a greater or lesser extent, obsolescent. In one or two specimens the primaries are tinged with brownish.

Distribution. Japan (Warren); Central China.

Heterolocha fuscofasciaria, sp. n.

Whitish, irrorated with fuscous. Costal area of primaries suffused with brownish, and the basal area with fuscous grey; annular discal spot and oblique band fuscous grey, the latter commencing before the apex. Secondaries have a fuscous-grey central band. Fringes agree in colour with the bands. Under surface similar to above.

Expanse 26 millim.

One male specimen from Ichang, April.

Hab. Central China.

Nearly allied to *H. notata*.

Heterolocha aristonaria.

Hyperythra (?) *aristonaria*, Walk. Cat. Lep. Het. xx. p. 130 (1860).

Hyperythra niphonica, Butl. Ill. Typ. Lep. Het. ii. p. 46, pl. xxxv. fig. 2 (1878).

There was a nice series of both forms in Pryer's collection. I have also received examples of the typical form from Ichang and Chang-yang, and from the Province of Kweichow.

At Nagasaki I took the species in May, and afterwards met with it at Gensan in June, at Tsuruga in July, and at Hakodate in August.

This species is closely allied to, if it is not identical with, *H. laminaria*, Herr.-Sch., from Armenia.

Niphonica, Butl., cannot be specifically separated from *aristonaria*, Walk. Some of the specimens from Japan have the yellow colour of *aristonaria*, but the outer portion of all the wings, beyond the second line, is grey, as in *niphonica*; in other examples the marginal area is purplish red.

The males vary in size from 20 to 35 millim.

Distribution. Japan; Yesso; Corea; North, Western, and Central China.

Heterolocha rosearia, sp. n.

Yellow. Primaries pale pinkish on basal area, there is a tapered band of the same colour on the lower portion of outer marginal area; the costa is finely dotted and marked with black, and there is a pinkish apical spot edged inwardly with blackish. Secondaries have an ill-defined pale pinkish subbasal band, and the outer margin is broadly bordered with pale pinkish, except at outer angle; both this and the band on primaries inwardly edged with dusky.

Under surface bright yellow: primaries have the inner margin whitish; a purplish-red dash at base of costa, a sub-basal cloud, a spot at apex, and a cloud on inner margin near angle: secondaries have a subbasal band and a broad central one; the latter, and also the cloud on inner margin of primaries, suffused with greyish. All the wings have a discal spot of the same colour as the other markings.

Expanse 26 millim.

One male specimen from Chang-yang, July.

Hab. Central China.

Closely allied to *H. aristonaria*.

Heterolocha marginaria, sp. n.

Sordid yellow, irrorated with purplish fuscous, especially on secondaries. Primaries have a pale purplish basal patch, and a border on outer margin of the same colour, the latter tapers towards apex and has a brownish circular patch on it at inner margin; discal spot dusky, indistinct. Secondaries have a purplish discal spot and central band. Under surface yellow, irrorated and mottled with fuscous mixed with purplish red: primaries have an outwardly diffuse oblique band from apex, an annular discal spot, and an irregular-shaped subbasal patch, all purplish red; secondaries have a purplish-red discal spot and central band.

Expanse 34 millim.

One male specimen from Moupin, July.

Hab. Western China.

Heterolocha quadraria, sp. n.

(Pl. VI. fig. 8.)

Primaries olive-yellow, traversed by two blackish lines, each commencing in a black, more or less quadrate, spot on the costa, the first is almost straight and the second is twice angled below costa, thence obliquely wavy and edged outwardly with whitish to inner margin, where it expands into a blotch. Secondaries yellowish, freckled with violet-grey and traversed by a band of the same colour; the abdominal margin and anal angle are tinged with olive-yellow. Fringes of primaries concolorous, except towards apex, where they are dark; fringes of secondaries violet-grey, except at anal angle, where they are yellowish green. Under surface brownish: primaries suffused with fuscous; costal and outer marginal areas clouded with yellow; there are two diffuse dusky bands, corresponding in position with the lines of

upper surface : secondaries clouded with ferruginous, except on abdominal margin, and traversed by a dusky band. All the wings have a blackish discal spot on both surfaces. Head and thorax concolorous with primaries; abdomen agrees with secondaries above.

Expanse 32 millim.

One male specimen from Pu-tsu-fong, June. Three male specimens, Chang-yang, Pu-tsu-fong, Che-tou : July. McArthur took a specimen at Narkundah in April.

Distribution. Central and Western China; North-west Himalayas.

Heterolocha patalata.

Heterolocha patalata, Feld. Reis. Nov. pl. 132. figs. 9, 9 a (1874); Hampson, Fauna Brit. Ind., Moths, iii. p. 180 (1895).

Two male specimens received from Ta-chien-lu, June.

Distribution. Rampur; Khásis (*Hampson*); Western China.

Heterolocha phœnicotæniata.

Aspilates phœnicotæniata, Koll. Hüg. Kasch. iv. p. 487 (1848).

Heterolocha phœnico-tæniata, Feld. Reis. Nov. pl. 133. figs. 6, 6 a (1874); Hampson, Fauna Brit. Ind., Moths, iii. 179 (1895).

One example from Japan in Pryer's collection.

Distribution. N.W. Himalayas (*Hampson*); Japan (*Pryer*).

Heterolocha grata.

Epione grata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 369 (1879).

Gynopteryx lapidea, Butl. Trans. Ent. Soc. 1881, p. 403.

There were a number of specimens from Oiwake and Gifu in Pryer's collection, and amongst them examples of the larger and rather purplish-grey form *lapidea*, Butl.

Hab. Japan.

Genus VENILIA.

(Dup.; Hampson, Fauna Brit. Ind., Moths, iii. p. 180 (1895).)

Venilia triangulum.

Cautoloma triangulum, Oberth. Etud. d'Entom. xi. p. 32, pl. ii. fig. 5 (1886).

Oberthür does not refer to the sex of his type. I have a

series from Ta-chien-lu, where the specimens were taken in May and June. The sexes do not differ either in colour or marking.

Hab. Western China.

Venilia Oberthuri.

♀ *Caustoloma oberthuri*, Alph. Iris, viii. p. 201 (1895).

A nice series, including both sexes, from Ta-chien-lu, Pu-tsu-fong, and How-kow: June and July.

Hab. Western China and Thibet.

Venilia flavaria, sp. n.

(Pl. VI. fig. 12.)

Similar to *V. triangulum*, Oberth., but the ground-colour is darker yellow, especially on secondaries; the brown marking on primaries is not continued along the inner margin to base; the band on secondaries is more pronounced and is continued as a short broadish streak along the abdominal margin. The dark costal border is uniformly straight, and not inwardly expanded about the middle as in *V. triangulum*.

One example of each sex from Chow-pin-sa, and a male from Pu-tsu-fong, June.

Hab. Western China.

Venilia lozonaria.

Caustoloma lozonaria, Oberth. Etud. d'Entom. xviii. p. 24, pl. iv. fig. 57.

A series received from Pu-tsu-fong, Che-tou, Omei-shan, Ta-chien-lu: June, July, and August.

Hab. Western China.

Venilia (?) *invenustaria*, sp. n.

Whity brown, faintly striated with pale ferruginous on both surfaces.

Expanse 30 millim.

One female specimen taken by myself at Gensan in June.

Hab. Corea.

Genus LOZOGRAMMA.

(Stephens, Ill. Brit. Ent., Haust. iii. p. 258 (1829).)

Lozogamma petraria.

Geometra petraria, Hübn. Geom. fig. 113; Esp. v. pl. 49. fig. 1.

Lozogamma petraria, Steph. Ill. Brit. Ent., Haust. iii. p. 259.

Panagra petraria, Guen. Phal. ii. p. 132.

Pseudopanthera petraria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 117.

Several specimens from Oiwake, Gifu, Nikko, and Yesso in Pryer's collection. A few examples were taken by my native collector at Hakodate and in the island of Kiushiu in June and July, and I have also received specimens from Ichang, Chang-yang, and Chia-ting-fu, where they were taken in June.

Distribution. Europe; Armenia; Amur; Japan; Yesso; Central and Western China.

Genus LOXASPILATES.

(Warren, Proc. Zool. Soc. Lond. 1893, p. 413.)

Loxaspilates obliquaria.

Aspilates obliquaria, Moore, Proc. Zool. Soc. Lond. 1867, p. 649.

Loxaspilates obliquaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 181 (1895).

Eusarca subfalcata, Poug. Ann. Soc. Ent. Fr. 1895, p. 312, pl. 7. figs. 14, 14 a.

I received specimens of this exceedingly variable species from Moupin, Omei-shan, Pu-tsu-fong, Ta-chien-lu, and from How-kow. Poujade records a female specimen from Moupin.

Distribution. Afghanistan; N.W. Himalayas; Sikhim (*Hampson*); Western China; Thibet.

Loxaspilates straminearia, sp. n.

Primaries pale straw-colour, sparsely irrorated with brownish; there are indications of two brownish transverse lines (one on each side of the blackish discal dot), most distinct towards costa and inner margin; submarginal line wavy, but indistinct, and marked with blackish above the middle; fringes of the ground-colour, preceded by a series of blackish dots. Secondaries whitish, with a brownish patch rather below the middle of abdominal margin, and a smaller one near anal angle; fringes as on primaries. Under surface pale straw-colour: primaries have the basal half of the costal area suffused with fuscous and irrorated with the same colour beyond; there is an oblique fuscous transverse line marked with black on the costa, and the discal spot is blackish: secondaries sparsely irrorated with fuscous; the discal spot

is blackish and there are two fuscous bands beyond, both becoming indistinct towards costa.

Expanse 36 millim.

One male specimen from the summit of Omei-shan, July.

Hab. Western China.

Loxaspilates nigromacularia, sp. n.

Whitish, sparsely irrorated with blackish on primaries and fuscous on secondaries. Primaries have two black transverse lines: the first is biangulate, and the second inwardly dentate and bordered outwardly with olivaceous brown; there is a rather large black discal spot; the submarginal line is indicated by a short black dash from costa, a >-shaped mark just below, and a similar mark towards inner margin. Secondaries have a blackish discal dot and dusky central band, the latter becoming indistinct towards costa. Fringes of the ground-colour, preceded on primaries by a series of black lunules. Under surface whitish: primaries suffused with fuliginous on basal two-thirds, markings of upper surface reproduced in dusky.

Expanse 34 millim.

One male specimen from Pu-tsu-fong, June.

Hab. Western China.

Loxaspilates (?) trilineararia, sp. n.

Primaries brown, with three silvery-white transverse lines each inwardly edged with dark brown; the first line is slightly oblique, the second is curved and recurved, and the third is biangulate; discal dot blackish. Secondaries whitish, irrorated and lined with brownish on abdominal margin, and suffused with the same colour towards outer margin; discal dot blackish. Fringes brown, rather paler on secondaries. Under surface whitish, sparingly irrorated with brownish, and tinged with the same colour on costal and outer marginal areas of primaries; all the wings have a blackish discal dot; the transverse lines of primaries are faintly reproduced and the secondaries have a dark brown submarginal band.

Expanse 34 millim.

One female specimen from Wa-shan, June.

Hab. Western China.

BIBLIOGRAPHICAL NOTICES.

The Fauna of British India, including Ceylon and Burma. Published under the authority of the Secretary of State for India in Council. Edited by W. T. BLANFORD.—*Moths.* Vol. IV. By Sir G. F. HAMPSON, Bart.

THE present volume completes Sir George Hampson's revision of Indian Moths, the Tortrices, Tineina, and Plume-moths being alone excepted. It comprises an account of the species which represent the large family Pyralidæ in India, Ceylon, and Burma; and concludes with an Appendix of addenda and corrigenda, bringing the previous volumes up to date.

At one time the family Pyralidæ was represented by a group of so-called "mother-of-pearl" moths which constituted a mere fraction of the supposed tribe Pyralites, whilst other groups, popularly known as "grass-moths" or "honey-moths," were separated as families of the tribe Crambites. Now the whole of these insects are very properly merged into one family, all those previously recognized families which had been distinguished by good structural characters taking their places as subfamilies. Of the more typical Pyralidæ many are of remarkable beauty, whilst a great number are of considerable interest on account of the almost endless modifications of their various organs, together with the development, sometimes on one part and sometimes on another of their structure, of tufts or brushes of hair, patches of thickened scales, or clear impressed patches, most of these characters appearing to be confined chiefly, if not solely, to the males. Now, although all these secondary sexual characters are very entertaining to the student, they need examining with the greatest attention, inasmuch as not a few of the species scarcely differ one from the other excepting in the position or the colour of some insignificant pencil of hair on a leg or wing; and, seeing that Sir George Hampson has conscientiously and methodically studied each family, genus, and species, not only in general structure, but having a due regard to these peculiarities, it is a mystery how he can have produced the present volume so quickly after the publication of Volume III.

It must be remembered that most of the Pyralidæ are very small moths of somewhat complex structure, and, owing to the delicate texture of their wings, it is frequently by no means easy to examine the neuration; the use of benzine, to render the wing temporarily transparent, often causes it to fold or curl over in such a manner as to make a study of the veins impossible. If the species be a common one, a specimen (from no special locality) may be sacrificed, the wings being cleared of scales and mounted; but in the case of the rarer species the most careful study through a platyscopic lens is necessary.

Perhaps I am mistaken, but it has struck me in running through this volume that this very necessity for close examination into minute details in working out the species of Pyralidæ has had what most lepidopterists will consider a beneficent effect, in reducing the long strings of synonyms which are met with continually in the earlier volumes of the Moths. In Volume IV. they appear chiefly in the boldly marked groups, such as *Nymphula* in the Hydrocampinæ. However, in a work which will be an undoubted boon, not only to all collectors in the East, but to all living lepidopterists, it is hardly fair to criticize the author's views respecting the limits of species: if he concludes that the species of certain genera are subject to unlimited variation combined with very extensive geographical distribution, he has, by his unwearied industry, earned a full right to his opinions.

Taken as a whole, the four volumes of the Moths of India have, without question, been worked out in so masterly a manner and are so infinitely superior as text-books of families and genera to anything previously produced, that they must necessarily give a great impetus to the study of Heterocerous Lepidoptera.

A. G. BUTLER.

The Parasitic Diseases of Poultry. By FRED. V. THEOBALD, M.A., F.E.S. London: Gurney & Jackson, 1896. Pp. xv & 120.

THIS little book should prove useful not only to poultry-rearers but also to the scientist and veterinarian. It opens with an introductory chapter on parasites and parasitism in general, at the conclusion of which the author rightly insists on the importance of cleanliness and healthy surroundings for poultry—items too much neglected by the majority of poultry-keepers. For the purpose of description, the Parasites are divided into Animal and Vegetable; and the Animal Parasites are subdivided into (1) Protozoan Parasites, (2) Insect Parasites (fleas, lice, &c.), (3) Mite Parasites, and (4) Worm Parasites. These are again divided into their natural groups, and under each group the symptoms and appearances of the diseases, the parasites producing them, with their life-histories and mode of distribution, and the means of prevention and treatment, are fully dealt with. The last should be very valuable, especially as it is the outcome of the author's own experience; it would have been better, however, to have used the term "lime-washed" throughout, instead of, in most instances, the somewhat loose one, "whitewashed."

Commencing with Diphtheritic Roup, the opinion is expressed that though there may be three varieties of this affection, it is generally protozoan in nature. Its extreme contagiousness is certainly against this view, and such authorities as Cornil and Babes and Löffler favour the bacterial theory of its origin. On page 6 "Cornet" is evidently a misprint for "Cornil."

Passing to the Vegetable Parasites, the author does not seem to be so much at home as with the Animal. They are divided in rather a curious way, viz.: (1) the Dermatophytes, or cutaneous parasites, (2) the Perisporiaceæ or "Moulds," and (3) the Saccharomycetes. An *Aspergillus* is described as "formed of thin colourless filaments forming a matted layer or thallus, and a looser mass above, the so-called aerial mycelium." By the inoculation of the spores of *A. fumigatus* it is stated that "tuberculosis of the liver and lungs takes place." Although the next sentence renders the author's meaning clear, it is to be regretted that the term "tuberculosis," which is now applied only to a specific disease, should be used in an anatomical sense. The bacterial diseases are not described, as the author considers that they should be separately dealt with. Two appendices (one a complete list of the parasites attacking *Gallus domesticus*, the other a bibliography) and a good index complete the volume, which is illustrated with many capital woodcuts.

In spite of the blemishes mentioned above, the work supplies a distinct want and will prove a useful guide to the recognition and treatment of the parasitic diseases of poultry.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

December 2, 1896.—Dr. Henry Hicks, F.R.S.,
President, in the Chair.

The following communications were read:—

1. 'On the Affinities of the Echinothuridæ, and on *Pedinothuria* and *Elikodiadema*, two new Subgenera of Echinoidea.' By J. W. Gregory, D.Sc., F.G.S.

The Author summarizes and discusses the literature bearing upon the Echinothuridæ, and brings forward arguments to prove that the family is a member of the order Diademoidea, and is derived from the Pedinidæ, members of which are found in earlier rocks than the Corallian, which contains the oldest member of the Echinothuridæ, namely, *Pelanechinus*. He maintains that the extreme flexibility and loose articulation of the plates of the living genera *Asthenosoma* and *Phormosoma* is due to the diminished calcification of the plates, and that these recent genera are extremely specialized forms, and not primitive,—the apparently primitive features of the family being secondarily acquired, not primæval.

A description is given of forms belonging to two new genera, described as *Pedinothuria*—a connecting-link between the Pedinidæ and Echinothuridæ; and *Elikodiadema*—which has a flexible test, is

a modified form of *Pseudodiadema*, and has probably arisen from the adoption of a deep-sea life resulting in diminished calcification of the test.

2. 'On *Echinocystis* and *Palæodiscus*, two Silurian Genera of Echinoidea.' By J. W. Gregory, D.Sc., F.G.S.

The Author gives a history of the genera *Echinocystis*, Salter, and *Palæodiscus*, Wyv. Thoms., redescrives their structures, and discusses their affinities. He concludes that *Echinocystis* is an echinid and not a cystid; and that *Palæodiscus* is an echinid and not an asterid. In order to prevent confusion, he suggests the name *Scolocystis* for a true cystid which was described by Hall as *Echinocystis*, some years after the latter name had been applied by Wyville Thomson to the fossil now concluded to be an echinid; and also suggests the name of *Discocystis* for the form named *Echinodiscus* by Worthen and Müller.

In discussing the affinities of *Echinocystis*, Wyv. Thoms., the two latest diagnoses of the Cystoidea (those of Prof. von Zittel and Prof. Haeckel) are considered, and it is contended that they do not enable us to draw any sharp line of distinction between cystids and echinids.

It is shown that the masticatory apparatus of *Palæodiscus* and *Echinocystis* explain the origin of that structure in gnathostomate echinids; and furthermore, it is suggested that *Echinocystis* renders probable the homology of the so-called 'calycinal plates' of the Echinoidea with the plates of the valvular pyramid of the Cystoidea, and not with the calyx-plates.

The Author gives synopses of the order Cystocidaroidea of Prof. von Zittel, and of its two families, Palæodiscidæ and Echinocystidæ.

MISCELLANEOUS.

To the Editors of the 'Annals and Magazine of Natural History.'

The Generic Name of the River Crayfish.

GENTLEMEN,—It is unnecessary for me to reply to the Rev. Mr. Stebbing at any length.

(i.) Reference to vol. xi. of the Trans. Linn. Soc. will confirm the accuracy of my remark as to Leach's treatment of *Astacus* and *Nephrops*. I am surprised at Mr. Stebbing supposing that I cited an anonymous article of uncertain date.

(ii.) Mr. Stebbing appears to be unaware of rule 2 of the rules proposed by the British Association for zoological nomenclature. What is there said of Brisson applies literally to Gronovius, and the genera of the one author are as good as those of the other.

(iii.) Does not Mr. Stebbing know that 1758 has been well called by the most eminent of the exponents of the zoological works of

Linnæus "the zoological *ab urbe condita* of binominal chronology" ? and that before 1890.

(iv.) If Desmarest had not said that Leach's *Potamobius* was a river-crab one might have ascribed *Potamobius apud* Samouelle to Leach : but as it is, Samouelle must take the responsibility for his ill-advised method of using Leach's MSS.

(v.) Mr. Stebbing has no right to lead us to suppose that *Potamobius* was not preoccupied ; he shows himself to be incapable of recognizing the name when it is absolutely forced under his eyes, for he says of Desmarest that he "would probably have accepted Leach's *Potamobius* had he ever heard of it," and that after I had quoted a sentence of Desmarest passing an opinion on the value of that very name. So entranced has Mr. Stebbing been by the details of my autobiography, that he has missed the kernel of my argument.

(vi.) How one text-book can copy another either peacefully or otherwise I know not ; but, if Mr. Stebbing means to gibe at Huxley, Milne-Edwards, Carus, Claus, Gegenbaur, Hertwig, and Boas, he has been guilty of an offence of which I hope he has already repented.

I am, Gentlemen,

Your obedient Servant,

F. JEFFREY BELL.

A Gigantic Cephalopod on the Florida Coast.

By A. E. VERRILL.

Mr. R. P. Whitfield has forwarded to the writer the following letter from Dr. Webb to Mr. J. A. Allen, dated St. Augustine, Fla., Dec. 8th, 1896 :—

"You may be interested to know of the body of an immense Octopus thrown ashore some miles south of this city. Nothing but the stumps of the tentacles remain, as it had evidently been dead for some time before being washed ashore. As it is, however, the body measures 18 feet in length by 10 feet in breadth. Its immense size and condition will prevent all attempts at preservation. I thought its size might interest you, as I do not know of the record of one so large."

The proportions given above indicate that this may have been a squid-like form, and not an *Octopus*. The "breadth" is evidently that of the softened and collapsed body, and would represent an actual maximum diameter in life of at least 7 feet, and a probable weight of 4 to 5 tons for the body and head. These dimensions are decidedly larger than those of any of the well-authenticated Newfoundland specimens. It is, perhaps, a species of *Architeuthis*. Professor Steenstrup recorded many years ago a species of this genus (*A. dux*)*, taken in 1855 in the West-Indian seas ; but his example was much smaller than the one here recorded.—*Amer. Journ. Sci.*, January 1897, p. 79.

* See Trans. Connecticut Acad. vol. v. ; also Report U.S. Fish Com. for 1879, p. 51, pl. xii. fig. 4.

Appendicular Skeleton.

Resting upon the rim of chondrocranium which projects behind the occipital border of the cranial shield is a single pair of large supratemporal plates, each tapering towards the middle line, and from beneath this shield there emerges behind a pair of still larger post-temporal plates marked with small pittings, apparently of the sensory canal-system, near its outer border (Brit. Mus. no. P. 6908 *a*). There is nothing worthy of remark in the imperfectly known pectoral arch which these elements support, and the number of the pectoral basals still remains to be discovered. There are, however, several good portions of pectoral fins, and when viewed from below these exhibit the slightly lobate form of the appendage (*e. g.* no. P. 6908 *c*). The slender anterior fulcra seem to have fused with the foremost ray, and this is hence remarkably stout; at its upper end it exhibits a very large concave articular facette. The hindermost rays of the fin are short and excessively delicate. The pelvic bones are separate, contracted mesially, and expanded at each end, and the small pelvic fin is fringed with conspicuous slender biserial fulcra. The fulcra on the median fins are also large, slender, and biserial, and the tips of a few of the gradually lengthening anterior rays of these fins are successively lost in the fulcral series (no. P. 6909). At the base of these fins, it may be added, the few fulcral scales are simple, not subdivided into two halves.

Squamation.

The scales are very thin over the whole of the trunk and only appear thickened on the atrophied upper caudal lobe (no. P. 6909). Their exposed face is distinctly rhombic and often punctate or partly striated, but chiefly marked by the concentric lines of growth.

[To be continued.]

XXXI.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.

[Continued from p. 235.]

Genus RUMIA.

(Dup.; Hampson, Fauna Brit. Ind., Moths, iii. p. 183 (1895).)

Rumia tridentifera.

Rumia tridentifera, Moore, Lep. Atk. p. 30 (1887); Hampson, Fauna Brit. Ind., Moths, iii. p. 184 (1895).

Five male specimens and one female received from Tachien-lu, Pu-tsu-fong, and How-kow: June, July, and August.

In one example from Pu-tsu-fong the large spot is only outlined in black, the interior being brownish; in a specimen from How-kow this spot is entirely reddish brown and rather less in size than in the specimens from Western China.

Distribution. Sikkim (*Hampson*); Western China and Thibet.

Rumia trimacularia, sp. n. (Pl. VI. fig. 9.)

Male.—Pale yellow. Primaries have a reddish patch at the base, an oblong one on costa extending to median nervure and enclosing a lunule, and a square one at apex; there are two indistinct wavy transverse lines, the first commencing in a reddish dot on costa, and the second from inner edge of the apical patch. Secondaries have a blackish central spot and narrow wavy band. Under surface yellow: inner margin of primaries whitish and the costa tinged with pinkish; there are two blackish transverse lines, but the first one is nearer the base of the wing than on upperside; discal spot large, blackish; apical spot reddish, but faint; secondaries have a blackish central spot and submarginal line. The central band of secondaries shows through on the under surface, and the basal line on under surface of primaries and the submarginal of secondaries are each more distinct than on the upper surface.

Expanse 50–56 millim.

Female deeper yellow, apical patch of primaries absent.

Six male specimens and five females received from Moupin, Che-tou, Pu-tsu-fong, Wa-ssu-kow, Ta-chien-lu, and How-kow: July.

Hab. Western China and Thibet.

Rumia inornataria, sp. n.

Sulphur-yellow. Primaries have an annulation at end of cell and two transverse lines on outer marginal area. Secondaries have a discal dot, a central band, and line beyond. All these markings, with the exception of the central band on primaries, are shadowy and indistinct. The costa of primaries is narrowly tinged with pink, and the fringes are slightly tinted with the same colour. Under surface: primaries have a subbasal line, annulation at end of cell, and a submarginal line, all rather clearer than above: secondaries have a central and a submarginal line, but neither are very distinct.

Expanse 50 millim.

One female specimen from Che-tou, July.

Hab. Western China.

Rumia sulphurea.

Rumia sulphurea, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 123 (1830); Ill. Typ. Lep. Het. vi. p. 54, pl. cxiv. fig. 6 (1836); Alph. Rom. sur Lép. vi. p. 51 (1892).

Alphéraky records one female specimen from the Province of Szechuen, taken in August.

Distribution. Sikhim (*Hampson*); Western China (*Alphéraky*).

Genus CORYMICA.

(Walk.; Hampson, Fauna Brit. Ind., Moths, iii. p. 185 (1895).)

Corymica specularia.

Caprilia specularia, Moore, Proc. Zool. Soc. Lond. 1867, p. 649, pl. xxxiii. fig. 11.

Thiopsyche Pryeri, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 393 (1878); Ill. Typ. Lep. Het. iii. p. 29, pl. xlviii. fig. 2 (1879).

Corymica vitrigera, Butl. Ill. Typ. Lep. Het. vii. p. 101, pl. cxxxv. fig. 14 (1889).

Corymica specularia, Hampson, Fauna Brit. Ind., Moths, iii. p. 186 (1895).

Appears to be common in Central and Southern Japan; it also occurs at Gensan in Corea and at Chia-ting-fu, Moupin, and Omei-shan in Western China, and Chang-yang in Central China.

Varies a good deal in depth of colour and also in definition of marking.

The Chia-ting-fu specimen agrees with *C. vitrigera*, Butl., which Hampson considers synonymous with *C. specularia*.

Distribution. Dharmsala; Sikhim; Nilgiris; Ceylon (*Hampson*); Japan; China.

Corymica gensanaria.

Corymica gensanaria, Leech, Entom., Suppl. p. 56 (May 1896).

One female specimen from Gensan, taken in July.

Hab. Corea.

Genus ILICRINIA.

(Hüb. n.; Hampson, Fauna Brit. Ind., Moths, iii. p. 186 (1895).)

Ilicrinia cordiaria.

Geometra cordiaria, Hüb. n. Geom. pl. viii. fig. 41, pl. lxvi. fig. 342.

Ilicrinia cordiaria, Hüb. n. Verz. Schm. p. 287; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 111.

Ilicrinia nuptaria, Brem. Lep. Ost-Sib. p. 80, pl. vii. fig. 5.

Ilicrinia cordiaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 186.

There were several examples of the *nuptaria* or pale yellow form of this species in Pryer's collection.

Distribution. South Europe; Syria; Kirghistan; Amur; Japan; Yesso; Kulu.

Ilicrinia flava.

Noreia flava, Moore, Lep. Atk. p. 233, pl. viii. fig. 2 (1887).

Ilicrinia flava, Hampson, Fauna Brit. Ind., Moths, iii. p. 187 (1895).

There is a specimen in the National Collection from Chekiang.

Distribution. Eastern China; Sikhim; Khásis; Nágas.

Genus *SPILOPERA.*

(Warr. Proc. Zool. Soc. Lond. 1893, p. 402.)

Spilopera debilis.

Heterolocha debilis, Butl. Ill. Typ. Lep. Het. ii. p. 47, pl. xxxv. fig. 9 (1878).

Spilopera debilis, Warr. Proc. Zool. Soc. Lond. 1893, p. 402.

There was a series in Pryer's collection. I took the species at Gensan in July, and I have received it from Hakodate. Pratt met with it at Chang-yang in June and July.

Distribution. Japan; Yesso; Corea; Central China.

Spilopera gracilis.

Endropia gracilis, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 371 (1879).

Paraclopsis gracilis, Warren, Novit. Zool. i. p. 463 (1894).

Spilopera gracilis, Hampson, Fauna Brit. Ind., Moths, iii. p. 190 (1895).

Several specimens in Pryer's collection. I took examples at Tsuruga and Gensan in July.

Hampson considers *S. umbrata*, Warr., to be synonymous with *S. gracilis*, Butl.

Distribution. Central and Southern Japan; Corea; Khásis; Assam.

Spilopera obliquilinea.

Epione obliquilinea, Moore, Lep. Atk. p. 229 (1887).

Spilopera obliquilinea, Hampson, Fauna Brit. Ind., Moths, iii. p. 192 (1895).

Five male specimens from Ichang and a female from Moupin, June and July.

Distribution. Eastern Himalayas; Central and Western China.

Spilopera angularia, sp. n.

Yellowish buff, suffused with brownish; outer marginal

area of all the wings tinged with rosy; a blackish-brown line commencing one fifth from apex of primaries is acutely angulated below apex and traverses both wings, terminating on middle of the abdominal margin; this line is inwardly shaded with olive-brown and followed at its termination by a blackish patch; there is a brown annular discal spot on primaries. Fringes brown. Under surface yellow, freckled with violet-grey; outer marginal area of all the wings clouded with rosy and limited by a violet-grey band; discal spot on primaries as above.

Expanse 31 millim.

Two male specimens from Kia-ting-fu, June.

Hab. Western China.

Allied to *Spilopera obliquilinea*, Moore.

Spilopera crenularia, sp. n.

Apex of primaries pointed, outer margin below apex crenulate to obtuse angle at end of third median nervule; outer margin of secondaries crenulate, angled about the centre. Pale ochreous, powdered with darker on outer marginal area. Primaries have two transverse rufous lines, the first is angulated below the costa, the second is parallel with outer margin and is followed on apical area by an almost square reddish patch with a rosy centre. Secondaries have an oblique rufous central line and an undulated dusky one beyond, but the latter is not clearly defined. Fringes pale brown, marked with darker. Under surface similar to above, but the outer line on primaries is broader and the outer one on secondaries more distinct.

Expanse 32 millim.

One male specimen from Chang-yang, August.

Hab. Central China.

Spilopera (?) *roseimarginaria*, sp. n.

Pale ochreous, clouded with pinkish, especially on costal and basal area of primaries; the basal area of primaries is limited by a diffuse fuscous band, which is angulated below costa; median band also fuscous and diffuse; outer marginal area greenish fuscous, tinged with rosy, mottled with blackish, and limited by a fuscous line obliquely angled below costa. Secondaries have a blackish discal dot and an interrupted diffuse central band; outer marginal area rosy, limited by a fuscous line, which is slightly incurved below costa. Fringes fuscous brown. Under surface rather more

yellow, and the outer area of secondaries is not rosy, but yellow, suffused inwardly with fuscous.

Expanse 40 millim.

One male specimen from Chang-yang and an example of each sex from Omei-shan, July.

Hab. Central and Western China.

Spilopera? divaricata.

Agathia? divaricata, Moore, Lep. Atk. p. 250, pl. viii. fig. 15 (1887).

Spilopera? divaricata, Hampson, Fauna Brit. Ind., Moths, iii. p. 192 (1895).

One male specimen from Omei-shan, July.

Distribution. Khásis; Western China.

Genus CRYPSICOMETA.

(Warren, Novit. Zool. i. p. 463 (1894).)

Crypsicometa incertaria.

Phasiane incertaria, Leech, Entom., Suppl. p. 49 (May 1891).

Phasiane incertaria, var. *suffusa*, Leech, l. c.

Crypsicometa incertaria, Warren, Novit. Zool. i. p. 463 (1894).

Several specimens of the type form from Yokohama (?) and Gifu in Pryer's collection, as well as an example of *suffusa* from each locality. Two examples of the var. *suffusa* were taken by my native collector in Kiushiu, and I received one female specimen of that form from Moupin, taken in July.

Distribution. Japan; Kiushiu; Western China.

Genus NADAGARA.

(Walk.; Hampson, Fauna Brit. Ind., Moths, iii. p. 193 (1895).)

Nadagara albovenaria, sp. n.

Pale brown, striated and freckled with blackish; neuration whitish. Primaries have two whitish lines, both oblique; the first is angled below the costa and outwardly edged with dark brown; the second is inwardly edged with blackish and preceded by a dark brown suffusion; there is a short oblique blackish dash from apex; discal spot black. Secondaries have a black discal spot and a whitish slightly curved line inwardly edged as on primaries. Fringes pale brown, traversed by a line of dark brown, chequered with dark brown on the primaries, except below apex, where there is a blackish spot, and preceded by a dark brown line. Under surface whitish brown, irrorated with fuscous, except on abdominal

margin of secondaries; discal spot and outer line as on upper surface.

Expanse 40 millim.

One example of each sex in Pryer's collection.

Hab. Japan.

Allied to *N. vigaia*, Walk.

Genus RHYNCHOBAPTA.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 194 (1895).)

Rhynchobapta cervinaria.

Noreia cervinaria, Moore, Lep. Atk. p. 233 (1887).

Rhynchobapta cervinaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 194 (1895).

Lozogramma (?) *bilineata*, Leech, Entom., Suppl. p. 48 (May 1891).

There were several specimens from Gifu in Pryer's collection. I have also received examples from Ichang and Changyang and from Omei-shan.

Distribution. Sikhim; Khásis (*Hampson*); Japan; Central and Western China.

Rhynchobapta punctilinearis.

Nadagra punctilinearis, Leech, Entom., Suppl. p. 55 (May 1891).

I obtained some specimens, including both sexes, at Nagasaki in May, and my native collector also met with examples in the island of Kiushiu.

Hab. Kiushiu.

Rhynchobapta flaviceps.

Nadagara flaviceps, Butl. Trans. Ent. Soc. Lond. 1881, p. 419.

Rhynchobapta flaviceps, Hampson, Fauna Brit. Ind., Moths, iii. p. 195 (1895).

I obtained this species at Fushiki and Tsuruga in July and at Nikko in September. Mr. Manley sent me specimens from Yokohama, and I have received examples from Kiushiu, where they were taken by a native collector.

It also occurs in June at Ichang and at Omei-shan in July, but I have only one example from each of these localities.

Distribution. Khásis (*Hampson*); Japan; Central and Western China.

Rhynchobapta flavicostaria, sp. n.

Leadens grey, without traces of transverse bands; all the wings have a black discal spot; costa of primaries yellow;

fringes yellow. Under surface as above, but fainter in colour.

Expanse 27 millim.

One female specimen from Ichang, June.

Hab. Central China.

Genus LUXIARIA.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 195 (1895).)

Luxiaria contigaria.

Acidalia? contigaria, Walk. Cat. Lep. Het. xxii. p. 754 (1861).

Acidalia inexactata, Walk. *op. cit.* xxiii. p. 770.

Acidalia tephrosaria, Moore, Proc. Zool. Soc. Lond. 1867, p. 643.

Luxiaria fasciosa, Moore, Lep. Atk. p. 254 (1887).

Luxiaria contigaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 195 (1895).

Bithia amasa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 405 (1878); Ill.

Typ. Lep. Het. iii. p. 45, pl. lii. fig. 4 (1879).

This species appears to be common in Western China, and all the forms enumerated above are represented. There was a series of the *fasciosa* (*amasa*) form from Ohoyama in Pryer's collection; I obtained specimens of the same form at Tsuruga and Gensan in July, and my collectors at Chang-yang and in the island of Kiushiu.

Distribution. Dharmśála; Sikhim; Khásis; Mahableshtar; Nilgiris; Ceylon; Sumatra; Borneo (*Hampson*); Japan; Kiushiu; Corea; Central and Western China.

Luxiaria consimilaria, sp. n.

Whitish, irrorated with greyish brown, most densely on costal area of primaries; there are three transverse pale pinkish-brown bands on primaries, but the first two are obscure, the third is fairly broad and extends from the apex to middle of the inner margin; this band is preceded by a series of black dots originating on the costa about one fourth from apex; there are also indications of a wavy submarginal line. Secondaries have three transverse bands; the first of these appears to be a continuation of the third on primaries; the second is fairly broad and is edged inwardly by a wavy blackish line; submarginal line obscure. Fringes whitish brown, preceded by a thin blackish line, which is dotted with black at the extremities of the nervules. Under surface whitish, freckled with greyish brown on primaries, especially on costal and basal areas; all the wings have two transverse dusky bands and a blackish discal spot.

Expanse 35 millim.

One male specimen from Moupin and one male and two females from Omei-shan, July.

Hab. Western China.

Closely allied to *L. obliquata*, Moore. Perhaps only a local form of that species.

Genus KRANANDA.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 648.)

Krananda semihyalina.

Krananda semihyalina, Moore, Proc. Zool. Soc. Lond. 1867, p. 648; Hampson, Fauna Brit. Ind., Moths, iii. p. 199 (1895).

I met with this species at Nagasaki in May, and there were a few specimens in Pryer's collection from Central Japan.

Distribution. Dalhousie; Sikhim; Khásis (*Hampson*); Japan; Kiushiu.

Krananda lucidaria, sp. n. (Pl. VI. fig. 10.)

Basal two thirds of primaries and half of secondaries diaphanous, clouded with brownish; outer third of primaries and half of secondaries clouded with purplish brown, except on the outer margin of the latter.

Primaries have a velvety black subbasal band transversely intersected by a pale sinuous line; on the inner margin towards the boundary of the diaphanous area there is a slightly oblique velvety-black bar, this is twice interrupted; there are some pale brown marks on costa before apex and on outer margin below apex; submarginal band sinuous, pale brown, bordered inwardly with dusky, but suffused below the costal portion. Secondaries irrorated with blackish; a brown cloud represents a diffuse oblique band terminating in a black mark just before abdominal margin; discal spot black; submarginal band pale, but not clearly defined. Under surface: basal portion of the wings whity brown, outer portion (except at apex of primaries and upper angle of secondaries) ferruginous brown, merging into ochreous on outer margin of secondaries; primaries have a ferruginous-brown crescent in the cell, which meets an elbowed transverse line of the same colour; secondaries have a slightly curved subbasal band, also ferruginous brown.

Expanse 58 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Krananda latimarginaria.

Krananda latimarginaria, Leech, Entom., Suppl. p. 56 (May 1891).

Trigonoptila latimarginaria, Warren, Novit. Zool. i. p. 441 (1894).

There were specimens in Pryer's collection. I have also received the species from Nikko and Gensan, July.

Distribution. Japan; Corea.

Krananda oliveomarginata.

Krananda oliveomarginata, Swinh. Ann. & Mag. Nat. Hist. (6) xiv. p. 139.

One specimen from Omei-shan, July.

Distribution. Khásis; Western China.

Genus ZANCLOPERA.

(Warren, Novit. Zool. i. p. 441 (1894).)

Zanclopera straminearia, sp. n.

Pale stramineous. Primaries have the base and costa tinged with pale ferruginous, and there is a transverse band of the same colour beyond the middle with some black dots inside it towards inner margin; this band is continued on the secondaries. Under surface similar to above, but all the wings have a black discal dot, and the transverse bands have black dots on them.

Expanse 40 millim.

One male specimen from Chang-yang, June.

Hab. Central China.

Genus MACARIA.

(Curtis; Hampson, Fauna Brit. Ind., Moths, iii. p. 201 (1895).)

Macaria hebesata.

Macaria hebesata, Walk. Cat. Lep. Het. xxiii. p. 931; Butl. Ill. Typ. Lep. Het. iii. pl. lii. fig. 1.

Macaria sinicaria, Walk. Cat. Lep. Het. xxvi. p. 1650.

Macaria proditaria, Brem. Lep. Ost-Sib. p. 81, pl. vii. fig. 7.

Macaria maligna, Butl. l. c. pl. lii. fig. 3.

Macaria irrorata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 440.

I have an extensive series of this very variable species, which was common in most of the localities in Japan that I visited, with the exception of the island of Yesso, where I did not see a specimen. Pryer, who had a fine series, seems to have considered that *irrorata* was distinct from *sinicaria*, but in his 'Catalogue of the Lepidoptera of Japan' he states,

when referring to *sinicaria*, "*hebesata* I believe to be the male, *maligna* the female." I must confess, however, that I cannot satisfactorily separate the specimens in my series into even two species. The series comprises examples agreeing respectively with each of the named forms, and all these are connected by intergrades; so that it is not possible to parcel them out into well-defined groups of varieties. It seems most probable that *hebesata* is the Asiatic representative of the European *æstimaria*.

Meyrick (Trans. Ent. Soc. Lond. 1892, p. 103) places *proditaria*, Brem., in *Opisthograptis*.

Distribution. China; Japan; Corea; Amur; E. Siberia; N. India.

Macaria pervolvata.

Macaria pervolvata, Walk. Cat. Lep. Het. xxiii. p. 930 (1861); Hampson, Fauna Brit. Ind., Moths, iii. p. 205 (1895).

Two female specimens from Chang-yang, June and August. One male example from Chia-ting-fu, July, and three females from the island of Kiushiu. In one female from Chang-yang the ground-colour is suffused with pale brownish, the discal spot is very minute, and there are no black spots beyond the outer line of secondaries.

Distribution. Bengal; Poona (*Hampson*); Central and Western China; Kiushiu.

Macaria defixaria.

Macaria defixaria, Walk. Cat. Lep. Het. xxiii. p. 932 (1861).

Macaria zuchera, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 405 (1878); Ill. Typ. Lep. Het. iii. p. 45, pl. lii. fig. 2 (1879).

A common species in Central and Southern Japan. I have received it from Gensan and Ningpo. It also appears to be common in Central and Western China, July.

Distribution. Japan; Yesso; Eastern, Central, and Western China.

Macaria intermediaria, sp. n.

Allied to *M. defixaria*, Walk., but the ground-colour is more suffused with brownish and the angulation of secondaries is less pronounced; the angle of third line of primaries is further from outer margin, and below the angle the line is less oblique. On the under surface the outer lines on both wings are more broadly suffused with ochreous. The black spots beyond the centre of transverse band are somewhat similar to the same character in *M. defixaria*.

Expanse, ♂ 34, ♀ 39 millim.

One example of each sex from Wa-shan and two females from Chia-ting-fu, July.

Hab. Western China.

Macaria cacularia.

Macaria cacularia, Oberth. *Etud. d'Entom.* xv. p. 24, pl. iii. fig. 32 (1891).

Occurs at Chia-kou-ho, Chia-ting-fu, Huang-mu-chang : July. I received specimens from each locality.

Hab. Western China.

Macaria monticolaria, sp. n.

Violet-grey. Primaries have three transverse lines; the first and second are elbowed below costa and near together, but not well defined; the third has an upward angulation below costa, bordered below the angle by a dusky shade and on the costa by a diffuse bracket-shaped mark. Secondaries have two transverse lines; the first is faint, but the second is double and well developed; beyond the outermost there is a deep black spot and some scales of the same colour indicating a second spot. All the wings have a faint blackish discal dot. Fringes pale, marked with darker at the extremities of the nervules and shaded with darker towards costa of primaries. Under surface whitish, coarsely speckled with dark brown: there are two dark, almost blackish lines on each wing; the first is oblique, wavy, and the second oblique and curved towards costa of secondaries; beyond the second line the outer margin is dark brown marked with ochreous, and there are patches of the ground-colour at apex and towards inner angle of primaries, and between the anal angle and the middle of outer margin of secondaries.

Expanse 36 millim.

One male specimen from the summit of Omei-shan, July.

Hab. Western China.

Allied to *M. intermediaria*.

Macaria elongaria, sp. n. (Pl. VI. fig. 14.)

Apex of primaries obtusely produced; outer margin of secondaries crenulate, with a small angular projection about the middle.

Whitish grey, powdered and clouded with brownish. Primaries have three transverse oblique brown lines, commencing as spots of the same colour on the costa; the first is elbowed below costa, the second has a slightly darker discal spot on it; the third is followed on the costa, below which it

is elbowed, by a rufous patch, and has a series of blackish marks, intersected by a thin white line, on its outer edge between the inner margin and the third median nervule; there is a brownish cloud below apex. Secondaries have two brown lines; the first is oblique, the second double, curved, slightly wavy, and enclosing a pale line; there are a series of black specks indicating a submarginal line, and the discal spot is black. Fringes pale at their base, darker outwardly, and preceded by a brown line. Under surface whitish, freckled with brownish, and tinged with ochreous on costa of both wings; brown transverse lines, except the first of primaries, which is absent, darker and broader than above; the outer one on each wing is followed by an outwardly diffuse band, which does not reach the inner margin in either case, and there are no black marks on that of primaries; the apical area beyond the outer line is brown, tipped with whitish; discal spot black.

Expanse 44 millim.

One male specimen from Moupin, July.

Hab. Western China.

On the under surface the markings approach those of *M. intermediaria*.

Macaria proximaria.

Parasemia Pryeri, Butl. Trans. Ent. Soc. Lond. 1881, p. 417 (nom. præoc.).

There was a fine series from Central Japan in Pryer's collection. I met with the species at Nagasaki in May and at Gensan in June. It also occurs in Central and Western China in June and July.

Distribution. Japan; Kiushiu; Corea; Central and Western China.

Macaria shanghaiaria.

Macaria shanghaiaria, Walk. Cat. Lep. Het. xxiii. p. 926 (1861).

Semiothisa (Macaria) graphata, Hedem. Horæ Soc. Ent. Ross. xvi. p. 51, pl. x. fig. 4 (1881).

There were a few specimens in Pryer's collection. I captured the species at Tsuruga in July and at Hakodate in August.

This species seems far more closely allied to *M. alternata* than to *M. notata*, with which latter Hedemann compares his *graphata*. I am inclined to think that it may be a local form of the first-named, which occurs in Amurland.

Distribution. N. China; Japan; Yesso; Amur.

Graphata, Hedem., is included in the genus *Opisthograptis*, Hübn., by Meyrick (Trans. Ent. Soc. Lond. 1892, p. 103).

Macaria Pryeri.

Macaria Pryeri, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 437 (1879).

There were specimens from Yokohama and Oiwake in Pryer's collection, and my native collector obtained a specimen in the island of Kiushiu.

Hab. Japan and Kiushiu.

Macaria intersectaria, sp. n.

Very near to *M. temeraria*, Swinh., but the second and third transverse lines of primaries are not sinuous; the latter is double, enclosing a pale buff line, obtusely angled below costa, and has a small black mark, intersected by the venation, above the middle; between the first and second lines there is a dusky diffuse band, which is continued on the secondaries; the submarginal white line commences at apex and terminates just above inner angle; it is slightly incurved about the middle, and there is a whitish patch in this curve. On the secondaries the white submarginal line terminates just before anal angle; there is a dusky band on central area, tapering towards costa and marked with black dots on the neuriation. Under surface very similar to that of *M. temeraria*, but the transverse lines are not wavy.

Expanse 40 millim.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

Macaria temeraria.

Macaria temeraria, Swinh. Trans. Ent. Soc. Lond. 1891, p. 492; Hampson, Fauna Brit. Ind., Moths, iii. p. 207 (1895).

I took specimens at Ning-po in April and at Nagasaki in June, and I have received the species from Chang-yang, where it was taken in July.

Distribution. Simla; Khásias; Nágas (*Hampson*); Kiushiu; Eastern and Central China.

Macaria ornataria, sp. n.

Pale brownish grey. Primaries have two interrupted dusky transverse lines before the middle, each originating in a brown spot on the costa; beyond the middle is a blackish fascia extending from costa to just below first median nervule, interrupted by the venation and separated by a line of the

ground-colour from a similarly interrupted blackish patch on its lower outer edge; between this fascia and the apex of the wing there is a brown spot on the costa. Secondaries have a dusky oblique line, which appears to be a continuation of the second one of primaries; beyond the blackish discal dot there is a blackish patch, interrupted by the median nervules and transversely by a slightly wavy line, which is dusky above and below the patch, but appears to be of the ground-colour in passing through it. Fringes pale at their base, darker outwardly, and preceded by a dusky lunulated line. Under surface fuscous, variegated with silvery white and suffused with ferruginous on apical area of primaries and sub-marginal area of secondaries; the basal area of each wing is also irrorated with silvery white.

Expanse 28 millim.

Two male specimens and two females from Moupin, July.

Hab. Western China.

Genus OPISTHOGRAPTIS.

(Hüb. n. ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 102 (part.))

Opisthograptis semilutata.

Eubolia semilutata, Led. Sib. Schmett. p. 29, pl. vi. fig. 3.

Opisthograptis semilutata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

Charodes dictynna, Butl. Ill. Typ. Lep. Het. ii. p. 45, pl. xxxv. fig. 7 (1878).

Syneugia? *Fentoni*, Butl. Trans. Ent. Soc. Lond. 1881, p. 412.

Occurs throughout Japan, and I met with it at Gensan and at Ningpo. I have also received it from Chang-yang.

Distribution. Siberia; Japan; Yesso; Kiushiu; Corea; Central China.

This species is exceedingly variable in colour, which ranges from bright ochreous through brownish grey to bright reddish brown; the markings, however, are fairly constant.

Opisthograptis corearia.

Halia corearia, Leech, Entom., Suppl. p. 50 (May 1891).

I took two male specimens and one female in June and one example of each sex in July at Gensan. I have also two males from Ichang. One of the male specimens from Gensan is of a uniform brown colour on the upper surface, except towards apex, where the ochreous yellow of the type form is exhibited.

Distribution. Corea; Central China.

Genus STRENIA.

(Dup. Lép. i. p. 112.)

*Strenia clathrata.**Phal. Geometra clathrata*, Linn. Syst. Nat. x. p. 524; Clerck, Icon. pl. ii. fig. 11.*Geometra clathraria*, Hübn. Geom. fig. 132.*Chiasmia clathrata*, Hübn. Verz. Schmett. p. 295.*Strenia clathrata*, Dup. Lép. viii. pl. cenvii. fig. 1; Guen. Phal. ii. p. 112.*Opisthograptis clathrata*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

I captured specimens at Hakodate, June and July, and at Nemoro in August; there were also a few examples in Pryer's collection from Yesso.

Distribution. Europe; Armenia; Altai; Amur; Japan; Yesso.

Genus TEPHRINA.

(Dup. Cat. Lép. Eur. p. 246 (1844); Hampson, Fauna Brit. Ind., Moths, iii. p. 219 (1895).)

Tephрина verecundaria, sp. n.

Brownish grey, with a slight violet tinge, irrorated with fuscous. Basal area of primaries rather darker, limited by a fuscous line, which is slightly angulated below costa; discal spot black; transverse line beyond the middle dark brown, curved below costa; the space between this line and the dusky waved submarginal line, which is only distinct towards costa, is filled in with darker. Secondaries have a black discal spot and dark brown central line, the latter bordered outwardly with darker. Fringes of the ground-colour, preceded on the primaries by a black dotted line and on secondaries by a series of black lunules. Under surface whity brown, mottled with fuscous on basal two thirds of primaries and half of secondaries, and ochreous yellow on outer marginal area; the latter is limited by a fuscous line and traversed by a diffuse fuscous band; discal spot black on all the wings.

Expanse 29 millim.

Two female specimens from Chow-pin-sa, May and June.

This species superficially resembles *Macaria hebesata*, Walk., except that the transverse lines are not angulated.

Hab. Western China.

*Tephрина arenacearia.**Geometra arenacearia*, Hübn. Geom. fig. 114.*Tephрина arenacearia*, Guen. Phal. ii. p. 105.

Eubolia flavidaria, Eversm. Bull. Mosc. 1852, p. 162.

Tephrina flavidaria, Guen. Phal. ii. p. 104.

Diastictis arenacearia, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

There were specimens of the typical form in Pryer's collection, and I took examples of the *flavidaria* form at Gensan in July.

Distribution. Europe; Amur; Corea; Japan.

Tephrina capulata.

Lozogramma capulata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 441 (1879).

There was a series from Yokohama and Oiwake in Pryer's collection, and I obtained specimens in Satsuma in May.

Hab. Japan; Kiushiu.

Tephrina brunneata.

Geometra brunneata, Thnb. Diss. Ent. i. p. 9 (1784).

Geometra pinetaria, Hübn. Geom. fig. 130, ♀ (post 1797).

Fidonia pinetaria, Guen. Phal. ii. p. 157.

Diastictis brunneata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

There were specimens from Oiwake in Pryer's collection.

Distribution. Europe; Altai; Amur; Japan.

Tephrina fuscaria.

Halia fuscaria, Leech, Entom., Suppl. p. 50 (May 1891).

Three specimens of each sex, from Oiwake and Yokohama, in Pryer's collection. One female from Ichang, August.

Distribution. Japan; Central China.

Tephrina adzearia.

Halia adzearia, Oberth. Etud. d'Entom. xviii. p. 33, pl. iv. fig. 62 (1893).

I received one male specimen from Moupin, taken in June, and a female from Che-tou, taken in July.

Oberthür records the species from Ta-chien-lu.

Hab. Western China.

Tephrina (?) flavescens.

? *Eubolia flavescens*, Alph. Rom. sur Léop. vi. p. 68, pl. iii. fig. 6, ♂ (1892).

Alphéraky records one example of each sex, taken in September at Termine-Bachine, North-western China.

Genus HYPOSIDRA.

(Guen. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 212 (1895).)

Hyposidra aquilaria.*Lagyra aquilaria*, Walk. Cat. Lep. Het. xxvi. p. 1485.*Hyposidra aquilaria*, Hampson, Fauna Brit. Ind., Moths, iii. p. 214 (1895).*Hyposidra Davidaria*, Pouj. Ann. Soc. Ent. Fr. 1895, p. 307, pl. vi. fig. 1.

I have specimens from Chang-yang, Ichang, Chia-ting-fu, Moupin, Omei-shan : June and July.

Distribution. Sikhim ; Shillong ; N. China (*Hampson*) ; Central and Western China.[I received a series of *Hyposidra talaca*, Walk., from the Loo-choo Islands.]*Hyposidra falcigera*.*Lagyra falcigera*, Butl. Ill. Typ. Lep. Het. ii. p. 45, pl. xxxv. fig. 4 (1878).

Three female specimens in Pryer's collection from Yesso.

Hab. Yesso.

Genus POGONITIS.

(Christoph. Bull. Mosc. Iv. p. 60 (1881).)

Pogonitis cumulata.*Pogonitis cumulata*, Christ. Bull. Mosc. Iv. 2, p. 61 (1881).*Deilinia cumulata*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 110.

A fine series from Oiwake in Pryer's collection.

Distribution. Amur ; Japan.

Genus DILINIA.

(Hübner. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 216 (1895).)

Dilinia exanthemata.*Phalæna exanthemata*, Scop. Ent. Carn. p. 218.*Geometra exanthemaria*, Esp. v. pl. xxxiii. figs. 3, 4.*Deilinia exanthemata*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 110.*Cabera exanthemaria*, Guen. Phal. ii. p. 55.I took one typical female specimen at Hakodate in August. Alphéraky (Rom. sur Léop. vi. p. 56) records a very damaged female specimen from Ou-pin, Western China ; possibly this is referable to the Chinese form of *D. Schæfferi*, which I have described as var. *sinicaria*.*Distribution*. Europe ; Armenia ; Amur ; Yesso.

Dilinia Schæfferi.

Cabera Schæfferi, Brem. Lep. Ost-Sib. p. 80, pl. vii. fig. 4 (1864).

I obtained specimens at Gensan in June.

This species can be readily separated from its allies by the distinct yellow bands, which are not in the least serrated.

Var. *sinicaria.*

Pale ochreous white, irrorated with brownish. Primaries have three rather broad, wavy, ochreous transverse lines, the first two elbowed below costa, and the third angled. Secondaries have two wavy ochreous lines. Fringes of the ground-colour. Under surface paler than above; all the wings have a dusky discal dot and indications of a transverse line beyond.

Expanse 36 millim.

A good series received from Ta-chien-lu and Ni-tou, June.

Distribution. Amur; Corea; Western China.

Dilinia purus.

Thysanochilus purus, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 404 (1878);
Ill. Typ. Lep. Het. iii. p. 44, pl. li. fig. 12 (1879).

There was a good series from Yokohama in Pryer's collection. I took the species at Gensan and Mr. Smith at Hakone in June.

Distribution. Corea; Japan.

Dilinia conspersaria, sp. n.

White. All the wings have black discal and marginal spots. Primaries have three, and secondaries two, brownish macular bands. Under surface white, with black discal and marginal spots and a brownish macular submarginal band; the costal area of primaries is suffused with fuscous, especially towards the base.

Expanse, ♂ 38, ♀ 43 millim.

Two male specimens and six females from Oiwake in Pryer's collection.

The species varies in the intensity of the markings.

Hab. Japan.

Dilinia tinagmaria.

Cabera tinagmaria, Guen. Phal. ii. p. 56 (1857).

A number of specimens were received from Omei-shan and Moupin and one example from Chia-ting-fu, July. I took

the species at Ningpo in April and at Tsuruga in July; my native collector met with it in June and July at Ningpo, and also obtained specimens in the island of Kiushiu. Guenée's type was from North China. Pryer does not seem to have met with this species.

Distribution. North and Western China; Japan; Kiushiu.

Dilinia griseo-limbata.

Phasiane griseo-limbata, Oberth. Diagn. Lép. Ask. p. 1 (Aug. 1879);
Etud. d'Entom. v. p. 50, pl. iv. fig. 14 (1880).

Nematocampa straminea, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 370
(Sept. 1879).

Stegania griseo-limbata, Hedem. Horæ Soc. Ent. Ross. xvi. p. 245, pl. x.
fig. 2 (1881).

Stegania ustulataria, Christ. Bull. Mosc. Iv. (2) p. 63 (1881).

Deilinia straminea, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 110.

There were specimens from Yokohama and Oiwake in Pryer's collection. I obtained the species at Hakodate in August.

Distribution. Askold; Amur; Japan; Yesso.

Dilinia capitata.

Pachydia capitata, Walk. Cat. Lep. Het. xxiii. p. 1019 (1861).

Tacparia? *morosa*, Butl. Trans. Ent. Soc. 1881, p. 403.

Dilinia capitata, Hampson, Fauna Brit. Ind., Moths, iii. p. 217 (1895).

There were two specimens in Pryer's collection, and I received one from Mr. Manley taken at Yokohama.

Distribution. Throughout India and Ceylon (*Hampson*); Japan.

Dilinia fasciata.

Bargosa fasciata, Moore, Proc. Zool. Soc. Lond. 1867, p. 634, pl. xxxii.
fig. 8.

Bargosa rivulosa, Butl. Trans. Ent. Soc. Lond. 1881, p. 410.

Dilinia fasciata, Hampson, Fauna Brit. Ind., Moths, iii. p. 217 (1895).

Butler's type was from Tokio. I did not obtain this species in Japan, and there were no specimens of it in Pryer's collection.

Distribution. Sikhim; Khâsis; Japan (*Hampson*).

Dilinia rufofasciaria, sp. n.

Primaries pale ochreous brown; basal area tinged and clouded with rufous; before the black discal dot there is an obscure curved and recurved rufous transverse line, and beyond the dot a diffuse rufous transverse band, becoming obsolete towards costa and reduced towards inner margin;

on the outer margin there is a series of faint brownish spots. Secondaries ochreous brown; outer margin bordered with paler, the inner edge of the border wavy; discal dot black. Under surface pale ochreous brown; primaries have a dusky band beyond the middle.

Expanse 32 millim.

One male specimen from Chang-yang, July.

Hab. Central China.

Dilinia albifrontaria.

Phasiane albifrontaria, Leech, Entom., Suppl. p. 49 (May 1891).

Several specimens from Gifu in Pryer's collection.

Hab. Japan.

Allied to *D. vexillaria*, Guen.

Genus TYCOONIA.

(Warren, Novit. Zool. i. p. 439 (1894).)

Tycoonina obliqua.

Tycoonina obliqua, Warren, Novit. Zool. i. p. 439.

I have not been able to see the type of this species.

Hab. Japan.

Genus HYPEPHYRA.

(Butler, Ill. Typ. Lep. Het. vii. p. 101 (1889).)

Hypephyra terrosa.

Hypephyra terrosa, Butl. Ill. Typ. Lep. Het. vii. p. 100, pl. cxxxv fig. 17 (1889).

Five male specimens were received from Chang-yang, one female from Omei-shan, one male from Yokohama and one from the island of Kiushiu.

Distribution. Simla; Dharmsala (*Hampson*); Japan; Kiushiu; Western and Central China.

Hypephyra Pryeraria.

Tacparia Pryeraria, Leech, Entom., Suppl. p. 56 (May 1891).

Three male specimens and two females from Gifu in Pryer's collection.

Hab. Japan.

Genus CROCOTA.

(Hübner; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 118; (part)
Hampson, Fauna Brit. Ind., Moths, iii. p. 220 (1895).)

Crocota mundataria.

Phal. Geometra mundataria, Cram. Pap. Exot. iv. p. 243, pl. cccc. fig. H.
Geometra mundataria, Hübner. Geom. figs. 375, 538.

Aspilates mundataria, Guen. Phal. ii. p. 186; Alph. Rom. sur Léop. vi.
p. 70 (1892).

Aspilates tonghata, Feld. Reise Nov., Lep. v. pl. cxxix. fig. 12.

Crocota mundataria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 119.

There were specimens from Fujisan in Pryer's collection, and I obtained the species at Oiwake in June and July and at Gensan in June. Specimens have been received from Chang-yang and Kiukiang, taken in June; Alphéraky notes the species from the Ite-got, a tributary of the Yellow River, N.W. China, taken in August.

Distribution. Europe; Altai; Armenia; Siberia; Amur; Corea; Japan; Central and North-western China.

Crocota formosaria.

Aspilates formosaria, Eversm. Bull. Mosc. 1837, p. 54, 1844, iii. pl. xv.
figs. 3 a, b; Guen. Phal. ii. p. 185.

Crocota formosaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 119.

Aspilates gloriosaria, Boisd. Ind. Gen. p. 188.

Some examples from Oiwake and Yokohama in Pryer's collection. I obtained specimens at Fusan in June and at Gensan and Nagahama in July; and my native collector took the species at Hakodate in June. One specimen was received from Chang-yang.

Distribution. Europe; Amur; Corea; Japan; Yesso; Central China.

Crocota curvaria.

Aspilates curvaria, Evers. Bull. Mosc. 1852, i. p. 167; Alph. Rom. sur
Léop. vi. p. 70, pl. iii. figs. 5 a, b, c, ♂ ♀ (1892).

One female is recorded by Alphéraky from the province of Chan-si, taken in June.

Distribution. Siberia; North-west China.

Crocota sordida.

Cleogene sordida, Butl. Trans. Ent. Soc. Lond. 1881, p. 418.

Butler describes this species from Tokio.

Hab. Japan.

Crocota (?) *punctaria*, sp. n.

Pale ochreous brown, irrorated and mottled with dark greyish brown; there is a fuscous discal spot and a transverse series of fuscous spots placed on the inner edge of a dusky band on outer marginal area. Secondaries whitish brown, with a blackish discal spot and a transverse series of blackish spots beyond the middle, the third and fifth larger than the others. Fringes greyish. Under surface as above, but the primaries are suffused with fuscous and the secondaries are irrorated with fuscous and tinged with ochreous on the costa and outer margins.

Expanse 50 millim.

One male specimen from How-kow, July.

Hab. Thibet.

Crocota (?) *geholaria*.

Aspilates geholaria, Oberth. *Etud. d'Entom.* vi. p. 18, pl. ix. fig. 3 (1881).

I am unacquainted with this species, but, judging from the figure, which represents a female, it does not appear to be rightly placed in *Aspilates*, Treit., = *Crocota*, Hübn.

Oberthür records it from the Géhol Mountains and also from the mountains to the north of Peking.

Genus DISCOREBA.

(Butler, *Ann. & Mag. Nat. Hist.* (5) i. p. 394 (1878).)

Discoreba simplex.

Discoreba simplex, Butl. *Ann. & Mag. Nat. Hist.* (5) i. p. 394 (1878);

Ill. *Typ. Lep. Het.* iii. p. 30, pl. xlviii. fig. 4 (1879).

Aspilates violentaria, Christ. *Bull. Mosc.* lv. (2) p. 82 (1881).

There were specimens of the typical form from Yokohama and Gifu in Pryer's collection.

Var. *punctaria*.

In both sexes of this form the transverse band of primaries is replaced by an oblique series of dots on the neuration. The ground-colour of the male is browner, and the primaries of the female are thickly dusted with blackish.

There were examples of this form in Pryer's collection, one of which was from Gifu.

Distribution. Japan; Amur.

Genus HYBERNIA.

(Latr.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 120.)

Hybernia leucophæaria.*Geometra leucophæaria*, Schiff. Wien. Verz. p. 101; Hübn. Geom. fig. 195.*Hybernia leucophæaria*, Dup. Léop. vii. pl. 156. figs. 4, 5; Guen. Phal. ii. p. 251.*Hybernia dira*, Butl. Ill. Typ. Lep. Het. iii. p. 50, pl. liii. fig. 7 (1879).

Several specimens from Yokohama in Pryer's collection.

Dira, Butl., is an unusually large specimen of *H. leucophæaria*. I have but one example in my series of the species which equals the type of *dira* in expanse, although several agree with the said type in other characters. The large specimen referred to was in Pryer's collection, and there was also a specimen which hardly expands one inch in the same collection.

The specimens from Japan exhibit considerable variation, but only one of the forms is peculiar; and as I have not seen an exact counterpart of it from Europe, I append the following description:—

Var. *nigrilinearia*.

Primaries pale ochreous grey; second line deeply indented below the middle; space between this line and the curved basal line thickly sprinkled with black scales, forming a dark median fascia, in the central portion of which is placed a pale oval patch; median nervure conspicuously black; before the apex is a blackish, oblique, abbreviated fascia. Secondaries normal.

Distribution. Europe; Japan.*Hybernia bela*.*Lozogramma bela*, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 406 (1878); Ill. Typ. Lep. Het. iii. p. 46, pl. lii. fig. 5 (1879).

Several male specimens from Yokohama in Pryer's collection.

Pryer, referring to this species in his 'Catalogue of the Lepidoptera of Japan,' p. 73, says "the female is semi-apterous, like *Hybernia progemmaria*."

Hab. Japan.*Hybernia verecundaria*, sp. n.

White, finely irrorated with fuscous, especially on pri-

maries. There are three transverse blackish lines on primaries—the first is slightly curved, the second serrated and curved to just above inner margin, where it is obtusely angled, the third is interrupted and merges into the dusky submarginal line at fourth vein; there is a blackish transverse dash on costa just beyond the first line and a dusky dot below it at the origin of second vein. Secondaries have a blackish transverse wavy line just beyond the middle; this does not extend to the costa, and on the inner margin is preceded by one and followed by two blackish marks. Fringes of the ground-colour preceded by blackish dots. Under surface whitish, suffused with fuscous, especially on the primaries; all the wings have a dusky discal mark, and the transverse lines of upper surface are faintly indicated.

Expanse 42 millim.

One male specimen in Pryer's collection.

Hab. Japan.

Genus APOCHEIMA.

(Hübner; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 121.)

Apocheima lefuaria.

Biston lefuarius, Erschoff, Horæ Soc. Ent. Ross. viii. p. 317 (1872); Hedem. xvi. p. 246, pl. xiii. fig. 13 (1881).

Nyssiodes olgaria, Oberth. Etud. d'Entom. v. p. 44, pl. iv. fig. 12 (1880).

Ereuxa maturaria, Christ. teste Hedem. Horæ Soc. Ent. Ross. xvi. p. 247.

Eremia maturaria, Christ. Bull. Mosc. lv. (2) p. 64 (1881); Stett. ent. Zeit. liv. p. 35 (1893).

Apocheima lefuaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 121.

There were some nice specimens from Yokohama in Pryer's collection. Mr. Andrews and my native collector took examples at Hakodate in June, and I received a male specimen from Chung-king.

Distribution. Amur; Askold; Japan; Yesso; Western China.

Genus PHIGALIA.

(Duponchel, Lép. iv. p. 296.)

Phigalia sinuosaria, sp. n.

Resembles *P. pedaria* from Europe, but the transverse markings of primaries are more wavy, the subbasal being angled below the middle and the submarginal nearer the margin of the wing; the central line of secondaries is serrated and always beyond the discal spot, and the outer line is evenly

curved. Larger than *P. pedaria*, and the thorax is far less robust.

Expanse 48–58 millim.

Four male specimens from Yokohama in Pryer's collection.

Hab. Japan.

Genus ZAMACRA.

(Meyrick, Trans. Ent. Soc. Lond. 1892, p. 121.)

Zamacra albofasciaria.

Apocheima albofasciaria, Leech, Entom., Suppl. p. 48 (May 1891).

Three male specimens from Yokohama in Pryer's collection.

Hab. Japan.

The genus *Zamacra* was founded by Meyrick (Trans. Ent. Soc. Lond. 1892, p. 121) for *flabellaria*, Heeg., previously placed in *Apocheima*, Hübn.

Genus BISTON.

(Leach ; Hampson, Fauna Brit. Ind., Moths, iii. p. 245 (1895).)

Biston emarginaria, sp. n. (Pl. VII. fig. 8.)

Outer margins of all the wings with two deep indentations.

Female.—Primaries white, sparingly freckled with black ; the basal area limited by an angulated black line and clouded with brown ; outer marginal area brown, limited inwardly by a sinuous black line and intersected by an indistinct dusky-bordered whitish line, which terminates in a whitish patch at inner angle. Secondaries have the basal two-thirds sparingly freckled with black ; the outer third is brown, bounded inwardly by a rather wavy black line and containing two white patches ; the lower, placed at anal angle, is marked with black. Under surface similar to upperside, but there is no brown on basal area of primaries. Fringes : of primaries blackish from costa to second indentation, thence white chequered with black ; of secondaries white, marked with brown at the angle. Antennæ white marked with black, simple. Head and thorax creamy, the latter sprinkled with black. Abdomen pale brown, marked with white and dotted with black.

Expanse 65 millim.

One female specimen from Pu-tsu-fong, June.

Hab. Western China.

Biston robustum.

Biston robustum, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 371 (1879).

A very fine series from Yokohama in Pryer's collection.

In one example of the male the ground-colour is decidedly greyish.

Var. *parva*, nov.

Much smaller than the type; the inner line of primaries is less acutely angled below costa, and the outer line rather more sharply angled. The male has the pectination of antennæ shorter, and is without brown or ochreous in the composition of its colouring and agrees almost exactly with the female, which is typical except as regards the minor points of difference referred to.

Expanse, ♂ 56, ♀ 64 millim.

One male specimen from Pu-tsu-fong, one female from Che-tou, and another from Ta-chien-lu: July.

Distribution. Japan; Western China.

Biston regalis.

Amphidasys regalis, Moore, Lep. Atk. p. 234 (1887).

Biston regalis, Hampson, Fauna Brit. Ind., Moths, iii. p. 245 (1895).

One male specimen from Ichang taken in June.

There is an example from Hakodate in the National Collection, and this, like the specimen from Central China referred to above, has the basal, medial, and apical areas whiter than in the Indian form.

Distribution. N.W. Himalayas; Khásis (*Hampson*); Yesso; Central China.

Biston tendinosaria.

Amphidasys tendinosaria, Brem. Lep. Ost-Sib. p. 73, pl. vi. fig. 17 (1864).

Phthonosema tendinosaria, Warr. Novit. Zool. i. p. 428 (1894).

There were specimens from Yokohama, Oiwake, Nikko, and Yesso in Pryer's collection.

I took the species at Gensan in June and at Fushiki in July, and it has also been obtained at Tokio.

Distribution. Amur; Corea; Japan; Yesso.

[*Biston fasciaria*, Motsch. Bull. Mosc. xxxix. p. 197.— I am unable to identify this species.]

Biston serratilinearia, sp. n.

Whitish brown, powdered with grey. Basal area of primaries rusty brown, bordered with darker; outer line black, serrated, followed by a diffuse rusty-brown band; sub-marginal line of the ground-colour; discal spot blackish, with

a dark brown cloud above it on the costa. Secondaries have a dusky transverse central shade (sometimes present also on the primaries), and beyond this there is a black serrated line followed by a band as on primaries; submarginal line of the ground-colour; discal spot blackish. Fringes concolorous with the wings, preceded by an interrupted line. Under surface whitish grey, a blackish discal spot and dark central line on each wing.

Expanse, ♂ 64-74, ♀ 83 millim.

One male specimen and two females from Moupin and a male from Omei-shan, July.

Hab. Western China.

Allied to *B. recursaria*, Walk., but distinguished by the form of the transverse lines, and also by the rusty-brown markings.

Biston recursaria.

Boarmia recursaria, Walk. Cat. Lep. Het. xxi. p. 374 (1860).

Amphidasys superans, Butl. Ill. Typ. Lep. Het. ii. p. 48, pl. xxxv. fig. 3 (1878).

Biston recursaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 246 (1895.)

Several specimens in Pryer's collection.

I captured examples at Nagasaki in May and at Shimonoseki in July. My collectors in Western China obtained one female specimen at Ta-chien-lu and another at Wa-shan, both in June.

Distribution. Sikhim; Khásis; Bassein; Burma; Java (*Hampson*); Japan; Kiushiu; Western China.

Biston invenustaria.

Amphidasys invenustaria, Leech, Entom., Suppl. p. 43 (May 1891).

Allied to *B. recursaria*, Walk.

Several specimens from Oiwake in Pryer's collection.

Var. *sinicaria*, nov.

Differs from the type in having the transverse lines blacker and the bands browner; between the second and submarginal lines there are some brownish clouds.

In one female specimen the black lines are absent.

My collectors obtained examples of this form at Wa-shan, Pu-tsu-fong, Ni-tou, Chia-ting-fu, Chia-kou-ho, Chang-yang.

Distribution. Japan; Central and Western China.

Biston suppressaria.

Amphidasys suppressaria, Guen. Phal. i. p. 210 (1857).

Buzura multipunctaria, Walk. Cat. Lep. Het. xxvi. p. 1531 (1862).

Buzura strigaria, Moore, Lep. Ceyl. iii. pl. clxxxviii. figs. 1, 1 a, b, c (larva) (1887).

Biston suppressaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 247 (1895).

Two male specimens and one female from Omei-shan, and one female from Wa-shan: June.

The female example from Omei-shan is more heavily powdered with black than the other specimens, and consequently looks much darker.

There is a specimen from Japan in the National Collection at South Kensington.

Distribution. Kángra; Sikhim; Assam; Calcutta; Ceylon; Japan (*Hampson*); Western China.

Biston thibetaria.

Amphidasys thibetaria, Oberth. Etud. d'Entom. xi. p. 32, pl. v. fig. 30 (1886).

Specimens have been received from Chang-yang, Ichang, Ta-chien-lu, Ni-tou, and Chia-ting-fu: June and July.

Oberthür's type was taken by M. Biet at Châpa.

Distribution. Central and Western China.

Genus MEGABISTON.

(Warren, Novit. Zool. i. p. 429 (1894).)

Megabiston plumosaria.

Biston plumosaria, Leech, Entom., Suppl. p. 43 (May 1891).

Megabiston plumosaria, Warren, Novit. Zool. i. p. 429 (1894).

There was a fine series from Yokohama in Pryer's collection.

Hab. Japan.

Genus MEGAMETOPON.

(Alphéraky, Rom. sur Léop. vi. p. 58 (1892).)

Megametopon piperatum.

Megametopon piperatum, Alph. Rom. sur Léop. vi. p. 58, pl. iii. fig. 3, ♂ (1892).

Alphéraky records this species from Tchin-Tassy, in the Province of Kan-sou: July.

Genus ELPHOS.

(Guen. Phal. i. p. 285 (1857).)

Elphos insueta.

Elphos insueta, Butl. Ill. Typ. Lep. Het. ii. p. 48, pl. xxxvi. fig. 2 (1878).

A few specimens from Ohoyama, Oiwake, and Fujisan in Pryer's collection.

Mr. Smith took one example at Hakone in August, and my collectors one at Moupin in July.

The Chinese specimen differs from Japanese examples in the much fainter colour of the yellow markings.

Distribution. Japan and Western China.

Genus XANDRAMES.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 634.)

Xandrames sericea.

Xandrames sericea, Butl. Trans. Ent. Soc. 1881, p. 409.

Xandrames latiferaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 250 (1895).

Several specimens from Fujisan and Nikko, confounded with *X. latiferaria*, in Pryer's collection.

My native collector captured some specimens at Hakodate in June or July. I have also received the species from Chang-yang, Moupin, Chia-ting-fu, and Ta-chien-lu: June and July.

I cannot agree with Hampson in regarding *X. sericea*, Butl., as synonymous with *X. latiferaria*, Walk. The two insects appear to me to be very distinct, especially as regards the markings of secondaries. Hampson's figure represents *X. sericea*, and not *X. latiferaria*; the latter is well figured by Butler (Ill. Typ. Lep. Het. iii. pl. xlix. fig. 11).

Distribution. Japan; Yesso; Central and Western China.

Xandrames latiferaria.

Pachyodes? latiferaria, Walk. Cat. Lep. Het. xxi. p. 445 (1860).

Elphos latiferaria, Butl. Ill. Typ. Lep. Het. iii. p. 36, pl. xlix. fig. 11 (1879).

One male specimen from Oiwake in Pryer's collection.

I captured a male at Hakodate in August, and I have specimens from Omei-shan, where they were taken in July and August, and others from Kiukiang.

Distribution. Japan; Yesso; Central and Western China.

Xandrames xanthomelanaria.

Xandrames xanthomelanaria, Pouj. Ann. Soc. Ent. Fr. 1895, p. 309, pl. vi. fig. 6.

Poujade records a male specimen from Moupin. I have an example of the same sex from Omei-shan, and one from Chia-kou-ho, taken in July.

Hab. Western China.

This species is allied to *X. sericea*, Butl., and *X. latiferaria*, Walk., most nearly perhaps to the former. It is, however, at once separated from either by the shape of the fascia on primaries and yellow border on secondaries.

Xandrames agitata.

Boarmia agitata, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 396 (1878);

Ill. Typ. Lep. Het. iii. p. 33, pl. xlvi. fig. 9 (1879).

Duliophyle agitata, Warren, Novit. Zool. i. p. 432 (1894).

Some specimens from Ohoyama and Nikko in Pryer's collection.

Mr. Smith took the species at Hakone in August, and there are specimens in the National Museum from Tokio, Yokohama, and Chiuzenji.

Hab. Japan.

Xandrames angustaria, sp. n.

Primaries ochreous, mottled and striated with dark brown; there is a fuliginous patch at the base; a subbasal band and a broad central fascia of the same colour, the latter interrupted in the middle and bordered outwardly on the costa by a patch of the ground-colour enclosing a dark irregular bar; submarginal line interrupted, preceded by some dark clouds below costa. Secondaries fuscous, finely striated with cupreous brown; there is a dusky discal dot and central line. Fringes of the ground-colour marked with fuliginous. Under surface fuscous, paler along costa of primaries; there is an irregular-shaped pale fascia beyond the middle of the wing enclosing a dark patch below costa; discal dot black.

Expanse 54 millim.

One specimen from Omei-shan, June.

Hab. Western China.

Genus GNOPHOS.

(Treitschke, Eur. Schmett. vi. p. 160 (1827).)

Gnophos muscosaria.

Gnophos muscosaria, Walk. Cat. Lep. Het. xxxv. p. 1596 (1866).

Gnophos muscosarius, Hampson, Fauna Brit. Ind., Moths, iii. p. 251 (1895).

One female specimen from Moupin taken in July.

Distribution. N.W. Himalayas; Sikhim (*Hampson*); Western China.

Gnophos approximaria, sp. n.

Greyish, powdered and marked with dark brown. Primaries have four transverse wavy lines and a transverse basal

shade: the first line is slightly indented below costa; the second is placed a little beyond the black discal spot and is closely followed by the third; this last is edged outwardly with whitish, and is nearer to the second on the inner margin than on the costa; the fourth (submarginal) is pale, preceded by a dark brown cloud towards costa and also towards inner margin. Secondaries have two wavy lines hardly traceable towards costa but terminating near together on the middle of abdominal margin; there is a short diffuse bar near anal angle. Fringes brownish, preceded by a black line. Under surface brownish grey; all the wings have a blackish discal spot and indistinct wavy central line.

Expanse, ♂ 50, ♀ 50-56 millim.

One male specimen and five females from Pu-tsu-fong, July.

As the male is not in good condition, I have described a female as the type; but the sexes do not appear to differ in markings.

Hab. Western China.

Gnophos pullata.

Gnophos pullata, Treit. Schm. vi. p. 179 (1827).

Pseudopanthera pullata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 117.

One male specimen, taken at How-kow in July, appears to be referable to this species.

The wings are dark grey, tinged with brownish as far as the second line on primaries and the central line on secondaries. The under surface is also darker. In some respects this specimen seems to agree with var. *confertata*, Staud. (Cat. p. 167) = var. *a*, Guen., from Styria.

Gnophos minutaria, sp. n.

Male.—Basal two-thirds of all the wings ochreous grey, irrorated with dark grey and limited by a serrated dark grey line which is followed by a whitish band; outer marginal area ochreous grey, clouded with dark grey and traversed by a whitish band; discal spot whitish, surrounded with dark grey. Fringes whitish grey, preceded by an interrupted black line. Under surface pale greyish; primaries suffused with fuscous, traversed by an ill-defined pale band; secondaries have a curved dusky band.

Female.—Similar to the male, but the dark grey clouding is less distinct.

Expanse, ♂ 24, ♀ 30 millim.

One male specimen from Pu-tsu-fong and one female from Moupin, July.

Hab. Western China.

Very similar to *G. variegata*, Dup., on upper surface, but on the underside there is no heavy black marking on the outer margins.

Gnophos lentiginosaria, sp. n.

Male.—All the wings white, heavily freckled and clouded with fuliginous grey. The primaries have a blackish patch on the costa extending to and enclosing the black discal spot; a smaller spot of the same colour lies between this patch and the base of the wing and a larger one beyond it, from which an interrupted narrow blackish band proceeds across the wing to the inner margin; just beyond this line is a large rather round blackish spot. Secondaries have a blackish discal spot. Fringes fuliginous grey, marked with white but hardly chequered, and preceded by a blackish line. Under surface of all the wings white; primaries are fuliginous grey on basal area, and a broad streak of the same colour extends to a break in the fuliginous-grey border of outer margin; the costa is narrowly ochreous and has three blackish spots on it, the second of these extends to the discal spot, and the third gives rise to a narrow blackish band, which crosses the wing almost to the submedian nervure: secondaries have the costa narrowly striated with dark grey, a blackish discal spot, and six or seven blackish spots forming a curved series from costa to inner margin. Antennæ simple. Head blackish. Thorax corresponds with the wings. Abdomen above greyish, marked with ochreous on the segmental divisions; entirely ochreous beneath; the legs also are greyish above and ochreous beneath.

Female.—Rather more ample in the wing, but colour and marking similar to the male.

Expanse 47–52 millim.

A nice series, comprising specimens from Ta-chien-lu, Pu-tsu-fong, Ni-tou, Moupin, and Omei-shan, the majority from the last-named locality: June and July.

Hab. Western China.

Gnophos accipitraria.

Gnophos accipitraria, Guen. Phal. i. p. 300 (1857).

Gnophus accipitrarius, Hampson, Fauna Brit. Ind., Moths, iii. p. 252 (1895).

One female specimen from Omei-shan and one from Moupin, May.

Distribution. N.W. Himalayas; Shillong; Sibságar, Assam (*Hampson*); Western China.

Gnophos lichenea.

Gnophos lichenea, Oberth. Etud. d'Entom. xi. p. 33, pl. v. fig. 33 (1886).

Gnophus licheneus, Hampson, Fauna Brit. Ind., Moths, iii. p. 253 (1895).

I have a long series, comprising both sexes, from Pu-tsu-fong, Moupin, Omei-shan, and Chang-yang: July.

Oberthür received the species from Tâ-t sien-Loû.

Distribution. Sikhim (*Hampson*); Western and Central China.

Gnophos theuropides.

Gnophos theuropides, Oberth. Etud. d'Entom. xv. p. 22, pl. iii. fig. 28 (1891).

Nine male specimens from Pu-tsu-fong and one example of the same sex from Moupin: June and July.

Oberthür records specimens from Tâ-t sien-Loû, captured by Mgr. Biet.

Hab. Western China.

Gnophos incolaria, sp. n.

Male.—Whitish grey. Basal half of primaries and the outer marginal area darker, the former traversed by an indistinct band of the paler ground-colour, in which there are some darker marks, and the latter intersected by a wavy line of the ground-colour; the whitish-grey area between these dark portions is clouded on the costa and inner margin, and is traversed by a wavy black line. Secondaries have the outer marginal area dark grey intersected by a paler wavy line and limited by a wavy black line; the remainder of the wing is sprinkled with dark grey scales; discal spots black. Fringes rather brownish grey. Under surface white, with black discal spots; basal area of primaries sprinkled with greyish, and the whole of the outer marginal area, except the apex, of primaries is dark grey; the secondaries have a dark grey submarginal band, and the lower two-thirds of the area beyond is sprinkled with dark-grey scales; fringes white, marked with brownish grey at the extremities of the nervules. Antennæ bipectinated.

Expanse 50 millim.

Two male specimens from Kwei-chow, June.

Hab. Western China.

Allied to *G. eolaria*, Guen.

Gnophos eolaria.

Gnophos eolaria, Guen. Phal. i. p. 294.

Gnophus eolarius, Hampson, Fauna Brit. Ind., Moths, iii. p. 253 (1895).

Two male specimens from Kwei-chow and one example of each sex from How-kow, July.

One of the examples from Kwei-chow is whitish grey, suffused with ochreous brown; the other is greyish, irrorated with pale brownish on the basal area of all the wings. The How-kow male is brownish grey, and the female is similar but more brownish on submarginal area.

Distribution. Himalayas; Punjaub; Khásis (*Hampson*); Western China; Thibet.

Gnophos mandaritaria, sp. n.

Whitish, striated and mottled with grey and tinged with ochreous on lower half of primaries and submarginal area of secondaries; a black discal spot on all the wings. The first line on primaries, which is slightly curved and rather wavy, commences as a spot on the costa and is marked with black on the nervures; the second line is serrated, slightly curved, and marked with black on the nervules; between these lines, but nearer the second, there is a dark fascia-like shade; submarginal line whitish, with a grey cloud before it at the costa, another just below, and a third on inner margin. Secondaries have a dark grey serrated central line, edged externally with whitish and preceded by a dusky shade; submarginal line as on primaries. Fringes grey, preceded by a series of black spots placed on a black line. Under surface of primaries brownish fuscous, paler on the margins, and of secondaries ashy; all the wings have a small discal spot and indications of a central line.

Expanse 44-50 millim.

Three male specimens from Wa-shan, June.

Hab. Western China.

This species is allied to *G. serotitaria*, Hübn. It varies in the intensity of the grey mottling.

Zoemma *Gnophos punctivenaria*, sp. n.

Male.—Whitish, powdered with brownish grey. The first and second transverse lines on primaries are greyish, their course indicated by black dots on the nervures and nervules respectively; the second line is preceded and followed by an olive-brown band which together with the dotted transverse line give the appearance of a fascia; the submarginal line is pale but indistinct, and is preceded by some olive-brown cloud-like patches. Secondaries have a serrated black central line becoming indistinct towards costa, preceded by an olive-brown shade; beyond there is an inwardly olive-brown bordered pale submarginal line; all the wings have a black discal spot.

Fringes brownish grey, preceded by a series of black elongated spots. Under surface of primaries fuscous with paler margins, and of secondaries greyish; blackish discal spot on all the wings, and the second line of primaries is indicated on the nervules. Antennæ more than half the length of primaries, bipectinated.

Female.—Rather browner, and the submarginal line on all the wings appears more distinct.

Expanse, ♂ 52, ♀ 46 millim.

I have specimens from Moupin, Ta-chien-lu, Wa-shan, Pu-tsu-fong, and Che-tou, taken in May and June.

Hab. Western China.

This species is subject to variation in tint and in the definition of the markings. Some examples are greyer than the specimens I have selected as types, and in others the markings are somewhat confused, but the black dots on the neuriation appear to be a constant character.

Gnophos lilliputata.

Gnophos lilliputata, Poug. Ann. Soc. Ent. Fr. 1895, p. 308, pl. vi. figs. 7, 7 a.

One example of each sex recorded from Moupin by Poujade.

Hab. Western China.

Gnophos (?) *thibetaria*.

Gnophos thibetaria, Oberth. Etud. d'Entom. ix. p. 21, pl. i. fig. 3 (1884).

Oberthür refers to the type as a very fresh female specimen which was taken by Mgr. Biet at Tâ-t sien-Loû.

The figure of this species does not seem to exhibit the characters of a *Gnophos*.

Gnophos gnophosaria.

Psodos gnophosaria, Oberth. Etud. d'Entom. xviii. p. 28, pl. iii. fig. 45 (1893).

Judging from the figure, I should say that this species is referable to *Gnophos*, and appears to be a close ally of *G. obscuraria*, Hübn., if it is not really a form of that species, from which it only appears to differ in the more pronounced character of the transverse line on under surface of the wings.

Hab. Western China.

Gnophos (?) *creperaria*.

Gnophos creperaria, Ersch. Hor. Soc. Ent. Ross. xii. p. 337 (1876); Hedem. op. cit. xvi. p. 247, pl. xiii. fig. 3 (1881).

Gnophos ? *creperaria*, Alph. Rom. sur Léop. vi. p. 63 (1892).

Alphéraky records a specimen, taken in September, at Youï-line-tchouan in the Province of Kan-sou, Western China, which he considers to be the female of *G. creperaria*, Ersch. Græser also records the species from Amurland.

Distribution. Siberia; Amur; Western China.

Gnophos fumosa.

Catascia fumosa, Warren, Novit. Zool. ii. p. 129 (1895).

Hab. Japan.

I have been unable to examine the type of this species.

Gnophos (?) exulta.

Tephrosia exulta, Butl. Trans. Ent. Soc. Lond. 1881, p. 408.

There were two female specimens from Yokohama and Oiwake in Pryer's collection. I have received two examples of each sex from Ta-chien-lu, and a female from Ni-tou: June and July.

Var. *brunnearia*, var. nov.

This form, of which I have only a male example from Omei-shan, differs from the type in its smaller size, pale brown ground-colour, and blackish blotch above outer angle of primaries; the indented marginal line of primaries is absent.

Distribution. Japan; Western China.

Genus BYLAZORA.

(Walk. Cat. Lep. Het. xxvi. p. 1549 (1862).)

Bylazora nigropunctaria, sp. n.

Primaries olive-green, marked with black at the base and on the neuration; there is a transverse line before the middle and one beyond the middle, each represented by black dots on the nervures and nervules, the dots in the first series are edged inwardly and those in the second series outwardly with whitish; submarginal line whitish, angled towards costa and curved towards inner margin, and followed by an interrupted and irregular black band; discal spot black, oval, enclosing a line of the ground-colour; fringes of the ground-colour, preceded by a series of whitish-edged black lunules. Secondaries whitish, freckled with fuscous grey; fringes brownish grey, preceded by a series of pale-edged blackish lunules. Under surface pale whitish brown, freckled with fuscous; all the wings have a blackish discal mark and a transverse series

of blackish dots beyond; primaries are suffused with fuscous on the disc, and have an interrupted blackish submarginal band.

Expanse 42 millim.

One female specimen from Pu-tsu-fong, June.

Hab. Western China.

Allied to *B. pilicostata*, Walk.

Genus OPHTHALMODES.

(Guen. Phal. i. p. 283 (1857).)

Ophthalmodes ocellata.

Boarmia ocellata, Leech, Trans. Ent. Soc. Lond. 1889, p. 143, pl. ix. fig. 11.

Diastictis saturniaria, Græs.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

Seven fine specimens from Oiwake in Pryer's collection.

I received specimens from Kiukiang, Ichang, Chang-yang, Moupin, Omei-shan, Wa-shan, and the Province of Kwei-chow: May, June, and July. In the National Collection there is a specimen labelled from Ningpo.

The Japanese specimens are rather whiter in ground-colour than the Chinese.

Distribution. Japan; Central, Western, and North-eastern China.

Meyrick appears to consider *ocellata* to be synonymous with *saturniaria*, Græs., but from the description alone of the latter it is rather difficult to decide upon this point.

Ophthalmodes herbidaria.

Ophthalmodes herbidaria, Guen. Phal. i. p. 283 (1857); Moore, Lep. Ceyl. iii. p. 417, pl. cxc. fig. 4, ♀ (1887).

Ophthalmodes diurnaria, Guen. *l. c.* p. 284.

Boarmia pertusaria, Feld. Reise Nov. pl. cxxv. fig. 17, ♂ (1874).

I have specimens from Chang-yang, Omei-shan, and the Province of Kwei-chow: July.

Distribution. N.W. and E. Himalayas; Assam; Ceylon (*Hampson*); Central and Western China.

Ophthalmodes cordularia.

Ophthalmodes cordularia, Swinh. Ann. & Mag. Nat. Hist. (6) xii. p. 155 (1893); *Hampson*, Fauna Brit. Ind., Moths, iii. p. 256 (1895).

One specimen from the Province of Kwei-chow, taken in July. This agrees with *O. cordularia*, Swinh., but, except that it has black palpi, is almost identical with *O. herbidaria*, Guen.

Distribution. Sikhim; Khásis (*Hampson*); Western China.

Ophthalmodes senex.

Boarmia senex, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 396 (1878); Ill.

Typ. Lep. Het. iii. p. 34, pl. xlix. fig. 3 (1879).

Boarmia hedemanni, Christ. Bull. Mosc. Iv. (2) p. 79 (1881).

Diastictis senex, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

Some nice specimens from Yokohama in Pryer's collection.

I captured the species at Gensan in July, and it was obtained by my collectors at Chang-yang and most of the localities in Western China that they visited.

The species seems to vary a good deal in size and also in the ground-colour, but this last may probably be due to condition.

Distribution. Amur; Corea; Japan; Central and Western China.

Ophthalmodes subpicaria, sp. n.

White, sparingly dusted with brownish, especially along the nervures and inner margins. Primaries have four equidistant brownish spots on costa; the fourth near apex and limiting, at that point, a broad greyish band on outer margin, which is interrupted about the middle, clouded with brownish above and below the interruption, and intersected by a whitish wavy line commencing in external edge of fourth costal spot, and terminating at inner angle. Secondaries have a dusky central spot, a curved series beyond, each spot placed on a nervule (a similar series of spots is present on primaries, but not so well defined); the outer margin is clouded with brownish towards both angles. Fringes brownish, faintly chequered with grey, and preceded by an interrupted black line. Under surface: primaries white, clouded with blackish on the costal portion of basal area and before apex; there is also a lesser cloud on the outer margin just above anal angle; discal spot black and conspicuous, showing through on upper surface; costa marked with black and dusky: secondaries have two black spots on costa, with some streaks of the same colour between them and towards the base of the wing; submarginal band blackish, interrupted about the middle and terminating before inner margin. Antennæ blackish; bipectinated in the male.

Expanse, ♂ 68, ♀ 72 millim.

One example of each sex from Omei-shan, and one male from Chang-yang: June.

Hab. Central and Western China.

Genus BUPALUS.

(Leach ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 107.)

Bupalus mirandus.*Bupalus mirandus*, Butl. Trans. Ent. Soc. Lond. 1881, p. 599.

Butler's type from Yokohama is a male. The female is ferruginous brown in colour, and the white markings are not quite so broad as in the male.

There was an example of each sex in Pryer's collection.

Hab. Japan.

Bupalus (?) davidaria.

Fidomia davidaria, Oberth. Etud. d'Entom. vi. p. 18, pl. ix. fig. 4 (1881).

Oberthür's type is a female taken in the north of China by M. l'Abbé Armand David. I have not seen an example of the species.

Genus NARRAGA.

(Walk. ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 107.)

Narraga fasciolaria.

Fidomia fasciolaria, Rott. var., Alph. Rom. sur Léop. vi. p. 64 (1892).

Narraga fasciolaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 107.

Alphéraky records one female example of a form of this species from the Province of Chan-si, North-western China.

Distribution. Europe ; Altai ; Ural ; Amur ; North-western China.

Genus SELIDOSEMA.

(Hübner, Verz. Schmett. p. 299.)

Selidosema catoteniaria.

Selidosema catoteniaria, Pouj. Ann. Soc. Ent. Fr. 1895, p. 313, pl. vii. figs. 15, 15 a.

Poujade's type was from Moupin ; I received specimens from that locality and also from Ta-chien-lu and Chang-yang, taken in June.

Var. *restrictaria*.

In this form the patches do not extend to the margins and the band on the secondaries is considerably restricted in width.

A male specimen from Wa-shan and a female from Chang-yang, June.

Hab. Central and Western China.

Selidosema sordida.

Selidosema sordida, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 406 (1878);
Ill. Typ. Lep. Het. iii. p. 46, pl. lii. fig. 7 (1879).

A fine series from Ohoyama, Nikko, and Oiwake in Pryer's collection. My native collector obtained the species at Hakodate in June.

Hab. Japan and Yesso.

Genus TEPHROSIA.

(Boisd. Ind. p. 198 (1840).)

Tephrosia luridata.

Geometra luridata, Bork. v. p. 235 (1794); Zell. Stett. ent. Zeit. 1853, p. 414.

Geometra extersaria, Hübn. Geom. fig. 159 (post 1797).

Tephrosia extersaria, Boisd. Ind. p. 198 (1829).

Ectropis luridata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

There were a few specimens from Oiwake in Pryer's collection.

My native collector took the species at Hakodate in June.

Japanese specimens are rather smaller than European examples; they are also more thickly powdered with brownish, and the pale spot on outer marginal area of primaries is of less size.

Distribution. Europe; Amur; Japan.

Tephrosia costipunctaria.

Tephrosia costipunctaria, Leech, Entom., Suppl. p. 47 (May 1891).

There were three specimens of each sex from Oiwake in Pryer's collection.

Allied to *T. luridata* and also to *T. punctularia* from Europe, but it is not likely to be confused with either of those species.

Hab. Japan.

Tephrosia biundularia.

Geometra biundularia, Bork. Eur. Schmett. v. p. 162 (1794).

Geometra crepuscularia, Hübn. Geom. pl. xxx. fig. 158.

Tephrosia crepuscularia, Guen. Phal. i. p. 268.

Ectropis biundularia, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

Boarmia crepuscularia, Hampson, Fauna Brit. Ind., Moths, iii. p. 260 (1895).

Boarmia nikkonis, Butl. Trans. Ent. Soc. Lond. 1881, p. 406.

Tephrosia excellens, Butl. Ann. & Mag. Nat. Hist. (5) xiii. p. 275 (1884).

There were several specimens from Nikko and Yesso in Pryer's collection. I took the species at Ningpo in April;

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at Nagasaki and in Satsuma in May; at Nagasaki, Tsuruga, and Gensan in July; at Hakodate in August. My native collector met with it in the island of Kiushiu.

I have also received a number of specimens from the various localities visited by my collectors in Central and Western China.

This species varies considerably in size both in China and Japan. The smallest specimen is only 26 millim. in expanse, whilst the largest measures 58 millim.

Nikkonis, Butl., is a strongly-marked example of the type form, and although rather larger is not otherwise different in any material respect from specimens I have seen from Scotland.

Excellens, Butl., is an unusually large form of the species; I have examples of it from Japan and Yesso.

Distribution. Europe; Amur; Corea; Japan; Central and Western China. N.W. Himalayas; Sikhim and Khâsis (*Hampson*).

Tephrosia grisescens.

Ectropis grisescens, Warren, Novit. Zool. i. p. 434 (1894).

Probably a form of *T. biundularia*.

The types are from China and Japan.

Tephrosia pongaria.

Tephrosia pongaria, Oberth. Etud. d'Entom. xviii. p. 27, pl. iv. fig. 53 (1893).

Recorded by Oberthür from Tâ-t sien-Loû (Ta-chien-lu).

I received two specimens from Moupin, where they were captured in June.

Hab. Western China.

Tephrosia punctularia.

Geometra punctulata, Hübn. Geom. fig. 317.

Boarmia punctulata, Dup. vii. pl. clxiii. fig. 5.

Tephrosia punctulata, Guen. Phal. i. p. 269.

Ectrepis punctularia, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

Tephrosia ignobilis, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 397 (1878); Ill. Typ. Lep. Het. iii. p. 35, pl. xlix. fig. 6 (1879).

There were specimens from Gifu and Yesso in Pryer's collection.

I obtained the species at Ningpo in April, and at Yokohama and Nagahama in June.

T. ignobilis, Butl., cannot be specifically separated from *T. punctularia*. The figure given in 'Illustrations' is not good.

Distribution. Europe; Siberia; Amur; Japan; Yesso; North-eastern China.

Tephrosia pygmæaria, sp. n.

Whitish, striated with yellow on outer half of all the wings. Primaries clouded with blackish on basal area; subbasal band represented by an upright blackish dash on inner margin, a cloud on costa; beyond the black discal spot there is a curved and recurved blackish band, followed by a curved series of blackish dots, which coalesce with the band towards inner margin; submarginal band blackish, twice interrupted and separated from an interrupted marginal band by a transverse line of the ground-colour. Secondaries clouded and spotted with blackish on basal area; submarginal and marginal bands as on primaries. Fringes yellow chequered with black. Under surface similar to above.

Expanse 20-24 millim.

Two male specimens from Chang-yang, June and July.

Hab. Central China.

Tephrosia brunnearia, sp. n.

Male.—Grey-brown, powdered with dark brown. Transverse lines of primaries dark brown and rather wavy; the inner is slightly elbowed below costa and thence oblique to inner margin; the outer is elbowed below costa and thence oblique to just above the inner margin, where it is slightly angled; between these lines there is a curved black discal spot and a dusky central line, the upper portion of the latter touches the extremities of the curved spot, forming together an annulated mark; beyond the second line the wing is clouded with dark brown and traversed by a whitish line. Secondaries have a slightly curved wavy brown outer line and an oblique brown band between it and the base of the wing; the area beyond the outer line is clouded with brown and intersected by a whitish line. Fringes agree in colour with the wings, but are rather darker at the ends of the nervules. Under surface ochreous, slightly powdered with brown scales, whitish along inner margin of primaries; lines brown as above, but faint; discal spot of primaries large, blackish; some dusky clouds on the outer marginal area of the wing. Antennæ finely ciliated.

Female less powdered with dark brown; transverse lines more distinct.

Expanse, ♂ 34, ♀ 32 millim.

A long series from Ichang and Chang-yang: June, July, and August. One male specimen from Moupin and one from Omei-shan, July.

Hab. Central and Western China.

Tephrosia noctivolens.

Tephrosia noctivolens, Butl. Trans. Ent. Soc. 1881, p. 598.

A fine series in Pryer's collection. The specimens are from Oiwake and Gifu, but chiefly from the former locality. Fenton obtained it at Tokio.

Hab. Japan.

Tephrosia (?) tindzinaria.

Tephrosia tindzinaria, Oberth. Etud. d'Entom. xviii. p. 26, pl. v. fig. 75 (1893).

Recorded by Oberthür from Tâ-t sien-Loû (Ta-chien-lu).

My collectors did not obtain this species, which, judging from the figure, is probably referable to *Cidaria*.

Hab. Western China.

Tephrosia (?) tamaría.

Tephrosia tamaría, Oberth. Etud. d'Entom. xviii. p. 26, pl. v. fig. 78 (1893).

Oberthür describes this species from specimens received by him from Tâ-t sien-Loû (Ta-chien-lu).

I have not seen an example, but from the figure I should consider that it is probably referable to *Cidaria*.

Hab. Western China.

Genus BOARMIA.

(Treitschke, Eur. Schmett. v. p. 433 (1825).)

Boarmia farracearia, sp. n.

Slaty grey, mottled and powdered with whitish; the most conspicuous of these pale marks on the primaries are a large patch on the costa enclosing the discal spot, one at apex, and a third about the middle of the outer margin; all these markings are more or less powdered with grey; there are three dark transverse lines or bands, but these are not well defined; submarginal line white and sharply serrated. Secondaries have two indistinct blackish transverse bands and a black discal spot; submarginal line as on primaries. Fringes white and dark grey, spotted with black at their base. Under surface whitish: primaries have the costa dusky and a deep blackish band on outer margin, spotted with whitish at apex and on the middle; secondaries have a broad blackish antemarginal band; all the wings have a black discal spot and central line.

Expanse 42-46 millim.

Five female specimens and one male from Wa-shan, Ta-chien-lu, Chow-pin-sa, and Chia-ting-fu; and one example of each sex from Moupin: June and July.

These eight specimens exhibit a good deal of variation in the amount of white: one example might be described as having the primaries whitish, with dark grey basal patch and broad submarginal band; this specimen, however, is rather worn. In two others the primaries are shorter and the outer margin rounder than in the type.

Var. fuliginaria.

Entirely suffused with fuliginous; submarginal line pale and conspicuous.

One male specimen from Ichang, June.

Hab. Central and Western China.

Boarmia duplexa.

Cleora duplexa, Moore, Lep. Atk. p. 239 (1887).

Boarmia duplex, Hampson, Fauna Brit. Ind., Moths, iii. p. 258 (1895).

One male specimen from Pu-tsu-fong, and a female from Omei-shan: July.

Distribution. Nepal; Sikhim (*Hampson*); Western China.

Boarmia nigrilinearia, sp. n.

Primaries ochreous grey, tinged with violaceous and irrorated with blackish; first line black, curved, preceded by a transverse blackish shade; second line black, sinuous, followed by a cupreous band-like shade; submarginal line blackish, wavy, most distinct towards costa; discal dot black. Secondaries grey, suffused and mottled with fuscous on discal area, the abdominal margin irrorated with blackish and marked with ochreous towards anal angle; central line blackish but rather obscure. Fringes grey, marked with fuscous, and preceded by an interrupted blackish line. Under surface grey, suffused and irrorated, especially on secondaries, with fuscous; all the wings have a dusky discal dot and central line; primaries have traces of a submarginal line most distinct towards the costa.

Expanse 34 millim.

One male specimen from Kia-ting-fu, June.

Hab. Western China.

Boarmia lenticularia, sp. n.

Primaries whitish, dusted with black and clouded with olivaceous; there is a black spot at the base; first transverse

line slightly indented; second line dentate, curved from below costa to above inner margin; submarginal line black, interrupted and indistinct; discal spot elongate. Secondaries whitish, freckled with brownish; discal spot black; central line blackish, interrupted. Under surface whitish, freckled with brown; the transverse markings of upper surface faintly reproduced on all the wings.

Expanse 34 millim.

One female specimen from Wa-ssu-kow, June.

Hab. Western China.

Boarmia recurvaria, sp. n.

Primaries brown, rather reddish on inner marginal area, and clouded with black at the base; there are two black transverse lines: the first is elbowed below costa and then runs almost straight to inner margin, the second commences in a spot on costa above the elongate black discal spot and is then curved and recurved to inner margin; submarginal line brownish black, indented below costa, interrupted below the middle, and outwardly edged with pale brown; the space between first and second lines is rather tinged with grey, and its upper portion sprinkled with black scales; the outer marginal area is also sprinkled with black scales. Secondaries pale brown, freckled with fuscous, except on the upper portion of the outer marginal area; discal spot and central line black, from the middle of the former there is a short downward streak which gives the idea of a line running in the direction of the anal angle. Fringes concolorous with the wings, and preceded by a blackish line. Under surface pale brown, basal and outer third of primaries darker, discal spot black; secondaries freckled with fuscous as above; spot and line also as above. Antennæ ciliated.

Expanse 42 millim.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

Boarmia decoraria, sp. n.

White, sparingly powdered with brown, more thickly on basal area, which is limited by a double blackish line indented below costa and above inner margin; there are indications of a central band most conspicuous on the costa; outer marginal area, limited by a curved and recurved blackish wavy line, has two brownish clouds on apical portion; submarginal line blackish, much interrupted and inwardly bordered with brownish. Secondaries have a blackish discal

dot, and the outer marginal area is marked similar to that of primaries. Fringes whitish, marked with brownish, and preceded by an interrupted black line. Under surface whitish, powdered with fuscous; all the wings have a black discal dot, an ill-defined dusky central shade, and a series of blackish dots beyond.

Expanse 25 millim.

A female specimen from Moupin, July.

Hab. Western China.

Boarmia tripartaria, sp. n.

Primaries brownish, with a broad whitish central band: first line curved; second line sinuous—these lines are black and there is blackish suffusion beyond the middle of the central band; there is a small blackish cloud on middle of costa. Secondaries greyish white, with a brownish, oblique, central line. Fringes brown and grey. Under surface greyish, freckled with darker: all the wings have dusky central lines. Antennæ finely ciliated.

Expanse 40 millim.

Two male specimens from Pu-tsu-fong, June.

Hab. Western China.

This species superficially resembles *Boarmia grisea*, Butl.

Boarmia lutearia.

Fidonia lutearia, Leech, Entom., Suppl. p. 50 (May 1891).

Three specimens from Oiwake in Pryer's collection.

Hab. Japan.

Boarmia petrosa.

Tephrosia petrosa, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 372 (1879).

Several specimens from Oiwake and one from Gifu in Pryer's collection.

I obtained the species at Tsuruga in July. Pryer also records it from Ohoyama and Nikko, and there is an example from Hakodate in the National Collection at South Kensington.

Hab. Japan and Yesso.

Boarmia opertaria, sp. n.

Primaries greyish, freckled with blackish; basal and outer marginal thirds brownish, each limited by a blackish line; there is a central, blackish, transverse shade with the black discal spot upon it, this terminates on inner margin near to the limiting line of outer third; submarginal band of the

ground-colour, indistinct towards inner margin, and inwardly edged with fuliginous. Secondaries brownish, freckled and striated with blackish; the blackish discal spot is preceded by a blackish transverse band, and followed by a series of blackish dots representing a central line; submarginal line as on primaries but more obscure. Fringes pale brown, preceded by a black lunulated line. Under surface greyish brown, suffused on the disc with fuliginous; all the wings have two blackish transverse lines, with the discal spot upon the first one; costa of primaries pale ochreous brown, striated with blackish. Antennæ fasciculate.

Expanse 36 millim.

One male specimen in Pryer's collection, and I received one from Mr. Manley of Yokohama.

Hab. Japan.

Boarmia tristaria, sp. n.

Brownish grey. Primaries have fuliginous-brown sub-basal, central, and outer bands, the two latter approximating on inner margin: all these markings are repeated on secondaries. The submarginal line is whitish on all the wings, but not so well defined as in *B. mæsta*. Under surface pale ochreous brown powdered with darker, and suffused with the darker colour on primaries; discal spot black; outer line only reproduced. Antennæ fasciculate.

Expanse 44 millim.

Two male specimens from Kiukiang, June.

Hab. Central China.

This species agrees with *B. mæsta* in the style of marking, but the ground-colour is darker and without any tinge of purple. The antennæ also are fasciculated and not bipectinated as in *B. mæsta*. It belongs to the *Prochina* section of *Boarmia*, Hampson, as also does *B. opertaria*.

Boarmia charon.

Tephrosia charon, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 397 (1878); Ill. Typ. Lep. Het. iii. p. 35, pl. xlix. fig. 4 (1879).

A few specimens from Yokohama and Oiwake in Pryer's collection. I captured examples at Nagasaki in May.

One female specimen from Chang-yang, June.

Distribution. Japan; Kiushiu; Central China.

Boarmia conjunctaria, sp. n.

Male.—Pale brown, heavily clouded and suffused with dark and rufous brown. Primaries have two black, wavy,

transverse lines and a dusky central transverse shade, the latter connected with second line just above inner margin; interrupted submarginal band of the ground-colour, bordered inwardly with fuliginous. Secondaries have a blackish subbasal band and an indistinct blackish central line; submarginal band as on primaries, but more deeply bordered with fuliginous. Fringes dark brown, paler at their base, and preceded by a lunulated black line. Under surface greyish brown; all the wings have a blackish discal dot and a series of short streaks indicating a transverse line beyond; outer margin of primaries bordered with fuliginous, especially towards apex. Antennæ fasciculate.

Female rather darker.

Expanse 42-44 millim.

One example of each sex from Ta-chien-lu, June.

Hab. Western China.

Superficially resembles *B. displicens*, Walk.; this and the preceding species belong to the subsection *Paradarisa* of Hampson's genus *Boarmia*.

Boarmia dilectaria, sp. n.

Whity brown, heavily powdered and clouded with rufous brown, and finely striated with blackish. Primaries have the basal patch darker brown, limited by a double, wavy, blackish line originating in a dark quadrate spot on the costa; discal spot black, surmounted by a blackish spot on the costa; beyond there is a blackish transverse line, which is angulated below costa and again above inner margin; submarginal band represented by a dark cloud on costa, with one below it and an upright elongate patch from inner margin. Secondaries have a black discal spot; serrated blackish central line; submarginal band interrupted above the middle and indistinct towards costa. Fringes of the ground-colour, chequered with blackish, and preceded by a black lunular line. Under surface ochreous brown; markings of upper surface faintly indicated. Body dark brown. Antennæ fasciculated.

Expanse 50 millim.

One male specimen from Ta-chien-lu, June.

Hab. Western China.

Boarmia boarmiaria.

Hypochroma boarmiaria, Guen. Phal. i. p. 282 (1857).

Boarmia inconclusa, Walk. Cat. Lep. Het. xxi. p. 382 (1860).

Boarmia boarmiaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 261 (1895).

One specimen from Kagoshima, in the province of Satsuma, in Pryer's collection.

Distribution. Formosa; Sikhim; Assam; Nágas; Ceylon (*Hampson*); Kiushiu.

Boarmia parvularia.

Tephrosia parvularia, Leech, Entom., Suppl. p. 47 (May 1891).

Two specimens of each sex from Gifu in Pryer's collection.

Hab. Japan.

This species is allied to *B. inceptaria*, Walk., which *Hampson* places in the *Psilalcis* section of *Boarmia*.

Boarmia Rybakowi.

Boarmia Rybakowi, Alph. Rom. sur Lép. vi. p. 61, pl. iii. fig. 4, ♂ (1892).

Alphéraky records this species from Ou-pin, province of Kan-sou, July.

Boarmia selenaria.

Geometra selenaria, Hübn. Geom. fig. 163.

Ophthalmodes cretacea, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 373 (1879).

Boarmia selenaria, *Hampson*, Fauna Brit. Ind., Moths, iii. p. 264 (1895).

Ascotis selenaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 106.

There were four male and three female specimens in Pryer's collection.

I met with the species at Nagahama in June, and at Fushiki and Gensan in July.

I have also received the species from Ichang, Omei-shan, Ta-chien-lu, Chow-pin-sa, Chia-ting-fu: June and July. Alphéraky (Rom. sur Lép. vi. p. 60) records it from the province of Kan-sou, taken in September.

Distribution. N.W. Himalayas; Nepal; Khásis; Congo; S. Africa (*Hampson*); Europe; Altai; Amur; Corea; Japan; Central and Western China.

Boarmia sordida.

Ascotis sordida, Warren, Novit. Zool. i. p. 435 (1894).

Probably a small form of *B. selenaria*.

Hab. Corea.

Boarmia stipitaria.

Boarmia stipitaria, Oberth. Etud. d'Entom. v. p. 45, pl. iv. fig. 6, ♂ (1880); Gräser, Berl. ent. Zeit. 1888, p. 400.

Six male specimens and one female, from Oiwake and Yesso, in Pryer's collection. I captured one male example at Gcnsan in June.

The wings of this species are white, as Oberthür correctly describes them; but his figure represents a brownish-tinged insect.

Distribution. Askold; Amur; Japan; Corea.

Boarmia glabraria.

Geometra glabraria, Hübn. Geom. figs. 162, 339.

Cleora glabraria, Guen: Phal. i. p. 233.

Selidosema glabraria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 106.

There was one specimen in Pryer's collection, and I took two examples at Shikotan (Kurile Islands) in August. I have one female from the province of Kwei-chow, taken in July; this specimen has a rather broad border on outer margin of primaries.

Distribution. Europe; Japan; Kurile Islands; Western China.

Boarmia repandaria.

Phal. Geometra repandata, Linn. Syst. Nat. i. p. 866.

Boarmia repandaria, Treit., Guen. Phal. i. p. 238 (1857).

Selidosema repandata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 106.

Boarmia perspicuata, Moore, Proc. Zool. Soc. Lond. 1867, p. 630.

Boarmia trikotaria, Feld. Reis. Nov. v. pl. cxxvi. fig. 10 (1874).

Boarmia iterata, Butl. Proc. Zool. Soc. Lond. 1886, p. 389.

Aleis nudipennis, Warr. Proc. Zool. Soc. Lond. 1888, p. 320.

Boarmia repandata, var. *nobilis*, Alph. Rom. sur Léop. vi. p. 61 (1892).

Appears to be a common species in Central and Western China.

Some of the specimens are not separable in any way from more or less typical European examples. The majority, however, although modifications of the form, are referable to *trikotaria*, Feld. There are also specimens agreeing with *iterata*, Butl., on the one hand, and with *nudipennis*, Warr., on the other, and the connecting-links between these two forms are represented.

One specimen of the *iterata* form was taken by my native collector at Ningpo.

Var. *obsoletaria*, nov.

Pale brownish grey; markings, with the exception of discal dots and obscure dark transverse lines, obsolete.

Four male specimens from How-kow, Thibet: July.

Distribution. Europe; Armenia; Altai; Siberia; Amur; N.W. India; Central, Western, and North-eastern China; Thibet.

Boarmia picata.

Boarmia picata, Butl. Trans. Ent. Soc. 1881, p. 408.

Three specimens from Oiwake in Pryer's collection; Butler's type was from Tokio.

I am inclined to think that *B. picata*, Butl., is only a form of *B. repandata*, but should like to see a larger number of specimens before giving a definite opinion.

The markings are, as regards colour, similar to those of *B. repandata*, var. *conversaria*, but they are transposed.

Hab. Japan.

Boarmia columbinaria, sp. n.

Basal half of primaries dark grey, its external edge clearly defined, dentated and marked with black on the costa and inner margin; beyond there is a large white patch, the costal portion of which increases in width as it approaches the inner margin; a wavy white line traverses this pale band from the white patch to inner margin, where it is most distinct; the outer marginal area is not quite so dark as the basal half of the wing, and about its middle there is an almost square pale patch; submarginal line whitish, bordered inwardly with dark grey. Secondaries have the basal third dark grey, clearly defined; outer third not so dark as the basal; the intermediate area is whitish, dusted with grey, most densely towards the outer area, and traversed by a narrow interrupted blackish band. Fringes pale grey, variegated with darker and preceded by a lunulated blackish line. Under surface fuliginous grey, with pale patches on central area, apex, and middle of outer margin of primaries; the basal two thirds of secondaries also pale. Antennæ bipectinated.

Expanse 48 millim.

One male specimen from Chang-yang, June.

Hab. Central China.

Boarmia secundaria.

Geometra secundaria, Hübn. Geom. pl. xxix. fig. 156.

Boarmia secundaria, Dup. Léop. iv. pl. clxii. fig. 2; Guen. Phal. i. p. 237.

Selidosema secundaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 106.

Four specimens from Yokohama and Oiwake in Pryer's collection seem to be referable to this species. The transverse markings, however, are not so distinct, and the second line of primaries is less serrated.

This form may be known as var. *simpliciaris*.

Distribution. Europe; Japan.

Boarmia cinctaria.

Geometra cinctaria, Schiff. Wien. Verz. p. 101; Hübn. Geom. fig. 166.

Boarmia cinctaria, Treit. Schmett. vi. 1, p. 188; Dup. Léop. vii. pl. clix. figs. 2, 3.

Selidosema cinctaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 105.

Boarmia insolita, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 396 (1878); Ill. Typ. Lep. Het. iii. p. 34, pl. xlix. fig. 5 (1879).

There was a fine series from Oiwake and Yesso in Pryer's collection. My native collector took specimens at Hakodate in June.

Some of the specimens are identical with European examples, but others are of the pale form which Butler has described as *insolita*, a variety of *B. cinctaria*, which, according to Græser, also occurs in Amurland.

Distribution. Europe; Altai; Eastern Siberia; Amur; Japan; Yesso.

[To be continued.]

XXXII.—*On a new Mouse from Damaraland*.

By W. E. DE WINTON.

IN a paper on a small collection of rodents made by Mr. C. J. Andersson in Damaraland, Mr. Oldfield Thomas (P. Z. S. 1882, p. 266) refers four specimens of a mouse to *Mus silaceus*, Wagn. This determination was found to be wrong by Mr. Thomas himself on visiting the Munich Museum some years later, when he was able to examine Wagner's type. As I have lately been working at the rodents of South Africa, Mr. Thomas very kindly asked me to look at these mice, giving me the benefit of his valuable notes and drawings of the skull of *Mus silaceus* made on the spot. I find the Damaraland mice belong to an undescribed species of a group of which I believe the form hitherto known is *Mus nigricauda* from the same locality and described in the paper referred to above.

The species may be known as

Mus damarensis, sp. n.

Size somewhat larger than *Mus sylvaticus*. Fur long and soft, of that peculiar colour usually associated with desert-living species. Colour above reddish fawn or isabelline, sparingly sprinkled with very fine darker hairs, the colour richest along the dorsal line, fading gradually into grey on the sides and cheeks, all the lower parts with the feet and hands pure white, the hairs being white to their bases. Ears

very large, covered inside and out with short reddish hairs. Whiskers long and numerous. Tail long, about equal in length to the head and body; the proximal half having short hairs of the same colour as the back; on the distal portion the fine silky hairs gradually lengthen till it may be called bushy; these longer hairs are almost liver-colour throughout. The scales, which are almost entirely concealed by the hair throughout the length of the tail, are exceedingly fine, about twenty to the centimetre. The feet are thick in the digital portion, the pads very large and rounded, entirely covering the fore part of the foot. The claws of both fore and hind feet are very small and curved, almost concealed by the hairs.

The actual locality of the type (B. M. no. 97. 2. 18. 1) is unknown, but one of the specimens is endorsed "Otjimbingue, Damaraland."

Measurements (taken from the skin):—

Head and body 135 millim.; tail 135* ; ear (relaxed) 20·5; hind foot (relaxed) 24.

The skull is chiefly remarkable in having extremely wide open infraorbital openings and very short snout. The supra-orbital ridges are well developed, but not beaded. The teeth are rather broad. The palate narrow and furrowed; the foramina extend back about half the length of $\frac{m.1}{m.2}$, the back of the palate is even with the back of the molars.

Measurements:—Skull 31 millim.; br. 16; constr. 4·5; nasals $10·5 \times 2·5$; interpar. $4·5 \times 9·5$; hens. to back of pal. 13·1; pal. foram. 7·5; $\frac{m.3}{m.2}$ 5·3; diastema 7·5; br. outside $\frac{ms.1}{m.2}$ 6, inside 2·5; mandible, length (bone only) 17, to tips of incisors 20, height 9·2.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

January 6, 1897.—Dr. Henry Hicks, F.R.S.,
President, in the Chair.

The following communication was read:—

1. 'On the Structure of the Skull of a Pliosaur.' By C. W. Andrews, Esq., B.Sc., F.G.S.

The paper deals with a specimen of the Plesiosaurian known as *Pliosaurus ferox*, Sauvage, obtained by Mr. A. N. Leeds from the Oxford Clay near Peterborough, and now in the British Museum,

* The tail of the type specimen being broken, this measurement is taken from another specimen (B. M. no. 81. 8. 3. 11) from the same locality of about the same size.

and perhaps the finest Pliosaur skull known. It bears a great similarity to *Peloneustes philarchus*, but there are a number of differences which tend to show that the subject of the present communication is not the skull of an old individual of *Peloneustes*. Although the teeth of the fossil here described agree precisely with those described by Sauvage from the same horizon at Boulogne under the name *Liopleurodon ferox*, they differ considerably from those of the Kimeridge Clay upon which Owen founded the genus *Pliosaurus*; they, however, show a distinct tendency towards the typical form, and since the skull and skeleton of the Oxfordian and Kimeridgian forms are, so far as known, closely similar, the Author prefers for the present to follow the British Museum Catalogue in referring them both to one genus, *Pliosaurus*.

The Author gives a detailed description of the skull which forms the subject of the paper.

February 3, 1897.—Dr. Henry Hicks, F.R.S.,
President, in the Chair.

The following communication was read:—

1. 'The Subgenera *Petalograptus* and *Cephalograptus*.' By Miss G. L. Elles.

The forms referred to in the paper are accepted as subgenera of *Diplograptus*, as defined by Lapworth. The two subgenera have frequently been much confused, but examination of specimens preserved in relief shows that they have very distinctive characters, especially at the proximal ends. The Author gives diagnoses of the two subgenera, and detailed descriptions of the following forms:—*Petalograptus folium*, His.; *P. palmeus*, Barr., and varieties *latus*, Barr., *tenuis*, Barr., *ovato-elongatus*, Kurek; *P. ovatus*, Barr.; *P. n. sp.*; *Cephalograptus cometa*, Gein.; and *C. n. sp.*

She concludes that *Petalograptus* has been derived from *Orthograptus foliaceus*, *O. truncatus* having been a step on the way. The latter form has an almost horizontal connecting-canal, so that the first of the second series of hydrothecæ arises at nearly the same level as the first of the primordial series; whilst, if the connecting-canal became more oblique and the thecæ more concavely curved, a form identical with *P. palmeus* would be the result. Further changes would give rise to *P. n. sp.*, and subsequently to *P. folium*. When the first theca of the second series arises so late that the sicula is entirely free on the side remote from that on which the first of the primordial series arises, an important stage is reached, and the form becomes a *Cephalograptus*. Such a form is furnished by *C. n. sp.*, which is in some respects intermediate between *Petalograptus* and *Cephalograptus*. The extreme form is reached in *C. cometa*, in which the first hydrotheca of the second series is still later, the hydrothecæ are still longer than those of earlier forms and almost parallel to the long axis of the rhabdosoma. The other known forms of *Petalograptus* may have been derived from *P. palmeus*.

It seems exceedingly likely that the *Petalograpti* had a *Phyllograptus* as a remote ancestor, but the evidence for this is not yet complete, nor can the Author state whether *Cephalograptus* had a further stage in a form of *Dimorphograptus*.

MISCELLANEOUS.

What are the Names of the Crayfish and Lobster?

By R. I. Pocock.

THE hope of being able to supply an answer to the above question gives me the courage at this juncture to intervene in the discussion concerning *Astacus* and *Potamobius* started in the 'Annals' of last December by Prof. Bell; for, in spite of all that has been written on the subject, it may be doubted whether those who are not specially conversant with the questions of nomenclature that have been raised are any more enlightened as to the correct names of these now famous crustaceans than they were before the controversy began.

It seems to me, however, that the question may be set at rest by the application of a principle in nomenclature which is becoming widely accepted amongst systematic zoologists, and will doubtless be universally admitted when our views are a little more coherent and advanced than they are at the present time. It is one of the principles for selecting the type species of a genus when no type has been designated by its author, and may be stated as follows:—When the name of a genus is the same as that of one of its component species, that species is the type of the genus.

If this principle be applied to the case of the lobster and the crayfish, it will be found that the name *Astacus* must be attached to the latter, for in both the tenth and twelfth editions of the 'Systema' Linnæus called the Swedish crayfish *Cancer astacus*; and since *Astacus* was subsequently used by both Gronovius and Fabricius as a generic term for a group comprising amongst other species the *Cancer astacus* of Linnæus, the latter is *ipso facto* the type of the genus *Astacus*. Therefore the name of the Swedish crayfish is *Astacus astacus* (Linn.). With *Astacus* thus fixed definitely on to the crayfish, *Homarus* will, it seems, without let or hindrance, resume its place for the lobster, with the specific name *gammarus* which Linnæus assigned to it.

This appears to me to be a sensible and simple solution of this and other similar cases. In the present instance it does away with difficulties arising in connexion with the subsequent actions of Leach, White, Milne-Edwards, and others, and is independent of the selection of the tenth or twelfth edition of the 'Systema' as the starting-point in systematic zoology.

In conclusion, there is one little point about which it may perhaps be permitted to me to put Mr. Stebbing right. From some words that appear in his contribution to the present discussion it is to be inferred, though perhaps wrongly, that he considers a semi-official system of nomenclature to be in vogue at the Natural History

Museum, and agreement on this point to exist amongst the members of the staff. Happily nothing could be further from the truth. There may be some subjects about which unanimity could be found, but nomenclature is certainly not one of them.

The Lobster and the Crayfish: a Reply.

By the Rev. THOMAS R. R. STEBBING, M.A., F.R.S., F.L.S.

Pallas, in his 'Spicilegia Zoologica,' fasc. ix. p. 81, speaks of a crayfish as *Astacus dauuricus*. Since this was in 1772, Dr. Arnold Ortmann, in a courteous letter, asks what bearing this may be thought to have on the claim of Fabricius in 1775 to rank as the first Linnean authority for *Astacus*. Dr. Ortmann indicates in advance his acceptance of the appropriate answer. Pallas is neither defining a genus nor even instituting a new species, for he speaks of *Astacus dauuricus* as a variety of the common crayfish, and proceeds to give a "Descriptio Cancræ dauurici," in which he says that "Forma atque proportione Astaco nostrati minori persimilis est." It is evident that he is using *Astacus* only as a customary designation for a subdivision of the still-maintained genus *Cancer*, and by his reference to a minor *Astacus* he implies a major species, which would have had preference as type if at that time any question had arisen as to the proper type species of *Astacus*. In his index *dauuricus* becomes *dauricus*, but under neither spelling can it become the type of a genus which by the very terms of the description possessed an earlier species.

From Pallas I must return to Professor Bell and endeavour to deal in orderly method with the six points of his crushing reply.

(i.) In regard to the date of *Nephrops*, he is surprised at my supposing that he referred to Leach's article "Crustaceology," instead of to Leach's paper in vol. xi. of the Linnean 'Transactions.' Yet what else could or can be supposed, since he himself gave the date 1814, which applies to the former and does not apply to the latter? To be sure the "Crustaceology" is unsigned, and an edition of it may have appeared in 1813, but, seeing that Leach claimed it as his own on the very first day of January, 1815, it is rather my turn to be surprised that Professor Bell should refer to it as "an anonymous article of uncertain date."

(ii.) That the genera of Gronovius "are as good as those of" Brisson may or may not be true, but that the particular genus *Astacus* was instituted by Gronovius, or was so defined or so used by Gronovius as to give him any title to be the authority for it, may be with confidence denied. Besides, the whole question turns on the choice of a type species, and the Gronovian species are admittedly out of court.

(iii.) That 1758 has long been held by many naturalists to be "the zoological *ab urbe condita* of binominal chronology" I was not unaware; but in 1890 the authorities of the British Museum had not yet endorsed that excellent opinion. To the question whether I know "that 1758 has been well called" by the terms of the above quotation, my answer would be in the negative, for, though the

sentiment is sound, it is not well but ill expressed. There was no need for a confusion of languages in the macaronic style, nor for comparing the definite and well-known year 1758 with the disputed and uncertain date of the foundation of Rome. But I fear that Professor Bell only asked the question mischievously, to lure me into "gibing," as he calls it, at some fearfully eminent person.

(iv., v.) It seems essential once more emphatically to explain that Desmarest never mentions *Potamobius* at all, though Professor Bell, misquoting himself as well as Desmarest, insists that he does. In his first paper the professor accurately cited Desmarest's suggestion that *Potamobia* of Leach might be the same as the river-crab *Thelphusa*. Now he persuades himself that Desmarest definitely said that "Leach's *Potamobius* was a river-crab." Leach, in 1818, applied a French name—*Potamobie*—to some genus of crustaceans, but without a single word of description; so that, had the name been valid in form, it would still have been absolutely without any scientific importance. In 1823 Desmarest Latinizes the name into *Potamobia*, and hazards a guess at the application intended. Meanwhile, in 1819, through Samouelle's 'Compendium,' and very obviously without the knowledge of Desmarest, Leach had assigned the crayfish to a properly constituted genus *Potamobius*. Now, lastly, in 1897 Professor Bell apparently wishes us to believe that *Potamobius* was somehow preoccupied in 1819, because Desmarest made a casual allusion to a wholly indefinite *Potamobia* in 1823!

(vi.) From the solemn severity of tone in his closing paragraph it seems as if Professor Bell imagined that his reputation as a naturalist was involved in this discussion. He should not harbour such a thought. The controversy has been, not about nature, but about names. From Leach's 'Malacostraca Podophthalmata Britannicæ,' as completed in recent times by Mr. G. B. Sowerby, it will be seen that I have been fighting on the side of a long line of authorities of the British Museum. Professor Bell, out of charity or out of friendship, should allow this to weigh in the balance against the sad offence—of which he hopes (perhaps against hope) that I have by this time repented,—the unwitting offence of gibing at men of renown, living and dead, infallible, authors of text-books.

Nocturnal protective Coloration in Mammals, Birds, Fishes, Insects, &c., as developed by Natural Selection *. By A. E. VERRILL.

Much has been written in respect to the imitative and protective colours of these groups, as seen by daylight, and the bearing of these facts on natural selection is well known. Very little attention has been paid to their colours, as seen by twilight, moonlight, and starlight. Yet it is evident that protection is more needed during the night than in the daytime by a very large number of species. This is the case with those that move about in search of their food at night, as is the habit of numerous forms of small mammals, such as rodents (rats, mice, arvicolæ, &c.), insectivores (moles, shrews, &c.), many herbivores, various marsupials, and members of other

* Abstract of a paper read before the Morphological Society, Dec. 30, 1896.

orders. Many carnivorous species, which seek their prey at night, will also find advantages in such protective colours, for thus they will more easily escape the notice of their prey. Hence many nocturnal carnivores are black or nearly so, as the mink, fishes, some bears, &c. The same principles will apply to birds, reptiles, fishes, and to insects, both in their larval and adult states, for many members of all these groups are very active at night and hide away in holes or beneath dense herbage by day. Moreover, large numbers of birds, fishes, and insects, that are active by day, rest in exposed situations at night, and are thus liable to be destroyed by nocturnal enemies. Most small birds roost in trees, bushes, or reeds, and therefore need protection while sleeping. Most small fishes, that are quiet at night, rest among sea-weeds, grasses, and stones, or else directly upon the bottom, exposed to the attacks of many nocturnal carnivorous species. The struggle for existence is severe among such species. It is to be expected, therefore, that instances of nocturnal protective coloration will become numerous when looked for. The chief object of the present paper is to call the attention of more observers to this subject.

In many cases the same colours are equally protective in daylight and at night. This is the case with the green colours, so often seen in the plumage of birds that live among foliage, and with the various shades of brown and grey,—common colours of birds, and mammals that live on the ground, among rocks or dead leaves, and of those that live on or among tree-trunks. The same applies to the white colours of mammals and birds in winter and in the arctic regions. But there are many colours that are not in the least protective by day, yet are eminently so by night. In general, the black and very dark colours, common in mammals, birds, and insects, are protective at night and not by day. One of the most obvious effects of moonlight is to give very strong or black shadows, in which black or dark animals become invisible, or nearly so. This invisibility is often increased by sharply contrasted stripes or patches of white or light yellow, which look like patches of moonlight falling across a dark shadow, and thus serve to break up the outlines of bird or beast that might otherwise be recognized. Transverse black or dark brown bands on fishes that rest among eel-grass or sea-weeds tend to render the outlines of the fish indistinct, because they look like the shadows and shaded surfaces of the weeds. Black fins and tails have a similar effect in concealing or destroying the outline of fishes. The striped colours of the tiger have the same effect when it lives among the stalks of reeds, etc., and are probably much more effective in twilight or moonlight than by day. The same is true of the spotted pattern of the leopard, panther, and jaguar.

A great number of small nocturnal mammals, belonging to diverse groups, have dark grey and greyish-brown colours (mouse-colours), which are highly protective at night, but are usually not at all so in the daytime, for such colours are conspicuous among the green herbage which they frequent and on which most of them feed. Moreover, nearly all such mammals hide away in holes in the day-

time. I have noticed that our common meadow-mouse (*Arvicola*), which is very dark grey, is scarcely to be seen even in a moonlight night in localities where it is very abundant among grass, and when large numbers are so near that the sound made by their teeth in feeding is very evident. Among insects there are multitudes of instances of colours that are evidently nocturnally protective and which can be explained only on the basis of natural selection, favouring the variations in colour that are in this way most useful. Such colours may or may not be more or less protective in the daytime. Frequently they appear to be just the opposite of protective in the daytime. Thus many butterflies have bright colours that are very conspicuous by daylight and which do not in any way match their customary surroundings. This applies to those species that are black or dark blue, striped or blotched with white, yellow, or orange, and to many species that are spotted or striped with red, orange, and black on the upper surface of the wings, and often also beneath, so that they are conspicuous whether flying or at rest. Their active habits and acute senses probably give them fair protection by day. At night, when resting with the wings folded, the colours of the underside of the wings usually blend very perfectly with those of the flowers on which they roost. Many of our species of *Argynnis* and allied genera are marked with red, orange, and brown, while there are bright silvery patches on the underside of the wings, which are exposed when at rest. I have observed that these butterflies become very inconspicuous in the moonlight, when sleeping on the goldenrod and other favourite flowers, and that their silvery spots imitate very closely the dew-drops that surround them.

Numerous nocturnal insects that live on the ground are black or dark brown, which are colours that are protective only at night. This is true of most ground-beetles, many crickets, cockroaches, ants, &c. Many of these insects hide away in the daytime, so that no protective colours are then needed. But many insects that are exposed both during the day and at night have acquired green or yellowish colours that are protective at all times, when living among foliage. Green grasshoppers, katydids, &c. are examples.

In general, patches, stripes, or spots of strongly contrasted dark and light colours are more likely to be of use by moonlight than by daylight, whether on birds or insects. Reptiles are to a large extent diurnal in their habits and many kinds hide in holes and crevices when at rest, so that our native species of this group appear to afford few good instances of evident nocturnal protective colours, though many may occur when the habits of tropical species become better known. Among nocturnal amphibians protective colours are common, and in many cases they appear to be exclusively for nocturnal protection. Our native nearly black species of salamanders (*Amblystoma punctatum* and *A. opacum*) have conspicuous spots or blotches of white or light yellow. It is evident that these colours have been acquired by natural selection in consequence of the nocturnal protection that they afford.—*Amer. Journ. Sci.*, February 1897, pp. 132-134.

determination of the relation between Mollusca and Vermes. The early notions on this subject extend far back; it has been set forth in various ways more or less explicit since 1844 by Quatrefages, P. J. van Beneden, Carl Vogt, de Lacaze-Duthiers, Mörch, Gegenbaur, von Ihering, Giard, Hatschek &c.

In 1881 ('Les Colonies animales,' p. 631 *et seq.*) I endeavoured to approach more closely than my predecessors the question which I had already treated in my course at the Museum in 1877, and to define the resemblances of the Gasteropods, considered as the basis of the Mollusca, to the tubicolar Annelids. I remarked in particular ('Les Colonies animales,' p. 640) that the cephalobranchiate Annelids present, like the Gasteropods, "numerous traces of asymmetry; the Spirographs have one of the cephalic branchiæ almost entirely atrophied. Normally in the Serpulidæ there should be two opercular appendices, usually but one is developed. The twist of the spiral, so frequent in Gasteropod Molluscs, is found among the Annelids in *Spirorbis*." This twisting is complicated, according to the interesting researches of MM. Caullery and Mesnil, by an asymmetry external and internal of the most marked kind, and which is equally characteristic of Gasteropods. The resemblances of Mollusks to cephalobranchiate Annelids is thus strongly accentuated; they are, in truth, in part the resemblances of convergence. Is it now permissible to attribute the asymmetry of *Spirorbis* entirely to adaptive modifications in their anatomy induced by their habitat in the interior of a spiral tube? There are certain distinctions to be drawn. We have seen already that there are very clear indications of asymmetry in the Serpulidæ whose tubes are not spiral; on the other hand, it is the *Spirorbis* which has constructed its tube, and this tube cannot roll itself into a spiral by reason of an asymmetry already existing, partly at least, in the animal which has produced it. This initial asymmetry is no doubt due to an active cause like that which shows itself in Mollusks (Perrier, 'Traité de Zoologie,' p. 2071); once the tube is formed, it can accentuate itself by reason of the special conditions of existence it imposes on the animal. But it is essential to remark that these things do not occur here as in the Paguridæ, which have adapted for their habitation helicoidal tubes already made.

XLIII.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.

[Continued from p. 349.]

Boarmia venustaria. (Pl. VII. fig. 2.)

Boarmia venustaria, Leech, Entom., Suppl. p. 44 (May 1891).

Five specimens, including both sexes, from Oiwake in Pryer's collection.

Hab. Japan.

Boarmia leucophæa.

Boarmia leucophæa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 395 (1878);
Ill. Typ. Lep. Het. iii. p. 33, pl. xlviii. fig. 12 (1879).

Boarmia elegans, Oberth. Etud. d'Entom. x. p. 31, pl. i. fig. 4 (1884).

A very fine series from Yokohama and Oiwake in Pryer's collection, exhibiting considerable variation. My specimens of the male agree exactly with Butler's type of *B. leucophæa* and also with Oberthür's figure of *elegans*; therefore I do not hesitate to consider the latter synonymous with the former.

The female is somewhat smaller than the male and the ground-colour is grey.

Var. *nigrofasciaria*, nov.

Central shade of all the wings black and conspicuous; there is an oblique streak from this to outer margin, and all the transverse lines are very distinct.

Distribution. Japan; Askold.

Boarmia angulifera.

Boarmia angulifera, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 396 (1878);
Ill. Typ. Lep. Het. iii. p. 33, pl. xlix. fig. 1 (1879).

Alcis angulifera, ab. *albifera*, Warren, Novit. Zool. i. p. 434 (1894).

There were several specimens from Oiwake and Nikko in Pryer's collection. I obtained the species at Shikotan in August and at Nikko in September; my native collector captured a few examples at Gensan and in the island of Kiushiu in July; Butler's type was from Yokohama; and I received one female specimen from Omei-shan, taken in July.

In some specimens the space between the central lines on primaries is hardly paler than the rest of the wing, in other examples it is almost white.

Distribution. Japan; Corea; Kiushiu; Kurile Islands; Western China.

Boarmia obliquaria.

Hibernia obliquaria, Motsch. Etud. 1860, p. 37.

There was a nice series from Gifu in Pryer's collection and there are specimens from Tokio and Yokohama in the National Museum at South Kensington.

Hab. Japan.

Boarmia mæsta.

Boarmia mæsta, Butl. Trans. Ent. Soc. 1881, p. 407.

Stenotrachelys cinerea, Butl. *op. cit.* p. 409.

There were four specimens in Pryer's collection; three of these are from Oiwake and were placed with *B. conferenda*. The fourth specimen is Pryer's no. 328, which he states was from Fujisan, taken at an elevation of 12,365 feet.

Butler's type of *mæsta* was from Yokohama and his *cinerea* from Tokio.

Hab. Japan.

Boarmia crassestrigata.

Boarmia crassestrigata, Christoph. Bull. Mosc. iv. (2) p. 72 (1881).

Synopsia crassestrigata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 109.

A few specimens from Yesso in Pryer's collection. I captured some examples at Gensan in June and at Tsuruga in July.

Distribution. Amur; Japan, Yesso; Corea.

Boarmia Büttneri.

Boarmia Büttneri, Hedem. Horæ Soc. Ent. Ross. xvi. p. 54, pl. x. fig. 6 (1881).

I took a nice series at Gensan in June, including one example of the female, which differs from the male in having rather broader wings.

All my specimens are deeper in colour than Hedemann's figure.

Distribution. Amur; Corea.

Boarmia appositaria.

Boarmia appositaria, Leech, Entom., Suppl. p. 46 (May 1891).

A male specimen of this species, which is closely allied to *B. Büttneri*, Hedem., was taken by my native collector at Gensan in July. I have also received two male specimens from Chang-yang and one from Moupin.

Distribution. Corea; Central and Western China.

Boarmia grisea.

Boarmia grisea, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 396 (1878);
Ill. Typ. Lep. Het. iii. p. 33, pl. xlix. fig. 2 (1879).

A nice series from Yokohama and Oiwake in Pryer's collection.

I obtained the species at Gensan in July, and at Ningpo I met with it in the month of April.

I have received a male specimen from Kiukiang, taken in May, and a female from Omei-shan, taken in July.

In some specimens the central fascia is very distinct, but in others it is obscured by the ground-colour.

Distribution. Japan; Corea; North-eastern, Central, and Western China.

Boarmia jejunaria, sp. n.

Brownish grey, with slight violet tinge; basal area suffused with ochreous. Primaries have a blackish discal spot surmounted by some blackish scales, and there are three transverse black lines—the first is slightly curved towards costa, the second is obtusely angled below costa and represented by dots on the neuration below the middle; the space between the lines is rather paler than the rest of the wing; submarginal line blackish and wavy, but not distinct. Secondaries have an indistinct black discal spot, a wavy blackish central line, and an indented submarginal line, also blackish; the basal area is freckled with blackish. Fringes of the ground-colour, with black dots at their base between the nervules. Under surface whitish brown; all the wings have a black discal spot, followed by an indistinct transverse line, which does not extend to inner margin on primaries.

Expanse 38 millim.

One female specimen from Ni-tou, July.

Hab. Western China.

Boarmia basifuscaria. (Pl. VII. fig. 14.)

Boarmia basifuscaria, Leech, Entom., Suppl. p. 46 (May 1891).

There was one male specimen in Pryer's collection, and I took an example of the same sex at Oiwake in October.

Hab. Japan.

Boarmia corearia.

Boarmia corearia, Leech, Entom., Suppl. p. 44 (May 1891).

I took four male specimens and one female at Gensan in

July, and I have received one male example from Changyang, also taken in July.

Allied to *B. grisea*, Butl., but differs from that species in the non-angulation of the second line.

Distribution. Corea; Central China.

Boarmia sinuosaria.

Boarmia sinuosaria, Leech, Entom., Suppl. p. 47 (May 1891).

One male specimen taken by myself at Ningpo in April.

Hab. North-east China.

Boarmia definita.

Boarmia definita, Butl. Trans. Ent. Soc. 1881, p. 407.

One male specimen from Oiwake in Pryer's collection.

Butler's type was taken by Fenton at Tokio.

Hab. Japan.

Boarmia fuscomarginaria.

Boarmia fuscomarginaria, Leech, Entom., Suppl. p. 45 (May 1891).

One female specimen taken by Mr. Smith at Hakone in August.

Allied to *B. corearia*, but the lines on upper surface are not angulated in the same way and the markings on under surface are different.

Hab. Japan.

Boarmia fumosaria. (Pl. VII. fig. 5.)

Boarmia fumosaria, Leech, Entom., Suppl. p. 44 (May 1891).

Ten specimens, including both sexes, from Oiwake and Yokohama in Pryer's collection.

Hab. Japan.

Boarmia ornataria. (Pl. VII. fig. 15.)

Boarmia ornataria, Leech, Entom., Suppl. p. 45 (May 1891).

Boarmia ornataria, var. *inornataria*, Leech, *l. c.*

One example of the type form taken by a native collector in the island of Kiushiu; there was one specimen of the variety in Pryer's collection.

Hab. Japan and Kiushiu.

Boarmia flavolinearia.

Boarmia flavolinearia, Leech, Entom., Suppl. p. 47 (May 1891).

There were two male specimens in Pryer's collection.

Hab. Japan.

Boarmia montanaria, sp. n.

Primaries brown; first line blackish, slightly curved and preceded by a fuscous transverse shade; second line blackish, angulated below costa, thence oblique to inner margin; between these lines the costal area is filled in with pale brown; submarginal line whitish, preceded by a fuscous shade, which is broadest below the angle of the second line and almost fills up the space between this line and the submarginal; discal spot black and curved, its extremities touching the blackish central shade and forming an annulated mark. Secondaries grey-brown, striated and powdered with darker brown; the central line is indicated by a series of black dots on the nervules; there is an oblique dusky submarginal streak and the anal portion of the indistinct pale submarginal line is also bordered inwardly with dusky. Fringes brown, marked with darker at extremities of the nervules and preceded by a black lunulated line. Under surface greyish, darker on apical area of primaries, and tinged with ochreous on the costal area between the transverse lines; this last and also the discal spot are rather indistinct. Antennæ bipectinated.

Expanse 38 millim.

Seven male specimens from Omei-shan, Ni-tou, and Che-tou: July.

Hab. Western China.

Boarmia roboraria.

Geometra roboraria, Schiff. Wien. Verz. p. 101; Hübn. Geom. fig. 169.

Boarmia lunifera, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 395 (1878);

Ill. Typ. Lep. Het. iii. p. 32, pl. xlviii. fig. 10 (1879).

Boarmia arguta, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 372 (1879).

Diastictis roboraria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

There were specimens from Ohoyama and Yesso in Pryer's collection.

I obtained a specimen at Nagasaki in May, one at Hakodate in August, and one at Nikko in September. Mr. Smith took this species at Hakone in August.

B. lunifera, Butl., is identical with the dark form of *B. roboraria*, which Staudinger has named var. *infuscata*. *B. arguta*, Butl., is also a form of *B. roboraria* in which the transverse markings are well defined and conspicuous.

Distribution. Europe; Amur; Japan; Yesso; Kiushiu.

Boarmia displicens.

Boarmia displicens, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 395 (1878);

Ill. Typ. Lep. Het. iii. p. 32, pl. xlviii. fig. 11 (1879).

There were some specimens from Ohoyama and Nikko in

Pryer's collection. Mr. Smith took one at Hakone in August, and I received a male specimen from Ichang, also taken in August.

Distribution. Japan; Central China.

Boarmia consortaria.

Geometra consortaria, Fabr. Mant. Ins. p. 187; Hübn. Geom. fig. 168.

Boarmia conferenda, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 395 (1878);

Ill. Typ. Lep. Het. iii. p. 32, pl. xlvi. fig. 8 (1879).

Diastictis consortaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 103.

A common insect in Japan and Corea. My collectors met with it in all the localities they visited in Central and Western China.

The Japanese specimens (referable to *conferenda*, Butl.) are generally darker in colour, but they all have the characteristic markings of *consortaria*.

The Chinese specimens are tinged with cinnamon-brown, and some examples are much larger than the type.

Distribution. Europe; Amur; Askold; Corea; Japan; Western and Central China.

Boarmia corticaria, sp. n.

Male.—Pale brown, powdered with dark brown. Primaries clouded with blackish before the whitish submarginal line: first transverse line wavy, second oblique throughout the middle of its course, but dentate below costa and above inner margin, both black; between these lines there is a black spot and a blackish central shade, terminating in a dark brown cloud on inner margin, and beyond the second line there is a dark shade connecting the blackish clouding before submarginal line with a smaller cloud on inner margin; from this shade there are projections along the median nervules. Secondaries have a black central spot, two transverse lines, and a whitish submarginal line; the latter is shaded inwardly with blackish and the second black line is bordered outwardly with dark brown. Fringes brown, preceded by a black lunulated line. Under surface pale brown, irrorated with darker brown; there is a black spot and a broad submarginal fuscous-brown band on each wing; the latter is preceded by a brownish line, which is bifurcated towards abdominal margin and followed by some whitish patches on the outer marginal area. Antennæ bipectinated. Thorax agrees with wings in colour; collar dark brown; tip of abdomen with a tuft of long silky pale brown hairs.

Female.—Rather paler than the male on both surfaces.

Expanse, ♂ 76, ♀ 80 millim.

Three specimens. One example of each sex from Chang-yang and a male from Ichang : June and July.

Hab. Central China.

Boarmia stolidaria, sp. n.

Whitish brown, finely striated with reddish brown. Primaries have a dark irregular basal patch; an obscure dark brown subbasal transverse line, commencing in a darker quadrate patch; beyond there is a curved and recurved dark brown transverse line, clouded on its middle; the submarginal band is twice interrupted. Secondaries have a slightly elongate blackish discal spot, and a serrated dark transverse line, marked with black on the nervules, beyond; submarginal band as on primaries. Under surface similar to above, but the transverse lines of primaries are only faintly indicated. Fringes brownish, tipped with blackish and preceded by a black line.

Expanse, ♂ 64, ♀ 70 millim.

One male specimen from Chang-yang and a female from Ni-tou : July.

Hab. Central and Western China.

Boarmia majuscularia, sp. n.

Ochreous brown, irrorated with fuscous. Primaries have three purplish-brown transverse lines, commencing in clouds of the same colour on the costa; the first is slightly curved, the second is elbowed below costa, and the third is crenulate and undulated and is followed by a large diffuse purplish-brown cloud about the middle; submarginal line whitish, interrupted about the middle—the upper portion is inwardly bordered with purplish brown towards costa, and intersects a large patch of the same colour; the lower portion is also inwardly edged with purplish brown. Secondaries have a brown discal spot and two transverse lines of the same colour; the outer one edged externally with whitish towards abdominal margin. Fringes grey, marked with paler and preceded by an interrupted brown line. Under surface similar to above, but the ground-colour is paler and the transverse markings are only faintly indicated on primaries.

Expanse 74 millim.

One female specimen in Pryer's collection.

Hab. Japan.

Boarmia Pryeraria, sp. n.

Whity brown, tinged with ochreous and marked with

black. Primaries have a subbasal band indicated on costa and inner margin; a large discal spot and two larger spots on outer margin; central line macular and sinuous; submarginal line whitish and sinuous; the space between these lines is clouded with black. Secondaries have a discal dot; the whitish, wavy, submarginal line is broadly bordered inwardly with blackish, and there are some spots on the nervules representing a central line. Fringes of primaries black and of secondaries whity brown preceded by a lunulated line. Under surface whity brown; the outer marginal area of primaries is blackish, enclosing a patch of the ground-colour at apex and another about the middle; the discal spot is distinct; secondaries have a blackish discal spot and submarginal band, the latter encroaching on the outer margin towards apex and again towards anal angle.

Expanse 33 millim.

One female specimen in Pryer's collection.

Hab. Japan.

Boarmia sinicaria, sp. n.

Primaries whitish grey, powdered and suffused with brownish on the costa and on inner marginal area; there is a blackish spot at the base of the wing; basal third suffused with brownish and limited by a double, blackish, nearly straight line; the outer third purplish brown, with an angular projection from the middle to the annular blackish discal spot, and limited by a black angulated line; submarginal line black, marked with whitish on the costa and bordered with violet-grey below; there is a blackish mark on the costa above the discal spot and another beyond it. Secondaries pale whity brown; the outer marginal area is dark grey, and there is a short oblique dash of the same colour above anal angle; discal spot dark grey. Fringes of primaries purplish brown, spotted with yellowish, the central spots are confluent; of secondaries whity brown, slightly darker at the extremity of the nervules; the fringe on all the wings preceded by a series of black lunules. Under surface pale whity brown, costa of primaries yellowish; all the wings broadly bordered with fuscous, and this colour projects on the primaries to the annulated discal spot; the basal two thirds of secondaries are powdered with fuscous, discal spot blackish.

Expanse 36 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Allied to *B. semiclarata*, Walk.

Boarmia subochrearia, sp. n.

Primaries brownish grey, suffused with fuliginous on outer marginal area; there are three black transverse bands—the first is curved, the second is elbowed below costa and again above the inner margin, the third (submarginal) is sinuous; on the middle of the outer marginal area there is a more or less quadrate pale spot, and the inner margin is tinged with reddish brown; discal dot black. Secondaries ochreous brown, suffused with dark grey towards the base and along the abdominal area; discal dot black. Fringes ochreous brown, marked with dark grey at extremities of the nervules, and preceded by a series of black lunules. Under surface: primaries ochreous grey, with a blackish discal dot and some fuscous clouds beyond it and below apex; of the transverse bands of upper surface only the first is clearly reproduced; secondaries ochreous brown, sprinkled with dark grey; discal dot black.

Expanse 36 millim.

One female specimen from Omei-shan.

Hab. Western China.

Nearly allied to *B. semiclarata*, Walk.

Boarmia bilinearia, sp. n.

Primaries olive-brown, closely striated and mottled with dark brown, traversed by two blackish lines—the first is elbowed below costa, and then curved and recurved to inner margin; the second is strongly serrated; there is a short blackish oblique apical streak. Secondaries greyish brown, mottled with dark brown; discal spot black; transverse line blackish, attenuated from abdominal margin to just beyond middle, where it becomes obscured. Fringes agree with the wings. Under surface pale greyish brown, irrorated with darker; discal spots blackish, and indications of a dusky band beyond the middle of each wing.

Expanse 32 millim.

One male specimen from Moupin, July.

Hab. Western China.

Boarmia punctimarginaria, sp. n.

Fuliginous. Primaries have a pale brown patch at the base limited by a black line; central shade blackish, with the black discal dot on it; beyond there is a black dentate line followed by a blackish shade; on the outer margin there is a series of whitish dots, each dot preceded by a blackish one.

Secondaries similar, but the basal patch is of less extent. Under surface grey-brown; all the wings have a conspicuous black discal spot, and the markings of upper surface are indicated.

Expanse 28 millim.

One male specimen from Kiukiang, June.

Hab. Central China.

Boarmia (?) *nigrofasciaria*, sp. n.

Primaries whity brown; central fascia blackish, tapering towards inner margin, and enclosing a black curved discal spot, the edges dentate; there is a blackish cloud on the costa just beyond the fascia, one on outer margin above the middle, and one towards outer angle; submarginal line pale but indistinct. Secondaries whity brown, with a blackish discal spot and dentate central line. Fringes of the ground-colour preceded by a black line. Under surface similar to above, but markings are fainter. Antennæ bipectinated, the branches rather long.

Expanse 33 millim.

One male specimen from each of the following localities:—Chow-pin-sa, Chia-ting-fu, Pu-tsu-fong: June and July.

Hab. Western China.

Boarmia divisaria, sp. n.

Basal two thirds of primaries brownish, traversed by a blackish line, which is curved towards costa and limited by a dentate black line; outer marginal area brownish, inwardly limited by a waved serrated black line; the area between this line and the basal two thirds is whitish; submarginal line wavy, whitish, preceded by black marks; discal spot black, elongate. Secondaries pale grey, irrorated with fuscous, especially on basal and outer marginal areas; discal dot and central line dusky, the latter almost straight; submarginal line whitish, wavy. Fringes pale brownish grey, preceded by a lunulated brownish line. Under surface ochreous grey, irrorated with fuscous; all the wings have a blackish discal mark and a narrow dusky transverse band beyond, the latter marked with blackish on the neurulation. Antennæ bipectinated.

Expanse 36 millim.

One male specimen from Pu-tsu-fong, taken in June or July.

Hab. Western China.

Boarmia decoloraria, sp. n. (Pl. VII. fig. 4.)

Male.—Whity brown, finely powdered with darker brown. Primaries have a brownish basal band (sometimes only represented by a spot on the costa and a dot on each nervure below it); a dark brown serrated central band commencing in an angular mark on the costa, represented by dots on the nervules, and terminating in an oblique dash on the inner margin; submarginal band dark brown, irregular in width and externally edged with whitish, as also is the central band; there is also a brownish spot on costa between basal and central bands, from which a dark shade is sometimes projected to the wide portion of central band. Secondaries have three brownish transverse bands, the first nearly straight, the second narrow and attenuated, and the third of irregular width, the last two edged externally with whitish. All the wings have a blackish discal spot. Fringes brown, preceded by dark brown lunules between the nervules. Under surface of primaries fuscous brown, except the outer and inner margins, which are whity brown; of the secondaries whitish, sprinkled with brown scales; a blackish discal spot on each wing, but only the primaries have the transverse markings, and these are not always clear. Antennæ broadly bipectinated.

Female.—Generally paler than the male, and the under surface of all the wings is usually whity brown, powdered with brown scales (this is also the case in some males); the antennæ are simple.

Expanse, ♂ 40–45, ♀ 36–42 millim.

A long series taken in June and July at Chang-yang; Moupin; Ta-chien-lu; Omei-shan; Wa-shan; Pu-tsu-fong; Chia-ting-fu; Ni-tou.

Hab. Central and Western China.

Near *B. nooraria*, Brem., from Amurland.

Boarmia abietaria.

Geometra abietaria, Hübn. Geom. fig. 160.

Deileptenia abietaria, Hübn. Verz. Schmett. p. 316; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 105.

Boarmia abietaria, Treit. Schmett. vi. 1, p. 204; Dup. Lép. vii. pl. clx. figs. 2, 3; Guen. Phal. i. p. 243.

There were a few specimens from Oiwake in Pryer's collection, and I have received one example of each sex from Mr. Manley, who took them at Yokohama.

The Japanese specimens are rather larger and more strongly marked than European examples.

Distribution. Europe; Japan.

Boarmia approximaria, sp. n.

Allied to *B. abietaria*, Hübn. Greyish, heavily powdered and clouded with brown; the first line of primaries is straighter, the second more deeply elbowed below the costa and more oblique thence to inner margin, where it terminates closer to the first line. The under surface is fuscous and not ochreous as in *B. abietaria*, and the only markings are a discal spot on primaries and indications of a central transverse line on each of the wings.

Expanse, ♂ 48, ♀ 52 millim.

One example of each sex from Ni-tou and a male from Pu-tsu-fong, July.

Hab. Western China.

Boarmia dolosaria, sp. n.

Fuliginous grey. Primaries traversed by two black lines—the first, commencing in a spot on the costa, is sharply angled below costa and again above inner margin; the second is serrated, curved below costa, thence oblique to inner margin. Secondaries have a dusky band with the blackish discal spot on it and a rather sinuous black line beyond; submarginal band dusky, edged outwardly with greyish. Fringes agree with the wings in colour and are preceded by a lunulate black line. Under surface silky fuscous grey; all the wings have a black discal spot, a transverse line, and a broad dusky submarginal band. Antennæ bipectinated.

Expanse 42 millim.

One male specimen from Chang-yang.

Hab. Central China.

Allied to *B. admissaria*, Guen.

Boarmia incongruaria, sp. n.

Male.—Primaries brown; first transverse line darker and only distinct on costal area; second line also darker, slightly elbowed below costa, thence oblique to inner margin; between the lines is a black discal dot and a curved brownish central shade; submarginal line whitish, dentate, preceded by a blackish band. Secondaries rather paler than the primaries; submarginal line pale, bordered inwardly with blackish, but not so strongly as on primaries. Fringes concolorous with the wings. Underside whitish brown slightly tinged with fuscous: primaries have a blackish submarginal band; secondaries a blackish central dot and a whitish transverse line, both indistinct. Antennæ bipectinated.

Female.—Similar to the male, but the secondaries have a blackish central line outwardly edged with whitish, and between this and the base of the wing there is a brownish transverse shade.

Expanse, ♂ 38, ♀ 40 millim.

One example of each sex. The male from Omei-shan and the female from Ni-tou, July.

Hab. Western China.

Boarmia punctilinearia, sp. n.

Pale greyish brown, suffused with darker and striated with blackish. Primaries have a black discal spot and two black transverse lines—the first wavy, preceded by a blackish cloud, and the second serrated, with black dots upon it, and followed on the costa by a clear space of the ground-colour; submarginal band blackish, interrupted. Secondaries have a black discal dot and a serrated black transverse line with black dots upon it; submarginal line as on primaries, but less distinct. Fringes agree with the wings and are preceded by an interrupted black line. Under surface grey, powdered with fuliginous and bordered on outer margins with the same colour; all the wings have a black discal spot and there are indications of one transverse line. Antennæ bipectinated.

Expanse 32 millim.

One male specimen from Huang-mu-chang, July.

Hab. Western China.

Boarmia olivacearia, sp. n.

Dark greyish brown tinged with olivaceous. Primaries have two transverse blackish lines—the first appears to be curved, but is only to be traced from costa to median nervure; second line wavy and angled below costa; submarginal line whitish, preceded on the apical area of the wing by a reddish-brown cloud; there is a small black discal spot and a dusky shade beyond extending from the costa to the middle of the wing, the continuation of this shade is represented by a quadrate dusky spot on the middle of the inner margin. Secondaries have a black discal spot and blackish wavy central line; submarginal line as on primaries, the area between the lines is faintly clouded with reddish brown. Fringes grey, marked with brown at the extremities of the nervules, and preceded by a dark dotted line. Under surface brownish grey; all the wings have a blackish wavy line, indicated by short dashes on the nervules, a dusky

transverse shade between this line and the base of the wing, and a broadish pale band before outer margin. Antennæ bipectinated.

Expanse 40 millim.

One male specimen from Wa-shan, June.

Hab. Western China.

Boarmia projectaria, sp. n.

Primaries blackish grey irrorated with whitish; basal line blackish, indented below costa, and edged internally with whitish; beyond the middle there is a rather broad whitish band forming a double angle about the middle, and outlining in its course a conspicuous quadrangular projection of the ground-colour; submarginal line pale but indistinct, with a small blackish cloud on it towards costa; discal spot black. Secondaries whitish, irrorated with blackish grey; discal spot black; central line black, crenulate, with a double-toothed projection about the middle, increasing in width towards abdominal margin. Fringes yellowish, marked with dark grey, and preceded by a series of black spots on the primaries, and by an interrupted black line on secondaries. Under surface similar to above, but the first line is absent.

Expanse, ♂ 28-30, ♀ 33 millim.

Nine specimens, including both sexes, from the following localities, Pu-tsu-fong, Ni-tou, Che-tou, and the Province of Kwei-chow: July.

Hab. Western China.

In some specimens the white band of primaries is suffused with blackish grey, and the secondaries are thickly powdered with the same colour. Antennæ bipectinated in the male.

Boarmia mirandaria, sp. n.

Primaries grey-brown, basal patch pale reddish limited by a curved dark line; a pale reddish patch occupies a large portion of the outer two-thirds of the wing, but does not extend to the costa, and is separated from outer margin by an undulated whitish line, this patch is traversed by a dark wavy line edged with whitish and angled below costa. Secondaries pale reddish, with a patch of grey-brown on the base and on lower portion of the outer marginal area; submarginal line pale; discal spot black. Fringes whitish, preceded by a dark line. Under surface pale brown slightly suffused with fuscous; all the wings have a serrated blackish transverse line beyond the middle, and a dusky shade between

it and the base of the wing; secondaries have a blackish discal dot. Antennæ bipectinated.

Expanse 36 millim.

One male specimen from Ichang, June.

Hab. Central China.

Boarmia insolitaria, sp. n.

Primaries have the costal area drab, freckled and clouded with darker brown, and the inner portion of the wing brown, tinged with ferruginous, and clouded with drab on outer margin; there are indications of two dusky transverse lines and a pale submarginal line. Secondaries are drab at the extreme base on outer marginal third, the intervening space being fuscous brown; there is a brownish cloud tinged with ferruginous above anal angle. All the wings have a blackish discal spot, that on primaries only is distinct. Under surface pale brown, clouded and suffused with fuscous; there is a straight dusky central line on which is the discal spot, and beyond there is a slightly curved but indistinct dusky line; the latter is followed by a ferruginous-brown band; the secondaries are similarly marked.

Expanse 42 millim.

One female specimen from Chang-yang, July.

Hab. Central China.

Boarmia moupinaria, sp. n.

Pale grey powdered with darker. Basal half of primaries darker; first line curved, second line almost straight, interrupted in the middle, and bordered with ochreous grey, both are blackish and between them there is a dusky fascia; submarginal line pale grey inwardly edged with blackish. Basal third of secondaries darker; central line blackish, almost straight, and edged with ochreous grey; submarginal line pale grey inwardly edged with darker. Fringes of the ground-colour, preceded by a black line on secondaries and a series of dots on primaries. Under surface whitish grey; costa and outer marginal area of primaries tinged with fuscous; all the wings have a black discal spot.

Expanse 44 millim.

One female specimen from Moupin, June.

Hab. Western China.

Boarmia flavimacularia, sp. n.

Purplish brown. Primaries traversed by two brownish and one silvery-grey line, the latter bordered on each side

with reddish brown, and preceded on costal area by a brown and grey suffusion; the base is powdered with silvery grey, and there is a large pale buff apical patch transversely clouded with brownish, and having two black dots on its outer edge. Secondaries have a dusky subbasal line and discal spot, and beyond these are two wavy lines, which become indistinct towards costa: the first of these is inwardly bordered with brownish and has a pale yellow dot on its edge above the middle. Under surface fuscous: primaries have the apical patch as above, and the secondaries are sparingly freckled with pale buff.

Expanse 34 millim.

Five specimens from Pu-tsu-fong, Chia-ting-fu, Chang-yang: July and August.

Hab. Central and Western China.

Genus JANKOWSKIA.

(Oberth. Etud. d'Entom. ix. p. 25 (1884).)

Jankowskia athleta.

Jankowskia athleta, Oberth. Etud. d'Entom. ix. p. 25, pl. ii. fig. 7 (1884).

Recorded by Oberthür from Sidemi, Manchuria.

Jankowskia thoraciaria.

Jankowskia thoraciaria, Oberth. Etud. d'Entom. ix. p. 26, pl. ii. fig. 8 (1884).

Recorded by Oberthür from Sidemi, Manchuria.

Jankowskia fuscaria.

Boarmia fuscaria, Leech, Entom., Suppl. p. 45 (May 1891).

One male and two female specimens from Oiwake in Pryer's collection.

I received the species from Chang-yang, Ichang, Moupin, Omei-shan: June and July.

Allied to *J. athleta*, Oberth., but can at once be distinguished by the yellow marking on the under surface of the costa of primaries.

Distribution. Japan; Central and Western China.

Genus SYNOPSISIA.

(Hüb. Verz. Schmett. p. 316.)

Synopsia paupera.

Boarmia paupera, Butl. Trans. Ent. Soc. 1881, p. 406.

Several specimens from Oiwake, Fujisan, and Yokohama in Pryer's collection.

I took the species at Sendai in September, and at Yokohama in October.

Hab. Japan.

Synopsia austeraria, sp. n.

Pale brown, powdered and clouded with darker. Primaries have a black discal dot and two transverse lines—the first is wavy and angulated below costa, the second is slightly serrated, oblique, and preceded by a transverse dusky shade; marginal area clouded with ashy. Secondaries have a blackish discal dot and a blackish serrated transverse line, preceded by a dusky transverse shade; outer marginal area clouded with ashy. Fringes preceded by a dark line. Under surface greyish brown, powdered with darker, and with blackish discal spots and faint indications of transverse lines.

Expanse 49 millim.

One female specimen from Pu-tsu-fong, June.

Hab. Western China.

Genus *HEMEROPHILA*.

(Steph. Ill. Brit. Haust. iii. p. 189 (1829).)

Hemerophila Dejeani.

Hemerophila Dejeani, Oberth. Etud. d'Entom. x. p. 30, pl. i. fig. 12 (1884); Alph. Rom. sur Léop. vi. p. 60 (1892).

This appears to be a common species in June and July at Ta-chien-lu, Omei-shan, and Pu-tsu-fong. I also received specimens from Ni-tou, Che-tou, and Wa-shan; and Alphéraky records the species from Ou-pin.

It is exceedingly variable in coloration, which ranges from reddish brown to dark olive-brown, and the central area is often very pale.

Hab. Western China.

Hemerophila senilis.

Hemerophila senilis, Butl. Ill. Typ. Lep. Het. ii. p. 48, pl. xxxv. fig. 12 (1878).

Several specimens from Oiwake, Nikko, and Gifu in Pryer's collection.

My native collector captured the species at Hakodate in June or July.

Hampson (Fauna Brit. Ind., Moths, iii. p. 275) considers *H. senilis* to be synonymous with *H. subplagiata*, Walk.

Hab. Japan and Yesso.

Hemerophila conjunctaria, sp. n. (Pl. VII. fig. 9.)

Female.—Allied to *H. senilis*, Butl., but the basal fascia, which, together with the outer marginal area of primaries, is purple-brown in colour, ornamented with lilacine at apex and on inner margin, is broader and more deeply indented below the costa; the central transverse line of secondaries is sinuous, not curved below costa, and there are some lilacine dashes on outer margin; discal spot on all the wings distinct. Under surface whitish, freckled with brownish and a little suffused with dusky on the outer margin of primaries; there is a black discal spot and a dotted line, also black, on each wing. The posterior portion of the thorax is edged with white.

Expanse 46 millim.

Two female specimens from Pu-tsu-fong, July.

Hab. Western China.

Hemerophila atrilineata.

Hemerophila atrilineata, Butl. Trans. Ent. Soc. 1881, p. 405.

Phthonandria atrilineata, Warren, Novit. Zool. i. p. 434 (1894).

There were some examples from Oiwake and Nikko in Pryer's collection, and I captured specimens at Tsuruga in July. My native collector took the species at Hakodate and Gensan, also in July, and I have received one male specimen from Ta-chien-lu, taken in June.

Distribution. Japan; Yesso; Corea; Western China.

Hemerophila rimosa.

Boarmia rimosa, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 372 (1879).

A few nice specimens from Yokohama in Pryer's collection; my native collector took the species in the island of Kiushiu.

Hab. Japan and Kiushiu.

Hemerophila obscuraria, sp. n.

Reddish brown, much powdered with darker. Primaries have two oblique black lines—the first curves a little as it approaches the inner margin, and the second is wavy throughout and curved towards costa, both are preceded by a blackish shade; there is a dark cloud below the apex and another below it extending to inner margin near the angle, this latter is interrupted. Secondaries have a black line, broad on abdominal margin and tapering towards costa, this is preceded by a dusky transverse shade and followed by two

paler bands. At the base of the fringes, which are concolorous with the wings, there is a blackish wavy line. Under surface rather silky brown: primaries have two transverse black lines, chiefly indicated by dots on the neuriation, which converge towards the inner margin; secondaries have two equidistant, curved, and wavy black lines.

Expanse 50 millim.

Two specimens from Pu-tsu-fong, June.

Hab. Western China.

Hemerophila latimarginaria, sp. n.

Pale cinnamon-brown, with a black discal spot on all the wings. Primaries have an irregular dark brown line beyond the middle limiting the outer marginal area, which is darker brown and is traversed by a dusky submarginal band; the basal area is slightly irrorated with darker brown. Secondaries have a curved and slightly wavy dark brown central line, the area beyond is darker brown traversed by a dusky submarginal band. Under surface whitish brown, suffused with darker on primaries, and these wings have a blackish discal spot.

Expanse 40 millim.

One female specimen from Ichang, April.

Hab. Central China.

Hemerophila (?) *tachraparia*.

Hemerophila tachraparia, Oberth. *Etud. d'Entom.* xviii. p. 25, pl. v. fig. 63 (1893).

I have not seen this species. Oberthür describes it from specimens received by him from Ta-chien-lu, Western China.

Genus MEDASINA.

(Moore, *Lep. Ceyl.* iii. p. 408 (1886); Hampson, *Fauna Brit. Ind., Moths*, iii. p. 283 (1895).)

Medasina scotosiaria.

Deinotrichia scotosiaria, Warren, *Proc. Zool. Soc. Lond.* 1893, p. 420, pl. xxx. fig. 9.

Medasina scotosiaria, Hampson, *Fauna Brit. Ind., Moths*, iii. p. 284 (1895).

Two male specimens from Pu-tsu-fong, June.

Distribution. Sikhim (*Hampson*); Western China.

Medasina diffusaria, sp. n.

Brown, irrorated with fuscous on secondaries and margins

of primaries. There are indications of two transverse lines on primaries, the outer one represented by blackish dots on the neuration; submarginal band blackish, diffuse and interrupted. Secondaries have a blackish discal spot, two transverse lines, and a diffuse blackish submarginal band, the latter does not extend to costa. Fringes of the ground-colour, preceded by an interrupted blackish line. Under surface rather paler than above; all the wings have a blackish discal spot and an obscure dusky band beyond.

Expanse 74–84 millim.

Four male specimens from Chang-yang, taken in July.

Hab. Central China.

Allied to *M. creataria*, Moore.

Medasina creataria.

Hemerophila creataria, Guen. Phal. i. p. 217 (1857).

Medasina creataria, Hampson, Fauna Brit. Ind., Moths, iii. p. 286 (1895).

Two female specimens from the Province of Kwei-chow, June.

Distribution. Sikhim; Assam (*Hampson*); Western China.

Medasina albidaria.

Boarmia albidaria, Walk. Cat. Lep. Het. xxxv. p. 1582 (1866).

Medasina albidaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 289 (1895).

I received one male specimen from Ichang, April; one example of each sex from Omei-shan; and a female from Moupin, July.

Distribution. Simla; Dharmśāla; Sikhim; Khásis (*Hampson*); Central and Western China.

Genus ARICHANNA.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 658; Hampson, Fauna Brit. Ind., Moths, iii. p. 290 (1895).)

Arichanna tetrica.

Cidaria tetrica, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 451 (1878); Ill. Typ. Lep. Het. iii. p. 59, pl. lv. fig. 10 (1879).

Cidaria tetrica, Butl., ♀; Alph. Rom. sur Léop. vi. p. 78, pl. iii. fig. 11 (1892).

There was an example of each sex from Ohoyama in Pryer's collection, and my native collector took a female specimen at Hakodate in June.

Hab. Japan and Yesso.

Arichanna interruptaria, sp. n.

Primaries whitish, powdered with blackish grey; there are three transverse bands interrupted by the brown neuration and intersected by white or whitish lines; discal spot black, separated from a spot on costa by the brown subcostal nerve; from the lower end of discal spot there is a blackish diffuse line, which appears to be part of the second or central band. Secondaries whitish, powdered and freckled with greyish; discal spot blackish. Fringes pale brown, chequered with darker, preceded by a brown line on secondaries and by a row of black dots on primaries. Under surface pale brown, powdered and freckled with darker: the primaries have a smoky suffusion, a black discal spot, and indications of the transverse bands of upperside; the secondaries have a black discal spot and dark brown wavy central band. Antennæ of the male ciliated.

Expanse 42-46 millim.

Two male specimens and four females from Omei-shan: July and August.

The markings are very similar to those of *A. similaria*, but they are blackish rather than olive-brown, and the neuration is brown instead of pale olive. The structure of the antennæ is quite different.

Hab. Western China.

Arichanna ramosa.

Scotosia ramosa, Walk. Cat. Lep. Het. xxxv. p. 1688 (1866).

Arichanna ramosa, Hampson, Fauna Brit. Ind., Moths, iii. p. 291 (1895).

One female specimen from Pu-tsu-fong, July.

Distribution. Sikhim (*Hampson*); Western China.

Arichanna similaria, sp. n.

Male.—Primaries white, powdered with brownish; the base is dark olive-brown, and there are four transverse bands of the same colour interrupted by the broad pale olive neuration; the second and third of these bands unite on the inner marginal area, where they represent a quadrate patch; the fourth is intersected by an interrupted white line, as also is the third above the quadrate patch referred to. Secondaries whitish, freckled with greyish; central band and incomplete submarginal band greyish; discal spot blackish. Fringes pale olive, chequered with darker. Under surface whitish, powdered and freckled with greyish brown: primaries suffused with shining fuscous except at apex; secondaries

have a discal spot and central band as above. Antennæ brown, bipectinated.

Female.—Markings of primaries as in the male; bands of secondaries not well defined beyond abdominal area.

Expanse, ♂ 48, ♀ 50 millim.

Allied to *A. ramosa*, Walk., and *A. tetrica*, Butl.

One example of each sex from Omei-shan, July.

Hab. Western China.

Arichanna clavaria, sp. n.

Male.—Greyish brown, powdered and mottled with darker. Basal area of primaries marked with black and limited by a double-indented black line; discal spot black, preceded by a whitish quadrate patch, and followed by a dusky cloud-like band; on the outer marginal area there is a series of black bars intersected by an interrupted white line; submarginal line white, macular. Secondaries have a dusky discal spot, central band, and interrupted submarginal band. Fringes pale brown marked with darker. Under surface of primaries greyish brown, suffused with blackish, discal spot black; beyond the middle of the wing there are indications of a pale transverse line: secondaries as above. Antennæ bipectinated.

Female.—Similar to the male, but the ground-colour is browner, the whitish patch before discal spot on primaries is absent, and the bands on under surface of secondaries are less distinct.

Expanse, ♂ 42, ♀ 44 millim.

One male specimen from Omei-shan, taken in August, and a female from Pu-tsu-fong, July.

Hab. Western China.

Arichanna Pryeraria.

Arichanna Pryeraria, Leech, Entom., Suppl. p. 51 (May 1891).

I received a male specimen from Mr. Manley of Yokohama, and there was a female example from Oiwake in Pryer's collection.

Allied to *A. furcifera*, Moore.

Hab. Japan.

Arichanna diffusaria, sp. n.

Primaries whitish, with interrupted and irregular fuliginous-brown subbasal, central, and marginal bands, the latter intersected by an oblique streak of the ground-colour from apex; the space between subbasal and central bands is

dotted with fuliginous brown, as also is that between central and marginal bands at middle and towards costa and inner margin; costa and nervures marked with ochreous. Secondaries whitish spotted with fuscous grey, the larger of the spots representing central, submarginal, and marginal bands. Under surface similar to above, but the markings, which are pale fuscous on primaries, are fainter, and on secondaries rather stronger.

Expanse 56 millim.

One female specimen from Pu-tsu-fong, June.

Hab. Western China.

Arichanna albomacularia. (Pl. VII. fig. 10.)

Arichanna albomacularia, Leech, Entom., Suppl. p. 51 (May 1891).

Two male and five female specimens, from Gifu and Oiwake, in Pryer's collection.

Allied to *A. tetrica*, Butl., but distinguished by the large white spot on primaries.

Hab. Japan.

Arichanna consocia.

Abraxas consocia, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 226 (1880).

Icterodes consocia, Butl. Ill. Typ. Lep. Het. vi. p. 84, pl. cxix. fig. 11 (1886).

Arichanna lapsariata, Hampson, Fauna Brit. Ind., Moths, iii. p. 293 (1895).

One female specimen from Ni-tou, July.

Distribution. N.E. Himalayas (*Butler*); Western China.

Arichanna melanaria.

Phal. Geometra melanaria, Linn. Syst. Nat. x. p. 525; Clerck, Icon. pl. iv. fig. 2.

Geometra melanaria, Esp. v. p. 115, pl. xxiii. fig. 1; Hübn. Geom. fig. 26.

Diastictis melanaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

Rhyparia fraterna, Butl. Ill. Typ. Lep. Het. ii. p. 53, pl. xxxvii. fig. 9 (1878).

Rhyparia askoldinaria, Oberth. Etud. d'Entom. v. p. 52, pl. ix. fig. 11 (1880).

Icterodes sordida, Butl. Ann. & Mag. Nat. Hist. (5) xi. p. 116.

Fraterna, Butl., is a pale form of *A. melanaria*, and is almost exactly identical with some European examples of the species in my collection. *Sordida*, Butl., is a dark form also agreeing with some European specimens, and *askoldinaria* is a form intermediate between the two. Alphéraky mentions a variety of the species from Peï-chouï (Rom. sur Léop. vi. p. 55).

There were specimens in Pryer's collection from Yokohama, Oiwake, and Nikko. I obtained the species at Gensan in June.

Distribution. Europe; East Siberia; Amur; Askold; Corea; Japan.

Arichanna confusaria, sp. n.

Primaries white; basal area limited by an interrupted blackish band, clouded and marked with the same colour; the central fascia and submarginal line are also blackish, the former encloses spots of the ground-colour and the latter is macular; the spaces between the transverse markings are freckled with blackish. Secondaries whitish, freckled with grey before the blackish, wavy, central band, and ochreous beyond it; submarginal band blackish, broken up into spots, of which that nearest the middle is the largest. Fringes of primaries blackish, chequered with white, and of secondaries yellow, chequered with black, preceded on all the wings by a row of blackish spots. Under surface of primaries have the markings of the upperside indicated, and on the secondaries the markings are reproduced, but the outer half of the wing is only tinged with yellow.

Expanse, ♂ 40-44, ♀ 38 millim.

Two male specimens from Ta-chien-lu and one female from Pu-tsu-fong: June.

Hab. Western China.

In one male the markings on primaries are brownish, but not clearly defined, and the outer margin appears to have a brownish border intersected by a transverse wavy white line.

Arichanna flavovenaria, sp. n.

Male.—Primaries whitish grey suffused with blackish; the basal area is marked with black and limited by a black band intersected by the fulvous venation; discal spot black; submarginal band paler than the ground-colour, followed by a broad black band, which is intersected by the venation and outwardly edged with whitish. Secondaries yellow; basal area fuliginous grey; there are three rows of black spots, those forming the first row being more or less confluent, but not forming an interrupted wavy band as in *A. undularia*. Under surface of primaries fuliginous grey and of secondaries as above, but paler in the ground-colour.

Female.—Similar to the male, but exhibiting more of the ground-colour on primaries above. Under surface of all the wings yellow; primaries flecked and clouded with blackish;

secondaries marked as above, but the basal area is only slightly tinged with fuliginous grey.

Expanse, ♂ 51, ♀ 54 millim.

One male specimen from Omei-shan and a female from Pu-tsu-fong: July.

Hab. Western China.

Arichanna flavomacularia, sp. n.

Primaries black; venation and costa broadly grey, the latter marked with five black spots, and the former, together with seven interrupted yellow lines, breaking up the ground-colour into macular transverse bands. Secondaries have the basal third grey from costa to anal angle and the outer two thirds yellow; the latter has a central black spot, an outer series of six large grey spots (the first and sixth of which are double), and a marginal series of seven or eight small spots of the same colour. Fringes of primaries blackish and of secondaries yellow to the anal third, where they are blackish. Under surface of primaries fuliginous grey, with black spots of upperside reproduced; secondaries as above.

Expanse, ♂ 56-60, ♀ 54 millim.

A fine series from Wa-shan and Ta-chien-lu, June and July. All but one are males.

Hab. Western China.

Arichanna undularia, sp. n.

Male similar to *A. flavomacularia*, but smaller, and the interrupted yellow transverse lines on primaries are less clearly defined. On the secondaries there is a rather broad transverse black band in addition to outer and marginal series of spots; the blackish basal third does not extend beyond the limit of waved band, but encroaches further along the costa and encloses the discal spot. Fringes of all the wings blackish. Under surface: primaries fuliginous grey, with a black discal spot and a few yellowish dots beyond; secondaries marked as above, but the ground-colour is paler.

Expanse 53 millim.

Four male and two female specimens from Ta-chien-lu, Omei-shan, Pu-tsu-fong, Wa-shan: June and July.

Hab. Western China.

Arichanna lateraria, sp. n.

Primaries grey, with a slight fuliginous tinge; the basal area is spotted with black; a conspicuously large black spot

with black cloud above on costa, and four pairs of spots of the same colour below, represent a broad central fascia (the lower pairs coalesce, forming bars); beyond these are three transverse series of black spots—the first is composed of double spots towards costa, the spots of second series are surrounded with whitish, the third series is on outer margin. Secondaries have the basal half grey and the outer half yellow; two large black spots beyond the central one form a longitudinal series of three between the limit of basal half of the wing and the outer margin; there is a larger black spot at the outer angle, three others below the outer one of longitudinal series, and a row of smaller spots before the outer margin. Fringes agree in colour with the wings. Under surface similar to the upper surface, but the primaries are more uniform in colour.

Expanse 60 millim.

Three males, Wa-shan, Moupin, and Pu-tsu-fong: July.

Hab. Western China.

Allied to *A. jaguararia*, Guen.

Judging from the three specimens under observation, this species would seem to be rather variable in number of black markings on secondaries, as in one example there is a fourth spot above those of marginal series, and in another specimen, which also has this fourth spot, there are, in addition, two spots above and two below the middle one of longitudinal series of three, thus forming a macular band.

Arichanna jaguarinaria.

Rhyparia jaguarinaria, Oberth. Etud. d'Entom. vi. p. 17, pl. ix. fig. 1 (1881).

Arichanna jaguarinaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 295 (1895).

One male specimen from Wa-shan, June.

Oberthür's type was from the province of Kwei-chow.

Hab. Western China.

This is probably only a form of *R. jaguararia*, Guen., in which the central macular band of secondaries is either obsolete or only faintly indicated; the yellow on these wings does not extend much beyond the submarginal series of spots.

Arichanna jaguararia.

Rhyparia jaguararia, Guen. Phal. ii. p. 198 (1857).

Several specimens from Ohoyama and Oiwake in Pryer's collection. I took the species at Tsuruga in July, and I have received it from Kiukiang and Ningpo. Guenée's type was

from N. China, and there are specimens in the National Collection at South Kensington from Yokohama, Hakone, Tokio, and Ashi-no-yo.

The specimens from Oiwake differ from the typical form in having the ground-colour of primaries and basal area of secondaries whiter, and for this form I propose the varietal name *pallidaria*.

Distribution. Japan; Central and Northern China.

Arichanna Gaschkevitchii.

Boarmia Gaschkevitchii, Motsch. Bull. Mosc. xxxix. p. 197 (1866).

Probably this species is identical with *Arichanna (Rhyparia) jaguararia*, Guen.

Arichanna flavomarginaria.

Rhyparia flavomarginaria, Brem. Lep. Ost-Sib. p. 83, pl. vii. fig. 11 (1864).

Abraxas flavomarginaria, Græser, Berl. ent. Zeit. 1888, p. 390.

Diastictis flavomarginaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 104.

Several specimens were captured by my native collector at Gensan in July. I have also received the species from Chang-yang, Moupin, and the province of Kwei-chow: June and July.

Distribution. East Siberia; Amur; Corea; Central and Western China.

The specimens in my series exhibit considerable variation in the size, number, and intensity of the black markings.

Genus EREBOMORPHA.

(Walk. Cat. Lep. Het. xxi. p. 494 (1860).)

Erebomorpha consors.

Erebomorpha consors, Butl. Ill. Typ. Lep. Het. ii. p. 52, pl. xxxvii. fig. 3 (1878).

Mesastrape consors, Warren, Novit. Zool. i. p. 432 (1894).

A few specimens from Fujisan and Nikko in Pryer's collection.

My native collector obtained the species at Hakodate in June or July, and there are specimens in the National Collection from Yokohama and Tokio. I have also received examples from Moupin and Chang-yang, July.

Distribution. Japan; Yesso; Western and Central China.

Some of the Chinese specimens appear to be intermediate between *E. consors*, Butl., and *E. fulgurita*, Walk.

Genus *PHYLLABRAXAS*, nov.

Palpi porrect, reaching slightly beyond the frons and clothed with long hair; outer margins of wings rounded. Primaries of male with fovea. Neuration as in *Arichanna*. Antennæ of male ciliated and finely serrated. Hind tibiæ dilated, with a tuft of long hair and two pairs of moderately long spurs.

Type *P. curvaria*.

Phyllabraxas curvaria, sp. n. (Pl. VII. fig. 3.)

Whitish, sparingly powdered with brownish. Primaries suffused with olive-grey and marked with fuliginous brown as follows:—a spot at the base; an angulated subbasal band united at the angle with a central fascia, the latter encloses a patch of the ground-colour at each end and its outer edge is curved and recurved; on the outer margin below apex there is a more or less quadrate spot, and on the costa before apex there is a similar one (these spots are united at their opposed angles), the lower encloses two white dots, which represent portions of a much interrupted submarginal line; on the outer marginal area above outer angle there is a third spot, and from the inner edge of this a streak descends to inner margin. Secondaries have a blackish discal spot and a submarginal band, the latter indicated by a brown spot on the costa, one about the middle, and a dash above anal angle. Fringes of primaries black, chequered with whitish towards inner margin; those of secondaries whitish marked with blackish. Under surface: primaries whitish, the apical spots are blackish and the basal area is suffused with the same colour; secondaries are whitish powdered with blackish, and have an incomplete central band in addition to the macular submarginal band as above, but both are blackish.

Expanse 42–46 millim.

Five specimens, including both sexes, from Ta-chien-lu, Moupin, and Omei-shan: July.

Hab. Western China.

In one female from Ta-chien-lu (the only specimen from that locality) the apical markings are browner.

Phyllabraxas similaria, sp. n.

Primaries sordid whitish, freckled with blackish and marked with reddish brown as follows:—a small patch at the base; a straight narrow subbasal fascia, commencing as a spot on costa; an outwardly diffuse central fascia, broadest

on costa, and enclosing a patch of the ground-colour at each end; a rather quadrate patch on costa before apex and a similar one on outer margin below apex, united at opposed angles; from the inner edge of the lower patch a straight narrow fascia descends to inner angle, but is only clearly defined below the second median nervule; discal spot black. Secondaries white, freckled with pale grey; discal spot blackish; central and submarginal fasciæ, the former hardly darker than the freckling, the latter represented by a blackish spot on costa, another about the middle, and a short blackish bar above anal angle. Fringes pale grey-brown, preceded on primaries by a row of black dots, becoming lunular towards inner angle, and on secondaries by a thin brownish line. Under surface: primaries fuscous grey, tinged with ochreous on costa, markings of upperside faintly reproduced; secondaries whitish, with the markings as above, but the central fascia is rather darker and the submarginal less distinctly indicated.

Expanse 40-42 millim.

Two male specimens from Pu-tsu-fong and one from Omei-shan: July.

Hab. Western China.

Allied to *P. curvaria*, but it differs in size and colour and also in the form of the fascia.

Phyllabraxas exsoletaria, sp. n.

Primaries whitish grey, speckled with black and suffused with smoky grey at the base of the wing and on outer marginal area; central fascia broad, slightly olivaceous, its inner edge black and undulated and its outer edge black and obtusely angled below costa; before the black discal spot there is a short black line from the costa, this is connected by a blackish suffusion with the external edge of fascia, thus forming a more or less quadrate patch on the outer costal portion of the fascia; the short line referred to has a dusky continuation to the inner margin, but it is not clearly defined; beyond the angle of fascia there are some black dots, and some other dots are placed towards inner margin and parallel with edge of fascia; submarginal line whitish, interrupted. Secondaries rather smoky white, with a black discal spot and indications of a central line. Fringes grey, preceded on the primaries by black dots between the nervules. Under surface smoky grey; basal area of primaries limited by a pale undulated and exteriorly diffuse band; secondaries greyish, speckled with darker; discal spot black; there is another

black spot about centre of the wing and blackish suffusion along abdominal margin.

Expanse 45 millim.

Three male specimens from Pu tsu-fong, June and July.

Var. divisaria.

The primaries are suffused with brownish; the central fascia is divided transversely into two parts, the outer being dark brown and the inner paler brown. Secondaries whitish, with discal spot and dusky central line which swells out into a spot about the middle and towards each extremity.

Expanse 43-48 millim.

Two male specimens from Omei-shan, July.

Hab. Western China.

Phyllabraxas conspicuaria, sp. n.

Primaries white, with olivaceous markings; basal patch pale olive-brown; central fascia clouded with darker olive-brown, enclosing white discal spot and limited outwardly by an oblique series of black dots; the inner edge is slightly curved below costa; outer marginal area clouded and suffused with dark olive-brown, limited inwardly by a pale olive-brown band and enclosing two diffuse white spots. Secondaries white, freckled with greyish; incomplete central band, discal spot, and shade between the latter and abdominal margin darker grey. Fringes grey and whitish, preceded by an interrupted blackish line. Under surface: primaries have the basal two thirds dusky, limited by a series of darker dots and enclosing a white discal spot; outer area dusky, with a whitish spot at apex and another about the middle: secondaries are whitish, freckled with grey-brown; central band blackish, macular; discal spot, a small cloud on abdominal margin, and three spots on costa also blackish.

Expanse 39 millim.

Three male specimens from Pu-tsu-fong, June.

Hab. Western China.

Genus ABRAXAS.

(Leach; Hampson, Fauna Brit. Ind., Moths, iii. p. 297 (1895).)

Abraxas evanescens.

Callabraxas evanescens, Butl. Trans. Ent. Soc. 1881, p. 420.

A fine series from Oiwake and Yesso in Pryer's collection. My native collector took the species at Hakodate in August.

Hab. Japan and Yesso.

Abraxas placida.

Abraxas placida, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 441 (1878);
Ill. Typ. Lep. Het. iii. p. 48, pl. liii. fig. 1 (1879).

Callabraxas propinqua, Butl. Trans. Ent. Soc. 1881, p. 420.

A few specimens from Oiwake, Nikko, and Yesso in Pryer's collection. I captured several examples at Hakodate in August.

Hab. Japan and Yesso.

Placida, Butl., appears to be an aberrant form of *propinqua*, Butl., but as it was the first to receive a name, it must stand as the type of the species, and *propinqua*, which is really the normal form, must rank as a variety. This is certainly unfortunate, but is not by any means a singular case.

Abraxas Whitelyi.

Abraxas Whitelyi, Butl. Ill. Typ. Lep. Het. ii. p. 52, pl. xxxvii. fig. 4 (1878).

A nice series from Oiwake, Yesso, and Nikko in Pryer's collection.

I captured specimens at Gensan in June, and my native collector at Hakodate in June or July. I have also received two specimens from Mr. Manley, of Yokohama.

There is a good deal of variation in the size of the black markings. In some of the specimens, including all the examples from Oiwake, the large spots on costa and inner margin, representing the central band, are not intersected by the ground-colour as in the type. These specimens have also distinct macular submarginal and marginal bands on all the wings.

Distribution. Amur (*Græser*); Corea; Japan; Yesso.

Abraxas languidata.

Abraxas languidata, Walk. Cat. Lep. Het. xxiv. p. 1122 (1862).

Callabraxas languidata, Hampson, Fauna Brit. Ind., Moths, iii. p. 518 (1895).

Four specimens from Ohoyama in Pryer's collection.

I captured a specimen at Shimonoseki in July, and have received two examples from Omei-shan, also taken in July.

Distribution. Japan and Western China.

Abraxas martaria.

Abraxas martaria, Guen. Phal. ii. p. 205 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 300 (1895).

I took a specimen at Foochou in April, and have received the species from Kiukiang, Ta-chien-lu, and Moupin: June.

This species may be distinguished from all the forms of *A. sylvata* by its larger size, more intense dark markings, and by the almost uninterrupted dark costal border.

Hampson considers *A. pusilla*, Butl., to be a small form of *A. martaria*, Guen., and the latter as possibly an extreme form of *A. sylvata*.

Distribution. Nepal; Sikhim; Bhután; Assam (*Hampson*); Eastern, Western, and Central China.

Abraxas sylvata.

Phalæna sylvata, Scop. Ent. Carn. p. 220 (1763).

Zerene leopardina, Köll. Hügl. Kasch. iv. p. 490.

Abraxas sylvata, Hampson, Fauna Brit. Ind., Moths, iii. p. 299 (1895).

Abraxas miranda, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 441 (1878);

Ill. Typ. Lep. Het. iii. p. 48, pl. lii. fig. 12 (1879).

Abraxas suffusa, Warren, Novit. Zool. i. p. 417 (1894).

Abraxas latifasciata, Warr. l. c. p. 419.

Abraxas fulvobasalis, Warr. l. c.

Abraxas suspecta, Warr. l. c.

Abraxas deminuta, Warr. l. c.

Abraxas degener, Warr. l. c.

This species appears to vary in Eastern Asia to even a greater extent than in Europe. I have specimens from various localities in Japan and from all the localities visited by my collectors in Central and Western China. Among these are examples agreeing more or less exactly with the forms named above, together with others that are intermediate between such forms and the more typical specimens. The largest individual in the series measures 60 millim. in expanse and the smallest 31 millim.

Distribution. Europe; Amur; Japan; Corea; Central and Western China.

Abraxas concinna.

Abraxas concinna, Warren, Novit. Zool. i. p. 421 (1894).

Described from Thibet. My collectors did not meet with this species.

Abraxas grossulariata.

Phal. Geometra grossulariata, Linn. Syst. Nat. x. p. 525.

Abraxas conspurcata, Butl. Ill. Typ. Lep. Het. iii. p. 48, pl. lii. fig. 11 (1879).

Abraxas flavisinuata, Warren, Novit. Zool. i. p. 420 (1894).

There were four examples of the *conspurcata* form from Oiwake and two of the *flavisinuata* form from Fujisan in Pryer's collection.

In the form *conspurcata* the markings on secondaries are

certainly more decided than in any European specimen of *grossulariata* that I have seen, but the pattern is only a complete development of markings seen more or less clearly indicated in the majority of European *grossulariata*. Neither of the Japanese forms of this species diverge so widely from the type as do certain varieties of the species known to British entomologists.

I have received a nice series from Chang-yang, taken in July. In these specimens the markings on primaries are somewhat similar to those of *A. picaria*, Moore, but the markings on secondaries are much the same as in typical *A. grossulariata*, though not so pronounced—fuscous instead of black on all the wings. The yellow markings are in all cases less distinct, and in several specimens entirely obsolete. I propose the name *sinicaria* for this form.

Distribution. Europe; Siberia; Amur; Japan; Central China.

Abraxas picaria.

Abraxas picaria, Moore, Proc. Zool. Soc. Lond. 1867, p. 652.

Appears to be a common species in Western China, occurring in July and August.

Specimens of the typical form exhibit considerable modification in the amount of black on primaries; in some examples this colour largely predominates. In addition to what may be regarded as ordinary aberration, there are three forms of the species from Western China, each of which appears to be worthy of a distinctive name.

Var. *tortuosaria*, nov.

In this form the only prominent markings on the primaries are the costal portions of subbasal line, the discal spot, the sinuous and deeply angled transverse line beyond the middle, and a series of spots on outer margin; the secondaries are only sparsely dotted with fuscous on basal area, but the other markings are much as in the type.

Ta-chien-lu, Omei-shan, Moupin: July.

Var. *grisearia*, nov.

Primaries whitish, heavily clouded and spotted with grey; the base is yellow, edged with black; discal spot black, with a black cloud-like spot before it on the costa, from the last there is sometimes a blackish shade extending to inner margin; submarginal band blackish, mixed with yellow, elbowed just above the middle. Secondaries whitish, spotted

with blackish, especially on abdominal area, which is tinged with yellowish; discal spot blackish; a yellow band dotted or edged with black extends from just above anal angle to a little beyond third median nervule. Fringes grey on primaries, whitish on secondaries, preceded on each wing by a row of black spots. Under surface similar to the upper-side, but the transverse markings are not distinct on primaries and there is a black spot on the middle of the costa of secondaries.

Expanse 44-46 millim.

Nine male specimens from Pu-tsu-fong, July.

Var. nebularia, nov.

Primaries whitish, mottled and clouded with smoky brown; discal spot blackish, placed in the lower end of a cloud on costal area; basal area marked with yellow; beyond the middle of the wing there is a yellow irregular line, but this is not clearly defined. Secondaries whitish, sprinkled with brownish; there is a small cloud-like spot on the middle of the abdominal margin, and a short dash of yellow, bordered on each side by brownish spots, above anal angle; central spot blackish. Fringes brownish, marked with whitish at ends of the nervules. Under surface similar to above, but the yellow markings of primaries are absent and there are some yellow hairs at the base of secondaries.

Expanse 44-54 millim.

I have a long and rather variable series of this form, the specimens comprised therein being from Ta-chien-lu, Pu-tsu-fong, Ni-tou, Wa-shan, Omei-shan, and Chia-ting-fu: July.

Distribution. Kumaun; Sikhim (*Hampson*); Western China.

Abraxas punctisignaria, sp. n. (Pl. VII. fig. 13.)

Primaries pale yellowish buff, marked with yellow at the base of costa and sparingly spotted with black; the most conspicuous of these spots are three or four on basal portion of costa and a transverse series beyond the middle of the wing, the spots forming the lower portion of the series are rather larger than the others and are placed on a yellow abbreviated band from the inner margin. Secondaries paler than primaries, but more liberally spotted with black, the central series followed on abdominal margin by a yellow patch; all the wings have a black discal spot. Fringes pale yellowish buff. Under surface similar in colour to that of the upper-side of the secondaries; black markings as above,

but there is no trace of yellow. Body yellow, marked with black on the back and sides.

Expanse 40 millim.

Two male specimens: one from Moupin, July, and one from the summit of Omei-shan, August.

Hab. Western China.

Abraxas flavobasalis, sp. n.

Male.—Creamy white; basal area of primaries yellow, spotted with black and limited by a black macular line elbowed at costa; some blackish spots beyond the discal spot form fairly regular central and submarginal series, the latter outwardly bordered towards the inner margin with yellow; marginal series much interrupted and not well defined. Secondaries have a blackish spot at the base and some other spots of the same colour arranged in three transverse series, the middle series bordered with yellow towards anal angle. Under surface whitish, spots as above, but no yellow markings. Body yellowish, marked on the sides of abdomen with black and also on the dorsal surface of the seventh, eighth, and ninth segments.

Female.—Similar to the male, but the ground-colour is rather whiter.

Expanse, ♂ 36, ♀ 39 millim.

One example of each sex from Chang-yang, July.

Hab. Central China.

Abraxas punctaria, sp. n.

Female.—Yellowish buff. Basal area of primaries yellow, dotted with black and limited by three black dots, one on the median and submedian nervures respectively and one between the costa and subcostal nervure; beyond the discal spot there are four transverse series of black dots, with a short yellow band between the second and third, starting from inner margin. Secondaries have four transverse series of black dots, with a yellow abbreviated band between the second and third, as on primaries; immediately preceding the innermost of these series there are some diffuse dots above the abdominal margin. Under surface whiter than above; transverse series of dots hardly so distinct; no yellow markings. Head and thorax yellow; dotted with black; abdomen pale yellowish, with a black dot on the back and side of each segment except the terminal one and that next the thorax.

Expanse 32 millim.

One female specimen from Moupin, July.

Hab. Western China.

Abraaxas reticularia, sp. n.

Primaries white, sparingly dotted with brownish; traversed by two diffuse blackish-brown transverse bands and a diffuse longitudinal band of the same colour; the outer of the transverse bands is bifurcate on the costa and expands on the inner margin, sometimes it is intersected by a thin whitish line; above the black discal spot there is a blackish cloud, from which a spur descends to longitudinal band. Secondaries white, speckled with brownish and exhibiting traces of a brownish central band; discal spot blackish. Fringes white, more or less chequered with brownish. Under surface similar to the upper. Body yellow, marked with black.

Expanse 40-44 millim.

Five male specimens and one female from Ta-chien-lu, Omei-shan, Ni-tou, and Che-tou: July.

Hab. Western China.

Abraaxas curvilinearis, sp. n. (Pl. VII. fig. 12.)

White. Primaries sparingly freckled with greyish brown; basal patch dark ochreous, bordered with brown; discal spot brown, surmounted by a brownish cloud on costa; there is a transverse curved and recurved brown band beyond the middle, expanding towards inner margin. Secondaries have a series of five brownish spots, terminating in a brownish bar, outwardly bordered with yellow, on abdominal margin. Under surface: colour as above, markings faintly reproduced.

Expanse, ♂ 44, ♀ 46 millim.

One example of each sex from Chia-ting-fu, July.

Hab. Western China.

Genus LIGDIA.

(Guen. Phal. ii. p. 209 (1857).)

Ligdia japonaria, sp. n. (Pl. VII. fig. 1.)

White. Basal area of primaries smoky brown, spotted with black and limited by a curved series of black spots; above the anal angle there is a smoky-brown patch, intersected by the median nervules and connected by a narrow blackish band with a blackish blotch on the costa; discal spot blackish, with a spot above it on the costa and one below it on inner margin, and there are some spots and clouds of the same colour on the outer marginal area. Secondaries have a blackish central spot and broad transverse band, and there are some marks of the same colour on abdominal margin.

and also on the outer margin. Fringes greyish white, marked with darker on primaries. Under surface similar to above, but the basal area of primaries is clouded with blackish and all the markings are of the same colour.

Expanse, ♂ 28, ♀ 31 millim.

Several specimens in Pryer's collection from Oiwake.

Hab. Japan.

Allied to *L. adustata*, Schiff.

Ligdia ciliaria, sp. n.

White. Primaries have a blackish basal patch and border on outer margin, the latter is broadly interrupted in the middle; discal spot black. Secondaries have a black discal spot and the outer margin is bordered as on primaries; there is a blackish cloud on the middle of the abdominal margin; all the dark patches are suffused with golden brown. Fringes golden brown, marked with a rather darker shade. Under-side similar to above, but the borders are not quite so broad.

Expanse 28 millim.

One female specimen from Oiwake in Pryer's collection.

Hab. Japan.

Also allied to *L. adustata*, Schiff.

Genus LOMASPILIS.

(Hübner, Verz. Schmett. p. 316.)

Lomaspilis marginata.

Phal. Geometra marginata, Linn. Syst. Nat. x. p. 527; Clerck, Icon. pl. ii. fig. 5.

Abraxas marginata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 116.

Lomaspilis opis, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 442 (1878);

Ill. Typ. Lep. Het. iii. p. 49, pl. liii. fig. 3 (1879).

There were several specimens from Oiwake, Nikko, and Yesso in Pryer's collection. I have also received the species from Chang-yang, June.

Most of the Japanese examples of *L. marginata* in my series are referable to the form which Butler has named *opis*, but some are very typical.

Græser also records var. *opis* from Amurland (Berl. ent. Zeit. 1888, p. 391).

Distribution. Europe; Amur; Japan; Yesso; Central China.

Genus METABRAXAS.

(Butl. Trans. Ent. Soc. Lond. 1881, p. 419.)

Metabraxas clerica.*Metabraxas clerica*, Butl. Trans. Ent. Soc. Lond. 1881, p. 419.*Metabraxas clerica*, var. *inconfusa*, Warren, Novit. Zool. i. p. 415 (1894).

There were a few specimens from Oiwake and Yesso in Pryer's collection.

I captured several examples at Hakodate in August, and have received one female from Chang-yang, where it was taken in July. Butler's type was from Tokio.

The black spots are variable in size and degree of confluency; in var. *inconfusa*, Warr., they are well separated.

Distribution. Japan; Yesso; Central China.

Metabraxas luridaria, sp. n.

White. Basal area of primaries leaden grey, marked with ochreous; costa broadly marked with leaden grey; central fascia, submarginal and marginal bands also leaden grey, the first two macular, the second united with the third on apical area and also towards inner margin. Secondaries have the following leaden-grey markings:—a spot on median nervure, with one between it and a spot on abdominal margin; a central fascia, the middle portion of which is broken up into twin spots; a macular submarginal and a marginal band united as on primaries. Fringes grey. Under surface as above, but the base of the primaries is not marked with ochreous. Antennæ of the male ciliated. Head brownish grey, face whitish. Thorax light brown, marked with darker. Abdomen grey, with two black spots on each segment above. Legs grey.

Expanse 54 millim.

One male example from Moupin, July.

Hab. Western China.

In general appearance this species greatly resembles *M. rufonotaria*, but the antennæ of the male are different in structure and the arrangement of the markings, although very similar, is not identical.

Metabraxas rufonotaria, sp. n.

White, with leaden-grey and brownish markings. On the primaries the leaden-grey markings comprise a basal patch and a streak along the costa, a broad central fascia interrupted

just above the middle; a submarginal band, also interrupted above the middle, and only separated from the marginal band by a transverse row of spots of the ground-colour; between the basal patch and central fascia there is a short interrupted dash from the costa; the brownish marks are placed on the basal patch and costal portion of short dash beyond and also on the costal and inner marginal portions of the central fascia. Secondaries have a blackish discal spot and a smaller spot on the first fork of median nervure; the leaden-grey central fascia is interrupted about the middle and sometimes before inner margin; marginal and submarginal bands as on primaries, but the latter is not marked with brown. Fringes dark grey in the male, paler in the female. Under surface as above, but there are no brownish markings on primaries. Antennæ of the male bipectinated. Head greyish, face brownish. Thorax grey, marked with brown. Abdomen yellow, with two black spots on each segment above. Legs yellow, tarsi marked with black.

Expanse, ♂ 54, ♀ 56 millim.

Four specimens (three males and one female) from Omeishan, July.

Hab. Western China.

Metabraxas incompositaria, sp. n.

Male.—White, spotted and marked with dingy grey. On the primaries these markings represent a basal patch and central fascia, with a short band between them from costa to discal spot, and a broad band on outer marginal area, the last is composed of smaller spots. Secondaries have an interrupted central band, a discal spot, and some smaller spots between it and the base of the wing; some scattered spots on outer marginal area. Fringes grey, narrowly interrupted with white on the secondaries and towards the inner angle of primaries. Under surface: markings as above, but blacker. Antennæ of the male bipectinated. Head and thorax yellow, spotted with black, face blackish. Abdomen yellowish. Legs grey, marked with blackish.

Female.—Similar to the male, but the spots on basal and inner marginal areas are smaller and those on outer marginal area fewer in number, especially on the secondaries.

Expanse 62 millim.

Seven male specimens and one female from Chang-yang, June.

Hab. Central China.

Metabraxas molossaria.

Abraxas molossaria, Oberth. Etud. d'Entom. x. p. 32, pl. iii. fig. 10 (1884).

This species is described by Oberthür from Tong-Tchéou (province of Kwei-chow). My collectors did not meet with it in any part of China that they visited.

Oberthür states that this is a variable species and that he has received a melanic form of it from Northern India.

Hab. Western China.

Metabraxas (?) nigromarginaria, sp. n.

White, with broad fuliginous borders to all the wings; these borders are preceded by a series of spots of the same colour; on the primaries there are, in addition, a broad fuliginous streak along the costal portion of the basal third of the wing and some yellow markings at the extreme base; discal spot black, with a short interrupted band beyond; the apical portion of the marginal border of primaries is very broad and encloses some spots of the ground-colour; the inner marginal area of these wings is rather thickly spotted with fuliginous. Secondaries have a few dark spots at their base. Fringes of primaries fuliginous, slightly marked with white; of secondaries white, chequered with fuliginous. Under surface as above. Antennæ bipectinated nearly to the tip. Body black, marked with yellow.

Expanse 54 millim.

One male specimen from Wa-shan, June.

Hab. Western China.

Genus DILOPHODES.

(Warren, Novit. Zool. i. p. 416 (1894).)

Dilophodes elegans.

Abraxas elegans, Butl. Ill. Typ. Lep. Het. ii. p. 53, pl. xxxvii. fig. 6 (1878).

Dilophodes elegans, Warren, Novit. Zool. i. p. 416 (1894); Hampson, Fauna Brit. Ind., Moths, iii. p. 305 (1895).

Several specimens from Ohoyama, Nikko, and Gifu in Pryer's collection.

I captured the species in Satsuma in May, and Mr. Smith at Hakone in August. One male specimen was obtained by my collectors in the province of Kwei-chow, a female example at Omei-shan, and several specimens at Chang-yang: July.

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The black markings of the Japanese specimens are larger and more confluent than in Chinese examples.

Distribution. Japan; Western and Central China. Khásis (*Hampson*).

Dilophodes conspicuaria, sp. n.

White, marked with black. Primaries spotted on basal area; central fascia interrupted, broadest on costa; outer marginal area banded with black; this band, which is narrowest in the middle, is intersected with white or whitish along the neuration and traversed by a white line; between the central fascia and marginal band is a spot on costa, sometimes united with the former. Secondaries have a spot at the base and one between it and the discal spot; there is also a spot on the middle of abdominal margin; outer marginal area as on primaries. Fringes of primaries black, tending to grey towards the inner angle; those of secondaries are pale grey. Under surface similar to the upperside, but there is a broad black dash along the costa of secondaries extending from basal spot to outer marginal band. Head and thorax ochreous, the latter spotted above with black and the patagia marked with whitish; abdomen white, dorsally marked with black, and the terminal segment with a tuft of long silky grey hairs.

Expanse ♂ 58-64, ♀ 52-60 millim.

There were two male specimens and four females from Gifu in Pryer's collection. I have also received two males from Central China, where they were captured at a place thirty miles north-west of Ichang in July; in one of these the line traversing the outer marginal border is obsolete.

Distribution. Japan; Central China.

Genus PERCNIA.

(Guen. Phal. ii. p. 216 (1857).)

Percnia foraria.

Percnia foraria, Guen. Phal. ii. p. 217 (1857); Leech, Trans. Ent. Soc. Lond. 1889, p. 146; Hampson, Fauna Brit. Ind., Moths, iii. p. 307 (1895).

Xenoplia foraria, Warren, Novit. Zool. i. p. 415 (1894).

There were a few specimens from Yokohama in Pryer's collection.

I received the species from Chang-yang, Kiukiang, Omeishan, and the province of Kwei-chow: June and July.

Distribution. Dharmasála; Simla; Sikhim (*Hampson*); Japan; Central and Western China.

Percnia belluaria.

Percnia belluaria, Guen. Phal. ii. p. 217 (1857).

Percnia guttata, Feld. Reis. Nov. v. pl. cxxx. fig. 15, ♂ (1874).

Percnia belluaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 308 (1895).

Three specimens from Chang-yang, one from Wa-shan, four from Pu-tsu-fong, and one from Omei-shan: June and July. I took this species in September in Southern Kashmir and I have received it from Kulu.

Distribution. Sikhim; Khásis (*Hampson*); Kulu; Kashmir; Central and Western China.

Percnia grisearia, sp. n.

Male.—Whitish. Primaries tinged with cinnamon-grey at the base and clouded with blackish on basal half; all the wings are traversed by series of black dots arranged as in *P. fumidaria*, but the bands are blackish grey and considerably interrupted, especially on the lower portion of outer margin of primaries and on the secondaries. Fringes whitish grey, becoming darker towards apex of primaries. Under surface of primaries much clouded with blackish grey, that of secondaries very similar to upperside, but the markings are rather paler. Thorax and abdomen cinnamon-grey, spotted with black.

Female.—Wings rather more ample; outer margin of primaries rounder. The blackish-grey central band of primaries is much broken up and the bands on secondaries are almost obsolete; the under surface of primaries is free from blackish-grey clouding except on basal portion of costa and on apical area of primaries.

Expanse, ♂ 58, ♀ 60 millim.

Ten specimens (seven males, three females) from Kiu-kiang, Ichang, Chang-yang, Kwei-chow, and Chia-ting-fu.

Hab. Central and Western China.

This species and also *P. fumidaria* are allied to *P. belluaria*, Guen.

Percnia fumidaria, sp. n.

Male.—Whitish. Primaries suffused with pinky grey on the basal half and traversed by five rows of black dots, those of central and two inner series placed on the neuration and those of outer series placed between the nervules; the central series is followed by a broad band of pinky grey and the space between the two outer series is grey, with the exception of some bars of the ground-colour between the opposed dots;

the discal spot is black and there are two black dots at the base of wing. On the secondaries the arrangement of black dots and pink-grey bands corresponds with that on primaries, except that there are only two black dots and the discal spot between the central series and the base of the wing. Fringes pinky grey. Under surface whitish; discal spot on all the wings black, larger than above and followed by a transverse series of short black dashes on the nervules; two outer series of dots as on upperside, but those of primaries obscured by a band of grey.

Female.—Similar to the male, but the wings are rather more ample, and the outer margin of primaries rounder; the pinky-grey suffusion is more restricted to basal area.

Expanse, ♂ 46, ♀ 52 millim.

Several examples of each sex from Chang-yang and Ichang and a pair from Chia-ting-fu: July.

Hab. Central and Western China.

Percnia giraffata.

Abraxas giraffata, Guen. Phal. ii. p. 205 (1857).

Rhyparia grandaria, Feld. Wien. ent. Mon. 1862, p. 39; Reise Nov. pl. cxxix. fig. 28 (1874).

Percnia giraffata, Hampson, Fauna Brit. Ind., Moths, iii. p. 309 (1895).

Two specimens from Fujisan in Pryer's collection. Three specimens from Chang-yang, one from Wa-shan, two from Omei-shan, one from Moupin, and one from the province of Kwei-chow: June.

Distribution. Sikhim and Burma (*Hampson*); Japan; Central and Western China.

Percnia exanthemata.

Culcula exanthemata, Moore, Lep. Atk. p. 266 (1887).

Percnia exanthemata, Hampson, Fauna Brit. Ind., Moths, iii. p. 308 (1895).

Buzura abraxata, Leech, Trans. Ent. Soc. Lond. 1889, p. 143, pl. ix. fig. 14, ♀.

I received specimens of this species from Kiukiang, Moupin, and Omei-shan, all taken in July.

The males range from 64–72 millim. in expanse and the females from 74–90 millim.

Distribution. Sikhim; Khásis (*Hampson*); Central and Western China.

Genus OBEIDIA.

(Walk. Cat. Lep. Het. xxiv. p. 1139 (1862).)

Obeidia vagipardata.

Obeidia vagipardata, Walk. Cat. Lep. Het. xxiv. p. 1139 (1862).

Common at Chang-yang, Kiukiang, and in all the localities visited by my collectors: June and July.

There is considerable variation in the size of the black spots; those on the secondaries are often confluent and form more or less complete bands. In one male specimen from the province of Kwei-chow the secondaries are almost entirely blackish and the outer and inner marginal areas of primaries are broadly marked with the same colour.

Hab. Central and Western China.

Obeidia rongaria.

Rhyparia rongaria, Oberth. Etud. d'Entom. xviii. p. 35, pl. ii. fig. 22 (1893).

Described by Oberthür from a specimen received by him from Tsé-kou.

Hab. Western China.

Obeidia idaria.

Rhyparia idaria, Oberth. Etud. d'Entom. xviii. p. 35, pl. v. fig. 73 (1893).

Oberthür's type was from Tsé-kou.

Hab. Western China.

Obeidia tigrata.

Abraaxas tigrata, Guen. Phal. ii. p. 202 (1857).

Obeidia tigrata, Hampson, Fauna Brit. Ind., Moths, iii. p. 309, fig. (1895).

Rhyparia leopardaria, Oberth. Etud. d'Entom. vi. p. 17, pl. ix. fig. 5 (1881).

A large number of specimens were received from Moupin, Omei-shan, Chia-ting-fu, Kiukiang, and Chang-yang: June and July. I captured the species at Gensan in July.

This species varies in expanse, in the tone of the yellow coloration, and also in the size of the black spots; in some specimens the spots on secondaries are confluent and form bands.

Leopardaria, Oberth., is certainly a form of this species;

I have a specimen from Moupin which is almost exactly identical with Oberthür's figure.

Distribution. Sikkim; Nágas; Penang (*Hampson*); Corea; Central and Western China.

Obeidia gigantearia, sp. n.

Male.—Yellow, central area of all the wings white; basal, costal, and marginal areas heavily spotted with black. All the wings have a black irregular fascia and a diffuse submarginal band: there is also a more or less complete subbasal band on the secondaries. Fringes yellow, chequered with black. Under surface as above.

Female.—Similar to the male, but the central fascia and submarginal band on all the wings are broken up into spots, as also is the subbasal band on secondaries.

Expanse 86–92 millim.

A large number of specimens from the province of Kweichow and from Omei-shan and Moupin, also one example from Chang-yang: June and July.

Hab. Central and Western China.

Obeidia conspurcata, sp. n.

Male.—Yellow, central area of all the wings white; basal, costal, and marginal areas spotted with blackish; all the wings have a broad central fascia and an ill-defined submarginal band, the former composed of large blackish spots and the latter of smaller spots. Fringes yellow, chequered with blackish. Under surface as above.

Female.—Similar to the male, but the wings are rather more ample and the spots forming the central fascia are smaller and more scattered.

Expanse 70–72 millim.

A long series from Chang-yang, also several specimens from Omei-shan, Moupin, and Kweichow: July.

Hab. Central and Western China.

This species is very like *O. gigantearia*, but it is smaller and the maculation is not so black or so heavy, and the bands are never so well defined.

Obeidia (?) *Largeteaudi*.

Rhyparia Largeteaudi, Oberth. Etud. d'Entom. x. p. 32, pl. i. fig. 5 (1884).

Appears to be common at Ichang, Chang-yang, and Omei-shan. I also received one specimen from Chia-ting-fu: June and July.

Hab. Central and Western China.

Obeidia (?) *aurantiaca*.

Halthia aurantiaca, Alph. Rom. sur Lép. vi. p. 56, pl. iii. fig. 2, ♂ (1892).

Alphéraky records a male specimen from the river Heï-hò, in the province of Kan-Sou : July.

Genus VITHORA.

(Walk. Cat. Lep. Het. iv. p. 818 (1855).)

Vithora stratonice.

Phalena stratonice, Cram. Pap. Exot. iv. p. 234, pl. cccxcviii. fig. K.

Cystidia stratonice, Hübn. Verz. Schm. p. 174 (1800).

Vithora agrionides, Butl. Ann. & Mag. Nat. Hist. (4) xv. p. 137 (1875);

Ill. Typ. Lep. Het. pt. ii. p. 3, pl. xxii. fig. 3 (1878).

Vithora stratonice, Leech, Proc. Zool. Soc. Lond. 1888, p. 614.

Cistidia stratonice, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 116.

I met with this species at many places in Japan during the months of May, June, and July; at Gensan in June; and I have received two specimens from Kiukiang.

Distribution. Japan; Corea; Central China.

Vithora indrasana.

Vithora indrasana, Moore, Proc. Zool. Soc. Lond. 1865, p. 795, pl. xlii. fig. 5.

Halthia nigripars, Swinh. Trans. Ent. Soc. Lond. 1892, p. 16, pl. i. fig. 1.

Vithora indrasana, Hampson, Fauna Brit. Ind., Moths, iii. p. 311 (1895).

I have a long series of this species from Moupin and Omeishan, captured in July.

Distribution. Sikhim; Khásis (*Hampson*); Western China.

The specimens agree better with the form *nigripars* from Khásis than with Sikhim specimens. The central white markings on secondaries, however, are smaller, especially the dash in cell, which is represented by a patch in the cell and a small spot just outside.

Vithora couaggaria.

Abraxas couaggaria, Guen. Phal. ii. p. 202 (1857).

Halthia eurypyle, Mén. Bull. de l'Acad. Pét. xvii. p. 217; Schr. Amur-Reise, p. 47, pl. iv. fig. 3 (1859).

Halthia eurymede, Motsch. Etud. d'Ent. 1860, p. 30.

Cistidia couaggaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 116.

Abraxas interruptaria, Feld. Wien. ent. Mon. 1862, p. 39; Reise der Nov. pl. cxxix. fig. 29; Leech, Trans. Ent. Soc. Lond. 1889, p. 145.

Abraxas lithosiaria, Walk. Cat. Lep. Het. xxiv. p. 1125 (1862).

There were several specimens in Pryer's collection, and I

captured some fine examples at Nagahama and Gensan in July. I have also received the species from several Chinese localities.

Distribution. Japan; Corea; Amur; Central and Western China.

The very extensive series that I have retained comprises all the intergrades between a specimen which is white in ground-colour, with narrow black bands, and one which is black in colour, with three small white spots on the basal area and two spots, rather larger, on the outer third of primaries. The secondaries of this specimen are black, with two white bands.

Genus NEOLYTHRIA.

(Alph. Rom. sur Léop. vi. p. 72 (1892).)

Neolythria djrouchiaria.

Abrazas djrouchiaria, Oberth. Etud. d'Entom. xviii. p. 34, pl. iii. fig. 37 (1893).

I received a number of specimens from Ta-chien-lu, Moupin, and Che-tou. In some of these the black transverse band of primaries is not intersected by a yellow line.

Var. *montana*, nov. (Pl. VII. fig. 11.)

Smaller than the type; the transverse band of primaries is broader, the black spots on outer margin of each wing are united and form a marginal band, the secondaries have a distinct macular submarginal band.

A long series was taken on the summit of Mount Omei in August.

In one female example of this form the ground of primaries is yellowish, and the secondaries are tinged with the same colour.

Hab. Western China.

Neolythria abraxaria.

Neolythria abraxaria, Alph. Rom. sur Léop. vi. p. 72, pl. iii. figs. 8 a, b (1892).

This species was first discovered in the province of Szechuen. The specimens I have received from Western China do not agree with the type; I therefore describe them as var. *confinaria*, nov.

In this form the white submarginal band on primaries is much narrower and its edges are serrated; the lower discal streak is shorter, and there is sometimes a small triangular

spot between this and the upper streak ; on the secondaries the marginal black spots are larger.

Three specimens from Che-tou and two from Ta-chien-lu, July.

Hab. Western China.

Neolythria tandjrinaria.

Abraaxas tandjrinaria, Oberth. Etud. d'Entom. xviii. p. 34, pl. ii. fig. 23 (1893).

Occurs not uncommonly at Chin-kou-ho, Wa-shan, Huang-mu-chang, and Chang-yang : June and July.

Among the specimens from Chin-kou-ho was an example of the female, and as this sex has not been previously described, I append a short description.

Female.—Yellow band, together with the black internal border, on outer margin of primaries much narrower than in the male ; the inner row of spots only represented by two or three on the costal portion. On the secondaries the spots of the inner row on outer margin are linear and almost touching the outer ones.

Hab. Western and Central China.

Neolythria consimilaria, sp. n.

Similar to *A. tandjrinaria*, Oberth., but the black border of the yellow band on outer margin of primaries, which is rather fulvous in tint, is deeply indented on costal area ; the black spots forming the inner series are larger, especially the costal one and that below it ; the two rows of black spots on outer margin of secondaries are wider apart ; all the wings have a distinct black discal spot.

Expanse 30–32 millim.

Several specimens (all males) from Wa-ssu-kow ; examples have also been received from Ta-chien-lu and Pu-tsu-fong : June and July.

Hab. Western China.

Neolythria Oberthüri, sp. n. (Pl. VII. fig. 6.)

Also similar to *A. tandjrinaria*, Oberth., but the outer marginal band of primaries is not tapered, but of almost uniform width from costa to inner margin ; the inner row of black spots is free and does not unite with the black bordering line at any point. On the secondaries the marginal series of black spots are even wider apart than in *A. consimilaria*, and there is a black dot on each nervule before the inner series ;

the black discal spot of primaries is linear and slightly curved, that on secondaries, when present, is punctiform.

Expanse, ♂ 36, ♀ 38 millim.

Seven male specimens and three females from Moupin and Huang-mu-chang: July and August.

Hab. Western China.

Neolythria nubiferaria, sp. n.

White, slightly tinged with smoky, venation blackish. Primaries: costa blackish, most broadly so near the white transverse line, which precedes a deep blackish border on outer margin; discal spot black. Secondaries have a small black discal spot. Fringes whitish, preceded by a series of blackish lunules. Under surface similar to above.

Expanse, ♂ 26, ♀ 28 millim.

One example of each sex from How-kow.

Hab. Thibet.

Genus XANTHABRAXAS.

(Warren, Novit. Zool. i. p. 422 (1894).)

Xanthabraxas hemionata.

Abraxas hemionata, Guen. Phal. ii. p. 208 (1857).

Xanthabraxas hemionata, Warren, Novit. Zool. i. p. 422 (1894).

I received four specimens from Chang-yang, one from Kiu-kiang, and five from Moupin: July.

Hab. Central and Western China.

EXPLANATION OF THE PLATES.

PLATE VI.

Fig. 1. *Heterocallia truncaria*, sp. n., p. 212.

Fig. 2. *Urapteryx subpunctaria*, Leech, p. 192.

Fig. 3. — *similaria*, sp. n., p. 192.

Fig. 4. *Anonychia prœditaria*, sp. n., p. 226.

Fig. 5. *Xylxscia biangularia*, sp. n., p. 210.

Fig. 6. *Oberthürria nigromacularia*, sp. n., p. 189. *gen. Parabraxas (cf. part. II, p. 189)*

Fig. 7. — *flavomarginaria*, sp. n., p. 188.

Fig. 8. *Heterolocha quadraria*, sp. n., p. 231.

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Fig. 10. *Krananda lucidaria*, sp. n., p. 305.

Fig. 11. *Psychostrophia picaria*, sp. n., p. 189.

Fig. 12. *Venilia flavaria*, sp. n., p. 233.

Fig. 13. *Myrteta sinensaria*, sp. n., p. 195.

Fig. 14. *Macaria elongaria*, sp. n., p. 308.

Fig. 15. *Pericallia marmorataria*, sp. n., p. 207.

PLATE VII.

- Fig. 1. *Ligdia japonica*, Leech, p. 449.
 Fig. 2. *Boarmia venustaria*, Leech, p. 414.
 Fig. 3. *Phyllabraxas curvaria*, sp. n., p. 441.
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 Fig. 5. — *fumosaria*, Leech, p. 417.
 Fig. 6. *Neolythria Oberthüri*, sp. n., p. 461.
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 Fig. 11. *Neolythria djrouchiaria*, Oberth., var. *montana*, nov., p. 460.
 Fig. 12. *Abraxas curvilinearis*, sp. n., p. 449.
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 Fig. 14. *Boarmia basifuscaria*, Leech, p. 416.
 Fig. 15. — *ornataria*, Leech, p. 417.

XLIV.—*Descriptions of Two new Muridæ from Central and West Africa.* By W. E. DE WINTON.

THE examination of some specimens of West-African Muridæ lately acquired by the British Museum and kindly entrusted to me for determination by Mr. Oldfield Thomas shows the necessity for descriptions being drawn out and names given to two forms. One I propose to name *Mus sebastianus*, the peculiarity of the fur suggesting arrows sticking in its skin. The other I name *Malacomys centralis*; the examples of this species were collected and presented to the British Museum by Dr. Emin Pasha ten years ago, and referred to by Thomas (P. Z. S. 1888, p. 11) as *M. longipes*, but have until now never been compared with specimens of *M. longipes*, M.-Edw. The Museum has since acquired several specimens of this West-African form.

Mus sebastianus, sp. n.

Size rather smaller than *M. rattus*: whole of the upper parts dull coffee-brown, fur soft and rather woolly, interspersed with long shining lance-shaped darker hairs; beneath greyish white, not sharply separated from the colour of the upper parts; feet and hands covered with fine short adpressed brown hairs; nails pale horn-colour, small on the fore feet, those on the hind feet much larger and stronger, curved, but not very sharp; front part of the face and nose thickly haired; whiskers all black-brown, long, reaching well beyond ears; in the alcoholic specimens the ear laid forward just reaches to postcanthus of the eye; tail very long, unicoloured dark slate, smooth and practically naked.

The general colour of this mouse seems to come between "vandyke" and "burnt umber" of Ridgway. The long shining hairs are very conspicuous, as they are fully twice the length of the rest of the coat and wave with their own weight as the specimen is turned about in the hand; a closer examination shows that these hairs are of very peculiar shape, being exceedingly fine for more than half their length, then increasing several diameters and ending in a point; thus, when a single hair is extracted and laid on the table it resembles a miniature porcupine-quill on the end of a fine piece of wire. The fore feet are very typical of the genus, and there is nothing out of the common in the structure of the hind feet; the first toe reaches to base of second, fifth to end of first phalanx of fourth; pads, first four are large, last two small, all pointed; soles smooth and naked.

Type, ♀ in al. (97. 2. 21. 4 in British Museum):—Mammæ 1—2=6. Head and body 141 millim.; tail 190; hind foot 29; ear 18.

A younger ♂:—Head and body 132; tail 185; hind foot 28; ear 17.

Loc. Efulen, Cameroons.

The skull somewhat resembles that of *M. univittatus*, but is more ridged. In profile it is arched; it is rather short and broad, bumpy and angular; supraorbital and temporal ridges strongly developed, forming well-marked angles at the junction of the frontals and parietals, and also in the middle of the latter over posterior roots of zygomatica; the ridges continue back to join the occipital ridge, forming a polygonal pattern on the top of the skull, only open across the inter-orbital constriction; the zygomatica, bowed evenly downwards, are of nearly equal thickness throughout. Auditory bullæ very small. The molars are exceedingly simple; in neither of the specimens to hand is there any sign of cusps, and the pattern of the enamel folds is perfectly plain, with none of the minor folds found in a greater or less degree of development in the teeth of nearly every member of the genus. Upper incisors orange-yellow, lower rather paler. The palatal foramina barely reach a line drawn between the front roots of molars; the postnasal opening is rounded and open, the back of the palate barely extending to the level of the back of the molar series.

Mandibles short and deep, condyles set very high nearly to level of coronoids, which are small; the back line is very little bowed in from the perpendicular.

Skull measurements:—Greatest length 37·5 millim., greatest breadth 18·5; breadth of brain-case 15, constr. 6·5;

LV.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.—Part II. *Family* Geometridæ; *Subfamilies* *Ænochrominæ*, *Orthostixinæ*, *Larentiinæ*, *Acidaliinæ*, and *Geometrinæ*.

Subfamily *ÆNOCHROMINÆ*.

Genus *SARCINODES*.

(Guen.; Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 315 (1895).)

Sarcinodes restitutaria.

Auxima restitutaria, Walk. *Cat. Lep. Het.* xxvi. p. 1527 (1862).

Sarcinodes restitutaria, Butl. *Ill. Typ. Lep. Het.* vi. p. 59, pl. cxv. figs. 1, 2 (1886); Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 315 (1895).

One specimen from Omei-shan: July.

This example is violet-grey, suffused with olive-brown before the transverse line and on outer margins.

Distribution. Sikhim; Khásis; Sumatra (*Hampson*); Western China.

Sarcinodes æquilinearia.

Mergana æquilinearia, Walk. *Cat. Lep. Het.* xxi. p. 292 (1860).

Sarcinodes æquilinearia, Butl. *Ill. Typ. Lep. Het.* vi. p. 60, pl. cxv. figs. 5, 6 (1886); Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 316 (1895).

One male specimen from Omei-shan, taken in July.

Distribution. Sikhim; Khásis (*Hampson*); Western China.

Genus *PALÆOMYSTIS*.

(Warren, *Novit. Zool.* i. p. 379 (1894).)

Palæomystis falcataria.

Urapteryx (?) *falcataria*, Moore, *Proc. Zool. Soc. Lond.* 1867, p. 613.

Metrocampa unio, Oberth. *Etud. d'Entom.* xi. p. 32, pl. vi. fig. 43 (1886); Alph. Rom. sur Lép. vi. p. 58 (1892).

Palæomystis falcataria, Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 318 (1895).

My collectors obtained this species at Ta-chien-lu, Wa-shan, Chia-kou-ho, and Pu-tsu-fong in June and July.

Alphéraky records a specimen from Tchagan, in the Province of Kan-Sou, taken in July.

Distribution. Sikhim (*Hampson*); Western China.

Palæomystis mabillaria.

Erosia (?) *mabillaria*, Pouj. Ann. Soc. Ent. Fr. 1895, p. 311, pl. vi. fig. 12.

Poujade records a male specimen from Moupin. I have received an example of the same sex from Huang-mu-chang, taken in July, and another from Wa-shan, taken in June.

Hab. Western China.

This species is smaller than *P. falcataria*, Moore, and the angle of the secondaries is more produced.

Subfamily *ORTHOSTIXINÆ*.Genus *IOTAPHORA*.

(Warr. Novit. Zool. i. p. 322 (1894).)

Iotaphora iridicolor.

Panathia iridicolor, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 227 (1880); Ill. Typ. Lep. Het. vi. p. 49, pl. cxiii. fig. 3 (1886).

Metrocampa admirabilis, Oberth. Bull. Soc. Ent. Fr. 1883, p. lxxxiv; Etud. d'Entom. x. p. 29, pl. i. fig. 8 (1884).

Metrocampa (?) *admirabilis*, Græser, Berl. ent. Zeit. 1888, p. 392.

Iotaphora iridicolor, Hampson, Fauna Brit. Ind., Moths, iii. p. 322 (1895).

My collectors obtained a specimen in each of the following localities:—Chang-yang, Ichang, Moupin, Wa-shan, Omei-shan: June and July.

Distribution. Sikhim; Khâsis (*Hampson*); Amur; Central and Western China.

All my Chinese examples are larger than any Himalayan specimen that I have seen, and, with the exception of the Wa-shan specimen, they all have a greenish tinge. Græser states that the larva of this species feeds on *Juglans mandshurica*, and that it is like a curled leaf in appearance.

Genus *EUMELEA*.

(Duncan; Hampson, Fauna Brit. Ind., Moths, iii. p. 320 (1895).)

Eumelia rosalia.

Phalæna (*Geometra*) *rosalia*, Cram. Pap. Exot. iv. pl. cclxxviii. fig. F (1782).

Eumelea rosalia, Hampson, Fauna Brit. Ind., Moths, iii. p. 320 (1895).

Hampson gives China for this species, probably in the south, as my collectors did not meet with it in any part of Central or Western China that they visited.

Distribution. China; Formosa; throughout India, Ceylon, and Burma; the Malayan and Austro-Malayan subregions.

Genus NAXA.

(Walk. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 324 (1895).)

Naxa margaritaria, sp. n. *Pl. VII, fig. 8.*

Frenulum absent; antennæ bipectinated; hind tibiæ not dilated, but with terminal pair of spurs. Subdiaphanous with strong pearly reflections. Traversed by series of black spots as in *N. seriaria*. The subcostal spot of first series is double, and there is an additional one on the inner margin, increasing the number in this series to four; there is also a spot on inner margin between the first and second series. The secondaries also have an additional spot about the middle of the abdominal margin. All the markings are smaller and fainter. Body and upperside of legs black.

Expanse 44–46 millim.

Two male specimens from Chang-yang, July.

Hab. Central China.

Naxa seriaria.

Zerene seriaria, Motsch. Bull. Soc. Nat. Mosc. 1866, pt. 1, p. 196.

Orthostixis letata, Brem. Lep. Ost-Sib. p. 84 (1864).

Zerene taicoumaria, de l'Orza, Cat. Léop. Jap. p. 48.

Naxa seriaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 325 (1895).

Psilonaxa taicoumaria, Warren, Proc. Zool. Soc. Lond. 1893, p. 393.

There were some specimens in Pryer's collection under the name *Naxa textilis*. In his 'Catalogue of the Lepidoptera of Japan,' Pryer says: "Yokohama. Larva hairy, gregarious. Living in a web; feeds on the privet."

Occurs also in the Island of Kiushiu and at Omei-shan. The specimens from the last-named locality range in expanse from 36–53 millim.

Distribution. Bhután; Nágas (*Hampson*); Amur; Japan; Kiushiu; Western China.

Naxa angustaria, sp. n.

Similar in appearance to *N. seriaria*, Motsch., but the frenulum is present, and the antennæ are shortly bipectinated in both sexes; hind tibiæ not dilated and with terminal spurs. The discal spots of secondaries are smaller; the submarginal series of black spots on each wing is rather nearer the marginal series, and the spots themselves are smaller.

Expanse 40–52 millim.

Several specimens from Ichang and Chang-yang: June and July.

Hab. Central China.

Naxa contraria, sp. n.

Antennæ bipectinated in both sexes. Frenulum present; hind tibiæ much dilated, with short terminal spurs. Arrangement of black spots somewhat similar to that of *N. seriaria*, but there are two additional spots on primaries, one on middle of inner margin, and one between it and the base of the wing; there is also a black spot on the middle of the abdominal margin of secondaries. The marginal spots are not always well formed.

Expanse 50–60 millim.

Eight specimens, from Chang-yang and Ichang, July.

This species differs from *N. margaritaria* in its larger size, stronger pectinations of antennæ, absence of pearly reflection, and presence of frenulum.

Hab. Central China.

Naxa montanaria, sp. n.

Outer margin of secondaries rather straight from middle to anal angle, which is more produced, as also is the apex of primaries. Maculation similar to that of *N. contraria*, but finer and less distinct, and the wings are more transparent.

Expanse, ♂ 58, ♀ 68 millim.

Six male specimens and four females from Omei-shan, one male from Wa-shan, all taken in June.

Hab. Western China.

Naxa obliquaria, sp. n.

Antennæ finely serrated in both sexes. Frenulum present; hind tibiæ much dilated. Apex of primaries rather acute. Greyish white. All the wings have a blackish discal spot and an oblique blackish line outwardly bordered with white and angled towards costa of primaries. Fringes silky white, preceded by a series of black spots. Under surface silky white; discal spots black and conspicuous; the apices of primaries black, and there is a spot of the same colour at outer angle of secondaries; fringes preceded by black spots as above.

Expanse 42–46 millim.

A male specimen from Chow-pin-sa, June, and one example of each sex from Omei-shan, July.

Hab. Western China.

Genus EMMECOSMIA.

(Warren, Novit. Zool. iii. p. 118 (1896).)

Emmecosmia bilinearia, sp. n.

Pale whity brown or ochreous brown. Primaries have two

parallel dark ochreous-brown transverse lines, the first commencing in a blackish spot on costa and passing very close to the blackish discal spot; excision below apex is marked with dusky; costal and outer marginal areas suffused with greyish brown. Secondaries have a dusky transverse line beyond the middle. Fringes of the ground-colour, tinged with darker on primaries. Under surface ochreous, except on inner half of primaries; all the wings have a dusky transverse line beyond the middle.

Expanse 35-42 millim.

Eight female specimens were taken by a native collector to the north of Ta-chien-lu.

Hab. Western China.

Subfamily *LARENTIINÆ*.

Genus *LEPTOSTEGNA*.

(Christ. Bull. Soc. Nat. Mosc. Iv. 2, p. 86 (1880).)

Leptostegna tenerata.

Leptostegna tenerata, Christ. Bull. Soc. Nat. Mosc. Iv. (2) p. 88 (1881); Hampson, Fauna Brit. Ind., Moths, iii. p. 333 (1895).

Several specimens in Pryer's collection from Oiwake, Yesso, and Nikko.

I captured examples at Gensan in June, and have received it from Hakodate, also from Chang-yang, Wa-shan, Ta-chien-lu, Pu-tsu-fong, and Chia-kou-ho.

Distribution. Amur; Japan; Yesso; Corea; Central and Western China; Sikhim.

Genus *NAXIDIA*.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 334 (1895).)

Naxidia punctata.

Argidava punctata, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 128 (1880); Ill. Typ. Lep. Het. vi. p. 67, pl. cxvii. fig. 1.

Naxidia punctata, Hampson, Fauna Brit. Ind., Moths, iii. p. 334 (1895).

Appears to have been common at Wa-shan, and was also obtained at several of the other localities in Western China visited by my collectors.

Distribution. Sikhim; Nágas (*Hampson*); Western China.

Naxidia irrorata.

Argidava irrorata, Moore, Lep. Atk. p. 251 (1887).

Naxidia irrorata, Hampson, Fauna Brit. Ind., Moths, iii. p. 334 (1895).

One female specimen from Ta-chien-lu, taken in June, I have referred to this species, but, as I have not seen the type,

I am not quite certain that the identification is correct. However, the specimen agrees with the description of *N. irrorata*.

Distribution. Sikhim; Nágas (*Hampson*); Western China.

Naxidia maculata.

Argidava maculata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 373 (1879).

There was a nice series in Pryer's collection, some of the specimens labelled "Oiwake." Referring to this species in his 'Catalogue of the Lepidoptera of Japan,' Pryer says, "It mimics *Æmene fasciata*, and is found in the same localities at rest on stones." He gives Ohoyama and Nikko as localities.

Hab. Japan.

GENUS LYGRANOA.

(Butler, Ann. & Mag. Nat. Hist. (5) i. p. 402 (1878).)

Lygranoa fusca.

Lygranoa fusca, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 447 (1878);
Ill. Typ. Lep. Het. iii. p. 54, pl. liv. fig. 7 (1879).

A series from Ohoyama and Nikko in Pryer's collection. I met with the species at Gensan in June, and I have received it from Ningpo and from localities in Central and Western China. It occurs in June, July, and August. Græser records a male specimen from Wladivostock.

Distribution. Amur; Japan; Corea; Eastern, Central, and Western China.

Lygranoa sinuosaria, sp. n.

Primaries brownish, darker on basal and outer marginal areas; subbasal line blackish, oblique, angled above submedian nervure; about the middle of costa there is a black triangular spot, its apex almost touching the black, elongate discal spot; beyond the middle of costa is another black spot somewhat quadrate in form, from the lower outer corner of this spot a black sinuous line forms an acute angle and continues to inner margin; submarginal line whitish, wavy, preceded on costa by a diffuse blackish spot. Secondaries whity brown, suffused with fuscous, and with indications of a dusky central line. Fringes of primaries brownish, marked with darker, and of secondaries pale brown. Under surface pale brown, whitish on inner marginal area of primaries; all the wings have a fuscous transverse line beyond the middle marked with blackish on the venation, and the primaries have an elongate discal spot.

Expanse 38 millim.

One male specimen from Ta-chien-lu, July.

Hab. Western China.

This species is allied to "*Dysethia*" *bicommata*, Warren.

Lygranoa grisearia, sp. n. *Pl. VII, fig. 15.*

Primaries grey, with two velvety-black spots on the costa; below the first there is an ill-defined transverse line, marked with black on the median nervure and again on inner margin; the lower end of the second spot is produced outwards, and from the extremity of this projection there is a series of black points on the venation; submarginal line pale, wavy, intersecting a brownish shade on the outer marginal area; there is also a brownish transverse shade on the median area; discal dot black. Secondaries greyish, with a punctiform central line. Fringes: primaries greyish brown; secondaries greyish, marked with darker at the ends of the nervules; preceded on all the wings by a dusky crenulate line. Under surface ochreous brown, powdered and suffused with darker brown; all the wings have an elongate blackish discal spot and indication of a transverse line beyond; fringes brownish.

Expanse 38 millim.

One female specimen from Pu-tsu-fong and one from Kia-ting-fu: June.

Hab. Western China.

Lygranoa pallescens.

Dysethia pallescens, Warren, Novit. Zool. iii. p. 118 (1896).

Four female specimens in Pryer's collection. Three of these are from Oiwake, but the fourth, which is suffused with brownish on the margins, is not localized.

Hab. Japan.

Genus CRYPTOLOBA.

(Warren; Hampson, Fauna Brit. Ind., Moths, iii. p. 336 (1895).)

Cryptoloba cinerea.

Lygranoa cinerea, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 228 (1880); Ill. Typ. Lep. Het. vi. p. 86, pl. cxx. fig. 4 (1886).

Cryptoloba cinerea, Hampson, Fauna Brit. Ind., Moths, iii. p. 337 (1895).

Five specimens (4 ♂, 1 ♀) from Chang-yang, Central China: July.

Distribution. Central China; Dharmśála; Sikhim.

Cryptoloba rivularia, sp. n.

Primaries black, traversed by four white lines; the first is not well defined, the second is serrated and sharply dentate above inner margin, the third is serrated and angled below costa, the fourth is macular below costa. Secondaries white, clouded with blackish at the base and on outer margin; discal spot is black, and there are indications of a blackish central band. Fringes of primaries black and white; of secondaries white, preceded by a black line. Under surface white; primaries have the costa streaked with black from base to a short angulated band; the outer margin is broadly black, intersected by a white macular line; secondaries have a black discal spot, interrupted central band, and outer marginal border, the latter intersected by a white macular line.

Expanse 24–26 millim.

Five male specimens, from Omei-shan, Ni-tou, Che-tou, Pu-tsu-fong: June and July.

Hab. Western China.

Allied to *C. frigida*, Butl., but the lobe at base of secondaries is much smaller.

Cryptoloba frigida.

Coremia frigida, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 450 (1878); Ill. Typ. Lep. Het. iii. p. 56, pl. lv. fig. 3 (1879).

A long series from Yokohama in Pryer's collection.

Hab. Japan.

Genus LOBOGONIA.

(Warren, Proc. Zool. Soc. Lond. 1893, p. 345.)

Lobogonia parallelaria, sp. n.

Pale brown, irrorated with darker, especially on the secondaries. Primaries traversed by two oblique, parallel, dark brown lines, each of which expands on the costa; there is a dark brown spot on costa before apex, and one below between veins 5 and 6; fringes almost black, except at the angle. Secondaries have a discal dot and sharply-curved transverse line, both dusky; fringes ochreous, preceded by a dark brown line. Under surface: of primaries smoky grey, costa and on outer margin ochreous; of secondaries ochreous, irrorated with brownish; markings on all wings similar to above, but the first line of primaries is less, and that of secondaries more, distinct.

Expanse 32 millim.

One specimen from Ichang, June.

Hab. Central China.

Lobogonia ambusta.

Lobogonia ambusta, Warren, Proc. Zool. Soc. Lond. 1893, p. 346, pl. xxxi. fig. 21.

Several specimens received from Pu-tsu-fong and Omei-shan, where they were taken in July.

Distribution. Khásis (*Hampson*); Western China.

Lobogonia conspicuaria, sp. n.

Differs from *L. ambusta*, Warren, in having the first and second black spots on costa of primaries larger and triangular in shape, the apex of the second extends to the enlarged spot beyond the middle of the outer transverse line; the lines originating in these spots are not clearly defined. On the secondaries the central line is broader. Fringes blackish above and below the angle of each wing.

A nice series, including both sexes, was taken at Chang-yang in July.

Hab. Central China.

Nearly allied to *L. pseudomacariata*, Poujade.

Lobogonia pseudomacariata.

Ellopiia pseudomacariata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 308, pl. vi. fig. 4.

Poujade records one female specimen from Moupin; my collectors did not meet with the species.

Hab. Western China.

Lobogonia fasciaria, sp. n.

Primaries olive-yellow, sparingly freckled with olive-brown, and traversed by two bands of the same colour; the first band is slightly contracted below the middle, and the second both above and below the middle; there are two olive-brown spots on costa near apex, two others above angle on outer margin, and a linear one towards inner angle. Secondaries much paler, freckled with fuscous, and traversed by a fuscous central line; discal dot blackish. Fringes blackish, except at apex and angle of primaries. Under surface paler than above: primaries suffused with dusky on basal area; all the wings have a dusky central line.

Expanse 27 millim.

Two female specimens from Chang-yang: June, July.

Hab. Central China.

Genus CARIGE.

(Walk. Cat. Lep. Het. xxvi. p. 1631 (1862).)

Carige cruciplaga.*Macaria cruciplaga*, Walk. Cat. Lep. Het. xxiii. p. 937 (1861).*Carige duplicaria*, Walk. *op. cit.* xxvi. p. 1632 (1862).*Macaria nigronotaria*, Brem. Lep. Ost-Sib. p. 80, pl. vii. fig. 6 (1864).*Macaria indictinaria*, Brem. *l. c.* p. 81, pl. vii. fig. 8.

This variable species seems to be generally distributed throughout Western China, and is common in Japan and Corea.

It also occurs at Chang-yang, Central China, but as the form from this locality is rather different to either of those previously named, I describe it as

Var. *extremaria*.

Apex of primaries more produced and the outer margin of secondaries more deeply indented. Larger in expanse. More thickly powdered with fuscous, and the markings are much larger and blacker.

Expanse, ♂ 38, ♀ 42 millim.

Two examples of each sex.

Distribution. Siberia; Sikhim; Khásis; Penang (*Hampson*); Japan; Central and Western China.

Meyrick (*Trans. Ent. Soc.* 1892, p. 91) places *duplicaria*, Walk. (*nigronotaria*, Brem.) in *Calothyranis*, Hübn.

Carige flavidaria, sp. n.

Somewhat similar to *C. cruciplaga*, but the median nervure and its branches and the nervules above are broadly ochreous; the double black lines are interrupted, except at costa and towards inner margin, and the yellow bands between are broader and deeper in colour; all the wings have a pale sub-marginal line, but serrated; the inner double line of primaries is nearer to the black discal dot. The same differences are noticeable on the under surface.

Expanse 40 millim.

One male specimen from Omei-shan, July.

Hab. Western China.

Genus ANAITIS.

(Dup.; Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 341 (1895).)*Anaitis plagiata*.*Phalena-Geometra plagiata*, Linn. *Syst. Nat.* i. p. 869.

Anaitis plagiata, Dup. Lép. v. p. 532, pl. cxcv. figs. 2, 3; Hampson, Fauna Brit. Ind., Moths, iii. p. 342.

Eucestia plagiata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 69.

Two female specimens of the first brood, and one male and two females of the second brood, from Oiwake, Nikko, and Ohoyama, in Pryer's collection.

The examples of first brood in Japan are paler, and those of second brood darker than European specimens.

Distribution. Europe; Asia Minor; Japan; Afghanistan; N.W. Himalayas (*Hampson*).

Anaitis pudicata.

Anaitis pudicata, Guen. Phal. ii. p. 497 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 341 (1895).

Appears to be common at Chia-ting-fu, Moupin, Wanshan, Pu-tsu-fong, Ichang, and Chang-yang: June and July.

In the Chinese specimens of this species the postmedial line is not excurved beyond end of cell, but is nearly straight from costa to inner margin.

Distribution. Afghanistan; N.W. Himalayas; Sikhim (*Hampson*); Western and Central China.

Anaitis brunnearia, sp. n.

Primaries greyish brown, traversed by two pale lines; the first is nearly straight from subcostal to inner margin, and is bordered outwardly with brownish; the second is oblique from costa to inner margin, slightly curved about middle, and bordered inwardly with brownish. Secondaries whitish, slightly tinged with crimson. Under surface greyish, suffused with crimson on costal and apical areas of primaries and on discal area of secondaries.

Expanse 40 millim.

One male specimen from Pu-tsu-fong, June.

Hab. Western China.

Closely allied to *A. pudicata*, Guen., but the primaries are not suffused with crimson on costal and outer series above, and on the under surface this colour extends further along outer margin.

Anaitis fulgurata.

Anaitis fulgurata, Guen. Phal. ii. p. 498 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 342 (1895).

Orsonoba (?) *medmaria*, Walk. Cat. Lep. Het. xxvi. p. 1521 (1862).

Docirava medmaria, Butl. Ill. Typ. Lep. Het. vi. p. 87, pl. cxx. fig. 6 (1886).

One male specimen from Chia-ting-fu and one from Wanshan: June and July.

Distribution. N.W. Himalayas; Sikhim (*Hampson*); Western China.

Genus *SIONA*.

(Dup. Lép. iv. p. 102.)

Siona naseraria.

Siona naseraria, Oberth. Etud. d'Entom. xviii. p. 34, pl. v. fig. 72 (1893).

A nice series, composed of specimens taken at Ta-chien-lu and How-kow in June and July.

Hab. Western China and Thibet.

I have left this species in *Siona*, as placed by Oberthür, but a new genus will probably have to be made for it.

Genus *EUBOLIA*.

(Dup.; *Hampson*, Fauna Brit. Ind., Moths, iii. p. 343 (1895).)

Eubolia duplicata.

Ortholitha duplicata, Warren, Proc. Zool. Soc. Lond. 1893, p. 385.

Eubolia duplicata, *Hampson*, Fauna Brit. Ind., Moths, iii. p. 343 (1895).

Several specimens from How-kow, Thibet, and a few examples from Ta-chien-lu, Pu-tsu-fong, and Kia-ting-fu: June and July.

The oblique white medial band varies in width; in two specimens it is almost entirely absent, and the black markings are united forming a large triangular blotch.

Distribution. Chumbi (*Hampson*); Thibet; Western China.

Eubolia similaria, sp. n.

Allied to *E. peribolata*, Hübn., from Europe, but larger; the outer edge of the central band of primaries is bilobed, and between the inner edge of the band and the base of the wing there are several transverse lines. Secondaries whitish, tinged with fuscous along the basal portion of the abdominal margin; there are indications of a discal spot and central line. Under surface similar to that of *E. peribolata*.

Expanse 38 millim.

Several specimens of each sex from Ta-chien-lu, Wa-shan, and Ni-tou: May and June.

Hab. Western China.

Peribolata, Hübn., is included in *Xanthorhoe*, Hübn., by Meyrick (Trans. Ent. Soc. 1892, p. 77).

Genus SCOTOSIA.

(Steph.; Hampson, Fauna Brit. Ind., Moths, iii. p. 344 (1895).)

Scotosia vashti.

Collix vashti, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 445 (1878); Ill.

Typ. Lep. Het. iii. p. 52, pl. liv. fig. 3 (1879).

Eucosmia Christophi, Hedem. Horæ Soc. Ent. Ross. xvi. p. 265 (249 bis), pl. xiii. fig. 4 (1881).

Three specimens from Yesso in Pryer's collection.

I obtained several examples at Hakodate in August, and my collectors found the species at several localities in Western China in July.

The Chinese specimens are rather larger than the Japanese examples, and they have a white edging to the costal portion of the outer line of primaries.

Distribution. Amur; Japan; Yesso; Western China.

Christophi, Hedem., is included in *Calocalpe*, Hübn., by Meyrick (Trans. Ent. Soc. 1892, p. 70).

Scotosia multilinearis, sp. n.

Male.—Primaries dark grey, traversed by numerous fuliginous wavy lines; the central area is rather darker and its outer edge is sometimes marked by a white macular line; outer marginal fourth fuliginous, traversed by a macular white line, but this is not distinct throughout. Secondaries fuliginous, with indications of a pale submarginal line. Under surface fuliginous, with a black discal dot on each wing.

Female.—Similar to the male, but the central area is not darker; sometimes there is a pale patch about the middle of the costa enclosing a dark cloud.

Expanse, ♂ 46, ♀ 50 millim.

Two male specimens and ten females from Ta-chien-lu and Che-tou: June and July.

Hab. Western China.

Scotosia bipunctularia, sp. n.

Whity brown, traversed by numerous dark grey-brown wavy lines. On the costa of primaries there are two quadrate blackish spots, and the transverse lines originating from the outer one are slightly more conspicuous than the others. Fringes of the ground-colour chequered with darker. Under surface pale grey, with the transverse lines of upper surface faintly reproduced.

Expanse, ♂ 32, ♀ 34 millim.

Several examples of both sexes from Omei-shan, Ta-chien-lu, Ni-tou, and Chang-yang: July and August.

Hab. Central and Western China.

Closely allied to *S. vetulata*, Schiff., from Europe. The male has a trifold anal tuft.

Scotosia corrugata.

Scotosia corrugata, Butl. Ann. & Mag. Nat. Hist. (5) xiii. p. 275 (1884)

There was a nice series from Yesso in Pryer's collection.

My native collector obtained a specimen at Hakodate and one at Ningpo in June; the latter agrees in colour with *S. vetulata* from Europe.

Distribution. Japan; Yesso; Eastern China.

Scotosia rhamnata.

Geometra rhamnata, Schiff. Wien. Verz. 109; Hübn. Geom. pl. lii. fig. 271.

Philereme rhamnata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 70.

Scotosia rhamnata, var. *japanaria*, Leech, Entom., Suppl. p. 53 (May 1891).

There were two male specimens from Oiwake in Pryer's collection.

The Japanese form of this species differs from the European type in being larger and having a pale grey-brown coloration; the transverse lines are identical in number and form, but the space between the two central angulated lines is not darker. On the under surface the difference of colour is not so pronounced and the markings are typical.

Expanse 40 millim.

Distribution. Europe; Armenia; Japan.

Scotosia dubitata.

Phal. Geometra dubitata, Linn. Syst. Nat. i. 2, p. 866; Clerck, Icon. pl. vi. fig. 2.

Scotosia dubitata, Guen. Phal. ii. p. 445.

Hydriomena dubitata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

Some specimens from Yesso in Pryer's collection.

I have received several examples from Chang-yang and the province of Kwei-chow: June.

Distribution. Europe; Japan; Central and Western China.

Both Japanese and Chinese examples of this species are paler and less distinctly marked, agreeing more nearly with var. *cinereata*, Steph., than with the type.

S. (Thriphosa) Oberthüri, Hedem., from Amurland (Horæ Soc. Ent. Ross. xvi. p. 248 bis), is probably a form of this species.

Scotosia sericata.

Scotosia sericata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 444 (1879).

Five specimens from Yokohama in Pryer's collection.

I received six specimens from the province of Kwei-chow and one from Ichang : June.

The Chinese specimens are rather paler in colour than those from Japan.

Distribution. Japan ; Central and Western China.

Scotosia rubrodotata.

Scotosia rubrodotata, Walk. Cat. Lep. Het. xxv. p. 1353 (1862).

Several specimens from the province of Kwei-chow, June and July.

Distribution. Northern India ; Western China.

Scotosia expansa.

Scotosia expansa, Moore, Lep. Atk. p. 274 (1887).

Scotosia rubrodotata, Hampson, Fauna Brit. Ind., Moths, iii. p. 345 (1895).

Three specimens from Pu-tsu-fong, June and July.

Distribution. Sikhim ; Western China.

Scotosia fasciaria, sp. n.

Male.—Pale greyish brown. Primaries have a blackish-grey basal patch and central fascia ; the median portion of the costal half of the fascia is of the ground-colour and encloses the small blackish discal spot, its internal edge is slightly indented below the costa and has a small inward projection towards inner margin, its external edge is dentate below costa, then bilobed about the middle and again towards inner margin ; submarginal line pale, edged inwardly with dusky but not not clearly defined. Secondaries have the basal area dusky, limited by a rather darker wavy line, and there are slight indications of some dusky transverse wavy lines beyond. Fringes of the ground-colour marked with darker. Under surface pale greyish brown ; basal area of each wing dusky ; discal spot black ; there is a patch of long, silky, brownish-grey hairs on the middle of submedian nervure.

Expanse 44 millim.

One male specimen from Che-tou, July.

Hab. Western China.

Scotosia certata.

Geometra cervinata, Hübn. Geom. pl. li. fig. 266.

Plerocymia certata, Hübn. Verz. Schmett. p. 332.

Scotosia certata, Guen. Phal. ii. p. 448.

Calocalpe certata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 70.

Eucosmia varia, Hedem. Horæ Soc. Ent. Ross. xvi. p. 55, pl. x. fig. 7 (1879).

Eucosmia varia, var. *hedemannaria*, Oberth. Etud. d'Entom. v. p. 55, pl. iv. fig. 10 (1880).

Eucosmia exultata, Christ. Stett. ent. Zeit. liv. p. 35 (1893).

Three specimens, taken at Hakodate by my native collector in July, are referable to *E. varia*, Hedem., which I consider to be simply a well-marked form of *Scotosia certata*. I have very similar examples in my series of this species from Europe.

I received one male specimen from Ichang. This has the central fascia of primaries well defined, the inner edge rather deeply indented towards costa, and the outer edge more than usually dentate. There is a specimen very like this in the series of *S. certata* from Japan in the National Collection.

Distribution. Europe; Amur; Askold; Japan; Yesso; Central China.

† *Scotosia grisearia*, sp. n.

Whitish grey. Primaries have a dark grey basal patch, central fascia, and outer marginal border; the fascia has the median area of the ground-colour, and the marginal border is diffuse and intersected by a whitish wavy line, which develops into a spot above inner angle and sometimes towards costa. Secondaries are suffused with dark grey and traversed by faint wavy lines of the same colour; submarginal line whitish, wavy. Fringes grey, marked with paler, and preceded by a blackish line. Under surface whitish grey; basal two thirds of primaries suffused with fuliginous grey, the outer edge somewhat acutely angulated below costa; discal spot black, elongate, preceded by a blackish rather wavy line; apical area fuliginous grey: secondaries have a black discal spot and a dusky, wavy, central line; there is a patch of long silky dark grey hairs from middle of submedian nervure in the male.

Expanse, ♂ 48, ♀ 50 millim.

Several specimens from Che-tou, Moupin, Ta-chien-lu, and Omei-shan: July and August.

Hab. Western China.

In some of the examples the ground-colour is tinged with ochreous.

Scotosia sideritaria.

Scotosia sideritaria, Oberth. Etud. d'Entom. x. p. 34, pl. 1. fig. 13 (1884).

? *Eucosmia alternata*, Staud. Iris, viii. p. 332 (Jan. 1896).

Eucosmia alternata, var. *fasciata*, Staud. l. c.

I have a large number of specimens from Ta-chien-lu, Pu-tsu-fong, Wa-shan, Omei-shan, and Ni-tou: June and July.

In one specimen from Ta-chien-lu the ground-colour is tinged with fulvous; this is similar to a form of *S. dubiosata* in the National collection.

Distribution. Western China; North-east Thibet.

This species very strongly resembles *S. dubiosata*, but the male has a fringe of long hair on vein 1 of hind wing below.

Scotosia undulata.

Phal.-Geometra undulata, Linn. Syst. Nat. x. 524; Clerck, Icon. pl. vi. fig. 3.

Geometra undulata, Hübn. Geom. fig. 262.

Calocalpe undulata, Hübn. Verz. Schmett. p. 330; Meyrick, Trans.

Ent. Soc. Lond. 1892, p. 70.

Scotosia undulata, Guen. Phal. ii. p. 449.

Some fine specimens from Oiwake in Pryer's collection.

Distribution. Europe; Altai; Amur; Japan.

Scotosia marmoraria, sp. n.

Primaries fuliginous grey; basal area traversed by two indistinct wavy whitish lines; beyond the black discal spot there is an irregular white patch connected with a macular white band from the costa, outer marginal area limited by a white wavy band, which is traversed by two sinuous dark lines; submarginal line represented by white dots expanding into small blotches about middle and before outer angle. Secondaries white, clouded with grey on the abdominal area; wavy central line and two patches on outer marginal area fuliginous grey, the latter connected by indistinct sinuous lines of the same colour. Fringes dark grey marked with white. Under surface: primaries fuliginous, with white central patch and outer band as above; secondaries white, with an interrupted grey central line and markings as above. The underside of the body and legs ochreous, and the base of all the wings and also abdominal area of secondaries are tinged with the same colour.

Expanse 46-48 millim.

Four male specimens and two females from Omei-shan,

Pu-tsu-fong, Wa-shan, Ni-tou, and Chang-yang : June and July.

Hab. Central and Western China.

Scotosia latifasciaria.

Melanthia latifasciaria, Leech, Entom., Suppl. p. 56 (May 1891).

There were three specimens from Oiwake in Pryer's collection. I have also received the species from Mr. Manley, of Yokohama.

Hab. Japan.

Scotosia interruptaria, sp. n.

White, with black markings. Primaries have the basal area black and divided into two portions by a transverse line of the ground-colour, the outer portion is interrupted; central fascia indicated by the discal spot, connected with a cloud on the costa, a spot on first median fork, and two short bars on inner margin; submarginal band represented by a spot on costa and a smaller one on the nervules; outer marginal band divided by a transverse white line, the inner portion interrupted. Secondaries have a discal spot, a short interrupted band from middle of abdominal margin, a submarginal band represented by dots between costa and second median nervule, and a series of large spots on the outer margin. Fringes black on primaries; black and white on secondaries. Under surface as above. Abdomen is marked with yellow.

Expanse 42 millim.

One male specimen from Ni-tou, and one from Pu-tsu-fong : July.

Hab. Western China.

This species very strongly resembles the figure in Schrenck's "Amurlande" of *Zerene flavipedaria*, Mén. (Lep. pl. v. fig. 11.)

Scotosia seseraria.

Scotosia seseraria, Oberth. Etud. d'Entom. xviii. p. 37, pl. v. fig. 71 (1893).

This species was discovered by R. P. Dejean at Tâ-Tsien-Loû. My collectors did not meet with it.

Hab. Western China.

Scotosia largetauaria.

Eucosmia largetauaria, Oberth. Etud. d'Entom. vi. p. 19, pl. ix. fig. 8 (1881).

Oberthür records this species from Kouy-Tchéou (Kwei

chow). I have received it from the same province, and also from Pu-tsu-fong and Wa-shan : June and July.

Hab. Western China.

Genus PHIBALAPTERYX.

(Stephens; Hampson, Fauna Brit. Ind., Moths, iii. p. 346 (1895).)

Phibalapteryx tersata.

Geometra tersata, Hübn. Geom. fig. 268.

Phibalapteryx tersata, Steph. Ill. Brit. Ent., Haust. iii. p. 256; Guen.

Phal. ii. p. 432.

Eucymatoge tersata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 68.

Phibalapteryx tetricata, Guen. *l. c.*

Several specimens from Oiwake in Pryer's collection.

The Japanese examples of *P. tersata* more nearly approach var. *tetricata*, Guen., than the type form, but they are not quite identical with either.

Var. *chinensis*, nov.

Smaller than typical specimens and rather redder in colour; less striated with white, and the submarginal white line is much obscured; there is a dusky shade before the second line of primaries and also one before the submarginal line, the latter is connected with an oblique streak from apex.

Expanse 30 millim.

One male specimen from Chang-yang, August.

Distribution. Europe; Altai; Amur; Japan; Central China.

Phibalapteryx vitalbata.

Geometra vitalbata, Hübn. Geom. fig. 269.

Phibalapteryx vitalbata, Steph. Ill. Brit. Ent., Haust. iii. p. 256; Guen.

Phal. ii. p. 437.

Eucymatoge vitalbata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 68.

Specimens from Oiwake in Pryer's collection.

I received one example from Ta-chien-lu, taken in May or June.

Distribution. Europe; Amur; Japan; Western China.

Phibalapteryx umbraria.

Scotosia umbraria, Leech, Entom., Suppl. p. 53 (May 1891).

Superficially resembles *Scotosia rhamnata*, but it is larger in size and has an oblique cloud-like central fascia most conspicuous in the male; in the female the costal portion of the outer edge of the fascia is more conspicuous.

I took one male specimen at Nagahama in July, and there were three females from Gifu in Pryer's collection.

Hab. Japan.

Phibalapteryx punctimarginaria.

Scotosia punctimarginaria, Leech, Entom., Suppl. p. 53 (May 1891).

There were a few specimens from Yesso in Pryer's collection. Mr. Smith captured a female example at Hakone in August; and I have received a female specimen from Chang-yang, taken in July.

Hab. Japan; Yesso; Central China.

Phibalapteryx macularia, sp. n.

Pale brown. Primaries blotched with dark brown on costal area; subbasal line double, enclosing the second costal blotch; beyond the fourth costal blotch there is a double dark brown line, elbowed below costa, waved towards inner margin, and followed by a brown spot between second and third median nervules; submarginal line pale, intersecting the interrupted dark brown border of outer margin; discal spot black. Secondaries have some abbreviated brown lines on basal area; a double central line, followed by a waved line, and an interrupted border on outer margin, the latter intersected by pale submarginal line as on primaries. Fringes pale brown, marked with darker and preceded by a blackish line. Under surface pale brown suffused with fuscous; all the wings have a blackish discal dot and interrupted central line; the outer marginal area of primaries is dusky, and the secondaries have a dusky submarginal band.

Expanse 38 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Phibalapteryx sparsata.

Geometra sparsata, Hübn. Geom. pl. lxxiv. fig. 398.

Collix (?) *sparsata*, Guen. Phal. ii. p. 358.

Eucymatoge sparsata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 68.

There was a specimen from Oiwake in Pryer's collection.

Distribution. Europe; Japan.

Phibalapteryx flavovenata, sp. n.

Similar to *P. sparsata*, Hübn., but less irrorated with black; the pale transverse band is not so clearly defined and is broadly bordered inwardly with blackish; there is a black

<-shaped mark just beyond the cell on each wing; fringes darker. Under surface of all the wings whitish; venation broadly ochreous and the fringes black; the discal dot and transverse bands as in *P. sparsata*.

Expanse 25 millim.

One female specimen (minus head) from Ta-chien-lu, taken in May or June.

Hab. Western China.

Genus EUSTROMA.

(Hübner, Verz. Schmett. p. 335; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.)

All the species here included in *Eustroma* have a pencil of hair near inner margin on under surface of primaries; in some of them, however, the areole is simple, and these would perhaps be more correctly placed in *Plemyria*. The species might be arranged in sections as follows:—

1. Areole double.

a. Discocellulars of secondaries oblique; vein 5 from the middle.

<i>fractifasciaria.</i>	<i>reticulata.</i>
<i>chrysoprasis.</i>	<i>melancholica.</i>
<i>propriaria.</i>	

b. Discocellulars of secondaries angled; vein 5 from below the middle.

<i>pulchraria.</i>	<i>convergenata.</i>
<i>achatinellaria.</i>	<i>ludovicaria.</i>
<i>Ledereri.</i>	<i>exsecuta.</i>

2. Areole simple.

a. Discocellulars oblique; vein 5 from the middle.

<i>delecta.</i>	<i>Haberhauri.</i>
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b. Discocellulars angled; vein 5 from below the middle.

<i>junctilineata.</i>	<i>miegata.</i>
<i>plurilineata.</i>	<i>angularia.</i>

Eustroma chrysoprasis.

Cidaria chrysoprasis, Oberth. Etud. d'Entom. x. p. 34, pl. i. fig. 2 (1884).

Cidaria reticulata, Moore, Proc. Zool. Soc. Lond. 1867, p. 662 (præocc.).

Cidaria fissisignis, Butl. Ill. Typ. Lep. Het. vi. p. 87, pl. cxx. fig. 7 (1886); Hampson, Fauna Brit. Ind., Moths, iii. p. 362 (1895).

Four specimens from Pu-tsu-fong, taken in June or July.

Oberthür's type was from Ta-t sien-lu.

Distribution. Sikhim (*Hampson*); Western China.

Eustroma fractifasciaria, sp. n.

Female.—Primaries pale brown, clouded and suffused with

darker, and marked with chocolate-brown as follows:—a small patch at base, four spots on costa and an irregular-shaped patch extending from cell to inner margin, this last is connected with the fourth costal spot by a curved spot, and together with the second and third costal spots appear to be portions of a central fascia; submarginal line whitish, waved; the margin beyond is tinged with fuscous. Secondaries whitish brown tinged with fuscous; central line dusky, edged with the ground-colour; submarginal line of the ground-colour, waved. Under surface pale whitish brown: basal area of primaries suffused with blackish below the cell and irrorated with brownish above, limited by a pale-edged blackish line; submarginal line as above, but not so distinct: secondaries irrorated with brownish, central transverse shade and two waved lines beyond dusky. All the wings have a black discal spot on both surfaces and a dark line.

Expanse, ♂ 38, ♀ 40 millim.

One male specimen from Pu-tsu-fong, and a female from Ta-chien-lu: June.

I have described the female because it is in better condition than the male, but the markings appear to be almost identical in each.

Hab. Western China.

Allied to *E. chrysoprasis*, Oberth.

Eustroma propria, sp. n.

Male.—Primaries brown; basal patch darker, limited by a wavy ochreous-brown line; central fascia rather violet-brown, contracted above inner margin, the edges of this fascia are blackish, outlined in pale ochreous brown; submarginal line ochreous brown, indistinct, except towards inner margin, where it is developed into a blotch. Secondaries whitish, darker on basal half, which is limited by a dusky transverse line; discal spot oblong, reddish brown. Fringes agree in colour with the wings, but are chequered with blackish. Under surface pale brown, darker on apical area of primaries; basal area of all the wings suffused with blackish.

Expanse 38 millim.

One example of each sex from Pu-tsu-fong, and a male specimen from Ta-chien-lu: July.

Hab. Western China.

The male of this species has a patch of rather long black hairs on the middle of the submedian nervure on the under surface of primaries, and also a woolly tuft about the middle of abdominal margin of secondaries.

In the male from Ta-chien-lu and the female from Pu-tsu-fong the central fascia is only slightly angulated and not interrupted below the middle. Possibly these specimens may represent the more usual form of the species. I have, however, described the Pu-tsu-fong male because it is in much better condition than the others.

Eustroma reticulata.

Geometra reticulata, Hübn. Geom. fig. 308.

Eustroma reticulata, Hübn. Verz. Schmett. p. 335; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

Lygris reticulata, Gräser, Berl. ent. Zeit. 1888, p. 406.

Cidaria inextricata, Walk. Cat. Lep. Het. xxxv. p. 1691.

Cidaria arosa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 451; Ill. Typ. Lep. Het. iii. p. 58, pl. lv. fig. 7.

I obtained specimens at Tsuruga and Gensan in July, and my native collector at Hakodate in the same month. There were specimens from Oiwake and Yesso in Pryer's collection, and my collectors met with the species in most of the localities in Western China, and also at Chang-yang.

Distribution. Europe; Ural; E. Siberia; Amur; Corea; Japan; Yesso; Central and Western China; Sikhim.

In China and Japan this species is generally represented by *arosa*, Butl., which is identical with *inextricata*, Walk., but I have typical specimens from Hakodate, Omei-shan, and Chia-kow-ho.

Eustroma melancholica.

Cidaria melancholica, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 450 (1878); Ill. Typ. Lep. Het. iii. p. 58, pl. lv. fig. 6 (1879).

Five female specimens from Yokohama, Oiwake, Gifu, and Yesso in Pryer's collection. I obtained an example of each sex at Hakodate in August.

The variation in marking is very similar to that which obtains in *C. silaceata*.

Only one specimen has been received by me from China. This is a male, taken at Pu-tsu-fong in July; it has the ground-colour suffused with brown and the markings are darker; the pencil of hair on underside is dark brown; measures 50 millim. in expanse, and in form agrees with the *insulata* form of *Cidaria silaceata*.

I propose the name *brunnearia* for this form.

Distribution. Japan; Yesso; Corea; Western China.

Eustroma delecta.

Cidaria delecta, Butl. Ann. & Mag. Nat. Hist. (5) vi. p. 229 (1880); Ill. Typ. Lep. Het. vi. p. 88, pl. cxx. fig. 8 (1886); Hampson, Fauna Brit. Ind., Moths, iii. p. 359 (1895).

One example from each of the following localities:—
Moupin, Omei-shan, and Chia-ting-fu: July.

Distribution. Sikhim; Khásis (*Hampson*); Western China.

Eustroma pulchraria, sp. n. *Pl. VII., fig. 12.*

Closely allied to *E. pyropata*, Hübn., but the ground-colour of primaries is much darker; the basal area, including chestnut band, is smaller; the central fascia is wider and all the markings are less angular. The ground-colour of secondaries is whiter and the markings are darker and better defined.

Expanse 40–42 millim.

Six male specimens from Ta-chien-lu, Pu-tsu-fong, Omei-shan, and Che-tou: June and July.

Hab. Western China.

Eustroma achatinellaria.

Cidaria achatinellaria, Oberth. *Etud. d'Entom.* v. p. 57, pl. iv. fig. 16 (1880).

Lygris achatinellaria, Græser, *Berl. ent. Zeit.* 1888, p. 406.

I captured a male specimen in Shikotan, one of the Kurile Islands, in August. Oberthür's type was from the Isle of Askold.

Distribution. Amur; Askold; Kurile Islands.

Eustroma Ledereri.

Cidaria Ledereri, Brem. *Lep. Ost-Sib.* p. 88, pl. vii. fig. 17 (1864).

Lygris Ledereri, Græser, *Berl. ent. Zeit.* 1888, p. 406.

Eustroma Ledereri, Meyrick, *Trans. Ent. Soc. Lond.* 1892, p. 71.

Specimens from Yokohama in Pryer's collection. My native collector obtained the species at Hakodate in June or July.

Distribution. East Siberia; Amur; Japan; Yesso.

Eustroma convergenata.

Cidaria convergenata, Brem. *Lep. Ost-Sib.* p. 88, pl. vii. fig. 18 (1864).

Lygris convergenata, Græser, *Berl. ent. Zeit.* 1888, p. 406.

Eustroma convergenata, Meyrick, *Trans. Ent. Soc. Lond.* 1892, p. 71.

A series from Fujisan, Nikko, and Yesso in Pryer's collection.

I obtained the species at Nemoro in Yesso, and in Shikotan, one of the Kurile Islands, in August. My native collector met with it at Hakodate.

Distribution. East Siberia; Amur; Japan; Yesso; Kurile Islands.

Eustroma junctilineata.

Abraxas junctilineata, Walk. Cat. Lep. Het. xxvi. p. 1123 (1862);
Leech, Trans. Ent. Soc. Lond. 1889, p. 145.

A few specimens from Yokohama in Pryer's collection.

I took the species in Satsuma in May and at Fusan in June; my native collector obtained examples in Kiushiu, and I have received others from Kiukiang, and one example from Ta-chien-lu.

Varies in the width of the black oblique lines on the basal half of the wing, the fourth and fifth of these sometimes coalesce and form a band. On the secondaries the discal spot is often very large and conspicuous, and the central black band broad and well defined.

The specimen from Ta-chien-lu differs from the type in the lesser amount of black marking above the yellow patch on outer margin of secondaries, and in the larger size of the spots in that patch; the discal spot is smaller and there is no basal patch. On the under surface of secondaries the central band is only represented by a patch on costa and a spot towards abdominal margin.

Distribution. Japan; Kiushiu; Corea; Western, Central, and Eastern China. .

Eustroma ludovicaria.

Cidaria ludovicaria, Oberth. Etud. d'Entom. v. p. 57, pl. iv. fig. 3 (1880).

Lygris tigrinata, Christ. Bull. Mosc. 1880, p. 64.

Lygris ludovicaria, Græser, Berl. ent. Zeit. 1888, p. 406.

Eustroma ludovicaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

I received specimens from Chang-yang, Wa-shan, Chia-kou-ho, Moupin, Omei-shan: June and July.

Oberthür's type was from Askold.

Distribution. Askold; Amur; Central and Western China.

Eustroma plurilineata.

Abraxas plurilineata, Walk. Cat. Lep. Het. xxiv. p. 1123 (1862).

Four specimens taken by a native collector at Ningpo in June.

Hab. North-eastern China.

Eustroma exsecuta.

Baptia exsecuta, Feld. Reis. Nov. v. pl. cxxxiii. fig. 15 (1875).

There were specimens of the type form from Oiwake in Pryer's collection. I obtained typical examples at Gensan in July, and Mr. Smith took some at Hakone in August.

Var. *latifasciaria*, nov.

Smaller than the type.

All the wings have a broad white fascia; that on secondaries with an angular projection towards outer margin.

I took examples of this form at Hakodate in August, and there was a specimen from Yesso in Pryer's collection.

Distribution. Japan; Yesso; Corea.

E. exsecuta can always be easily distinguished from *Plemyria tibiale*, Esp., which it greatly resembles, by the fringes of the secondaries. These, in the former species, are black, patched with white at outer angle and before anal angle; but in the latter they are entirely black.

Eustroma Haberhauri.

Baptria Haberhauri, Led. Wien. ent. Mon. 1864, p. 170, pl. iii. figs. 9, 10 (May).

Plemyria Haberhauri, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

Odezia Kindermanni, Brem. Lep. Ost-Sib. p. 89, pl. vii. fig. 19 (1864).

Polythrena Kindermanni, Græser, Berl. ent. Zeit. 1888, p. 404.

A long series in Pryer's collection, many of the specimens labelled Oiwake; my collector obtained the species at Hakodate in July, and I have received specimens from Ta-chien-lu and Chow-pin-sa, taken in June and July.

Distribution. Armenia; Amur; Japan; Yesso; Western China.

The Japanese specimens are all of the *Kindermanni* form, but they exhibit a good deal of variation in the white marking, especially on the secondaries; one specimen is without a trace of the fascia on these wings. The specimens from Western China are of the typical form, but there is less black on basal third of the secondaries, and the white marking on primaries is broader. In the specimen from Yesso all the white markings are very broad.

This species can be at once separated from *E. exsecuta* by the chequered fringe.

Eustroma miegata.

Polythrena miegata, Pouv. Ann. Soc. Ent. Fr. 1895, p. 314, pl. vii. fig. 20, ♂ (non 20 a, ♀).

Female.—Rather paler than the male, and the abbreviated fascia is broader.

Poujade only refers to the male of this species. The insect he considered to be the female is a distinct species.

I received several male specimens from Pu-tsu-fong, and one female from Chia-ting-fu: all taken in June and July. Poujade's type was from Moupin.

Hab. Western China.

Eustroma angularia, sp. n.

Polythrena miegata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 314, pl. vii. fig. 20 a, ♀.

Male.—Bright yellow, marked with black. Primaries have a basal patch finely marked with yellow; an angulated fascia separated from basal patch by a thin angulated yellow line; central fascia indicated by an elongated patch on costa and roundish patch on inner margin; outer marginal border deeply indented about the middle. Secondaries have a triangular patch on abdominal margin, streaked with yellow and spotted with the same colour on its upper edge; there is a large spot at anal angle, and the outer margin is bordered from middle to apex. Fringes black, marked with yellow below apex and from middle to inner angle of primaries; on the secondaries they are yellow marked with black from middle to anal angle. Under surface similar to above, but the black triangular patch on secondaries is only indicated by some disconnected spots.

Female.—Rather larger, but colour and markings as in the male.

Expanse, ♂ 30, ♀ 33 millim.

Several specimens of each sex from Omei-shan, Pu-tsu-fong, Ni-tou, Moupin, Chia-ting-fu, Ta-chien-lu.

Hab. Western China.

Genus PLEMYRIA.

(Hübner; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.)

Plemyria tibiale.

Noctua tibiale, Esp. Noct. pl. clxiv. fig. 2 (1790).

Minoa Eversmannaria, Herr.-Sch. Suppl. fig. 443.

Eustroma tibialis, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

Odezia tibiale, Græser, Berl. ent. Zeit. 1888, p. 404.

There were eight specimens in Pryer's collection; two of these were labelled Yesso and one Oiwake. My native collector took one example at Hakodate in June, and I obtained the species at Gensan in July.

Græser records it from Amurland.

Distribution. Europe; Amur; Corea; Japan; Yesso.

In some specimens the white bands are very broad on all the wings. This species is without the pencil of hair on under surface of primaries, and cannot therefore be referred to *Eustroma*.

Plemyria hecate.

Melanippe hecate, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 448 (1878); Ill. Typ. Lep. Het. iii. p. 55, pl. liv. fig. 12 (1879).

There was an extensive series from Oiwake in Pryer's
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collection. My native collector obtained two specimens at Hakodate in June; these are smaller than any in Pryer's series, and the central white band on secondaries and towards costa of primaries is wider.

Hab. Japan and Yesso.

Plemyria hastata, Linn., *chinensis*, nov. *Pl. III, fig. 11.*

Basal half of all the wings black, traversed by three or four more or less interrupted wavy lines; outer margin broadly bordered with black, intersected by a wavy interrupted white line; intervening space white, intersected by a transverse series of black dots.

Sometimes the secondaries are free from white markings on the black portions of the wing, and there are very few of such markings on the primaries.

Expanse 36–38 millim.

A nice series from Pu-tsu-fong, Ta-chien-lu, Omei-shan: May and June.

Hab. Western China.

Specimens of *P. hastata* from Amurland, in my collection, agree well with European examples.

Plemyria lugens.

Melanippe lugens, Oberth. Etud. d'Entom. xi. p. 34, pl. ii. fig. 4 (1886), xviii. p. 38, pl. iii. fig. 38 (1893).

Cidaria lugens, Alph. Rom. sur Léop. vi. p. 79 (1892).

My collectors in Western China obtained this species during June and July in most of the localities that they visited.

Alphéraky records a female specimen from the province of Gan-Sou, taken in July.

Hab. Western China.

Plemyria rivata.

Geometra rivata, Hübn. Geom. fig. 409.

Plemyria rivata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

Melanippe supergressa, Butl. Ill. Typ. Lep. Het. iii. p. 55, pl. liv. fig. 11 (1879).

Several specimens from Yokohama and Oiwake in Pryer's collection. I obtained the species at Nagasaki in May, at Gensan in June, and at Tsuruga, Hakodate, and Shikotan in August. My native collector took examples at Gensan in July. All are identical with European specimens.

Distribution. Europe; Amur; Japan; Yesso; Corea.

Plemyria parvularia.

Primaries white; basal two thirds dark grey, outer marginal border grey, traversed by a rather wavy white line; there is a black cuneiform mark above the middle of outer margin and a whitish ring just below it; the outer edge of the basal two thirds is obtusely angled above the middle. Secondaries fuscous grey, darker on basal half, and with a pale central band; submarginal line indistinct. Fringes grey. Under surface ochreous brown; basal area of primaries fuscous, and the outer marginal area is suffused with the same colour; the secondaries have some fuscous lines and a central band.

Expanse 25 millim.

One male specimen from Pu-tsu-fong, June.

Hab. Western China.

Allied to *P. galiata*, Hübn.

Plemyria fatuaria, sp. n.

Primaries white with brownish markings; basal patch with the outer edge almost straight; central fascia with the inner edge ill-defined and the outer indented; the outer marginal area has a cloud at apex, one just above the middle, and a smaller one at angle, each is intersected by the white wavy submarginal line, which is edged with brownish between the clouds; the space of ground-colour beyond central fascia is traversed by an interrupted dusky line; discal spot black, placed on inner edge of central fascia; fringes white, chequered with brownish. Secondaries fuscous grey, with indications of a paler band beyond the middle; submarginal line wavy, whitish; fringes white, marked with fuscous grey. Under surface fuscous grey, with an obscure darker angulated line beyond the middle, followed by a faintly paler band: secondaries whitish, irrorated with fuscous; two fuscous bands on central area, the outermost with an angular expansion below the middle enclosing a patch of the ground-colour; submarginal band fuscous.

Expanse 20 millim.

Four specimens from Chang-yang, July.

Hab. Central China.

Plemyria bicolorata.

Phalæna bicolorata, Hufn. Berl. Mag. iv. 608 (1769).

Geometra rubiginata, Hübn. Geom. fig. 250.

Plemyria bicolorata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

There were a few specimens from Yesso in Pryer's collection, and I took two or three at Nemoro and Hakodate in August.

Japanese examples are larger but do not otherwise differ from European specimens.

Distribution. Europe; E. Siberia; Amur; Japan; Yesso.

Plemyria castaria, sp. n.

Primaries creamy white; basal half traversed by three black wavy lines commencing as spots on the costa; outer margin bordered with black, but before this there is a black dash on costa from which a double black sinuous line proceeds to inner margin, a black cloud about the middle of this line unites it with the border; discal spot black. Secondaries white, a narrow black band on outer margin shaded inwardly with grey. Fringes: of primaries black with some pale dots at their base; of secondaries dark grey, becoming white towards outer angle and on outer margin, spotted as on primaries. Under surface very similar to above, but the secondaries have a black discal spot and indications of a central band; the submarginal band is clearer and there is no cloud connecting it with the marginal border. Antennæ serrated in the male.

Expanse 28 millim.

Six male specimens from Moupin, Ni-tou, Pu-tsu-fong: July.

Hab. Western China.

Plemyria kezonmetaria.

Melanippe kezonmetaria, Oberth. Etud. d'Entom. xviii. p. 38, pl. iv. fig. 48 (1893).

I received a nice series from Ta-chien-lu and one male specimen from Wa-ssu-kow, taken by my native collectors in May and June.

Hab. Western China.

The antennæ of the male are shortly bipectinate; apex simple. Perhaps this species would be more properly placed in *Asaphodes*, Meyr.

Plemyria ouanguemetaria.

Melanippe ouanguemetaria, Oberth. Etud. d'Entom. xviii. p. 38, pl. iv. fig. 52 (1893).

My collectors met with this species at Ta-chien-lu and Wa-ssu-kow, and at How-kow: June and July.

Hab. Western China and Thibet.

Antennæ in the male bipectinated; apex simple.

Plemyria bellaria, sp. n.

White, with black markings. Primaries have bands on basal area, broadest on costa; central band indicated by a hook-shaped mark on the costa and some dots on inner margin; a broad border on outer marginal area, tapering towards inner margin, enclosing three white spots, one on costa, one about the middle, and one towards inner margin. Secondaries have a slender central band from abdominal margin to middle of the wing, and a border on outer margin; the latter encloses two white spots, one in the middle, and one at anal angle, and a minute dot above the middle spot. Fringes black and white. Under surface as above. Antennæ bipectinated, the shaft black ringed with white, and the pectinations rather widely apart.

Expanse 25 millim.

Four male specimens: Ichang, April; Ta-chien-lu, Ni-tou, May and July.

Hab. Central and Western China.

[To be continued.]

LVI.—*The Ochre-footed Scrub-Squirrels of East Africa.*

By W. E. DE WINTON.

THERE appears to be great confusion among naturalists as to the specific determination of the most common small squirrels of East Africa. Dr. F. A. Jentink, when looking over the specimens in the British Museum previous to writing his most excellent "Monograph of the African Squirrels," published in 'Notes from the Leyden Museum,' vol. iv. p. 1 (1882), noticed that the specimens from East Africa were distinct from the South-African species, *Sciurus Cepapi*, A. Sm.; unfortunately he never described the forms, but includes under *S. Cepapi* (*t. c.* p. 26) all the small unstriped squirrels from South and East Africa.

Naturalists have continued to record specimens from East Africa under the latter name, although Dr. Huet (Nouv. Arch. Mus. iii. ser. 2, p. 154, pl. vii. fig. 2, 1880) described the form from Bagomoyo as a distinct species, giving it the name of *S. ochraceus*. Dr. Pagenstecher (Bericht Naturh. Mus. Hamburg, 1885, p. 42) described a form from the Pangani River and Mount Meru under the name of *S. Cepapi urusensis*, at the same time stating that its affinities lie with *S. Cepapi*, *S. multicolor*, and *S. Aubryi*=*S. rufobrachiatus*; such a generalized form should surely be worthy of more than

subspecific rank, as the three species named are such very widely separated forms *inter se*. Dr. Matschie (SB. Ges. nat. Freund. 1894, p. 256) disregards these two species entirely, giving the former name as a synonym of *S. Cepapi*, and describes a specimen as *S. Pauli* from a living animal sent home from Tanga and the skin of a very young individual from the same neighbourhood.

S. Cepapi, a larger and stronger animal, only occurs south of the Zambesi River; northward in Mozambique the bright-coloured striped squirrel *S. flavivittis* is found; north of the Rufigi River the faintly striped *S. ochraceus* occurs at Dar-es-Salaam, Bagomoyo, and in Usagara. The side stripe of this latter species, which at all times is very faint, varies much in distinctness, as is well shown in the series in our Museum; in some specimens it is scarcely perceptible and would, in all probability, be overlooked unless expected. The forms from Pangani and Tanga, agreeing with the last-named in having a dull greenish-white belly, have been described as stated above, and if, as I suppose, *S. aruscensis* belongs to this group, it is difficult to see how *S. Pauli* can be made out distinct, if, indeed, either are separable from *S. ochraceus*.

About Mombasa and inland as far as 6000 feet on Kilimanjaro, and northward in the coast region, we find the orange-bellied form which has lately been described by Mr. S. Rhoads (Proc. Ac. Philad. 1896, p. 522) as *S. ganana*. In the highlands of Kikuyu we find yet another form, very dark in colouring and rather larger than its allies; this species I have pleasure in naming *S. Jacksoni*, after the distinguished explorer, Mr. F. J. Jackson, who presented the specimens to the Museum and has done so much in adding to our knowledge of the fauna of East Africa in several branches of zoology. I think there can be little doubt that the squirrel mentioned by Mr. Rhoads (*t. c.* p. 521) from Marsabit, an eastern offshoot of Mount Kenia, is of this species.

Sciurus Jacksoni, sp. n.

General colour dark olive-green, slightly washed with brown; the face, rump, upper arms, and legs with a rather stronger brown tint; the feet and hands more or less grizzled rufous orange or rust-coloured; a broad buff stripe above and below the eyes; cheeks and ears grizzled of the general body-colouring; on the sides the dark colouring of the upper parts gradually passes into that of the paler underparts, the centre line of the chin, throat, and belly and the inner sides of

whorled, canaliculate at the sutures, the upper disk rounded, the lower planate, deeply excavate; the lamellar segments clearly perceived radiating round the umbilicus; the shell is obtuse-angled at the periphery; the mouth is obliquely obtuse-triangular, lip simple.

Four specimens.

We have taken the largest specimen as the type.

Assiminea tyttha *, sp. n. (Pl. XVII. fig. 11.)

A. testa minuta, cornea, fere lævi, globoso-conica, solidiuscula; anfractibus quatuor, apicali obtuso, cæteris ventricosis, longitudinaliter indistincte striatulis, ultimo rapide accrescente, cæteris conjunctim magnitudine superante; apertura subrotunda; peristomate rotundo, simplici; columella obliqua, crassiuscula; operculo rubro, littoriniformi, normali.

Long. 1.50, lat. 1 mm.

Hab. Howick, near Pietermaritzburg, "on the under surface of the leaves of a sage-like shrub" (*Mr. Burnup*).

A few specimens of a very small *Assiminea*, bearing some likeness to *A. litorina*, Delle Chiaje, a native of British and South-European shores. The shell is bright horny, almost smooth, being indistinctly longitudinally striate, rather solid, four-whorled, the apical whorl obtuse, the rest tumid, the last whorl much larger than all the rest together; mouth almost round, outer lip round, simple; columella oblique, thickened; operculum normal.

* τυτθός, small.

EXPLANATION OF PLATE XVII.

- Fig. 1. *Ennea Cairnsi*.
 Fig. 2. — *Burnupi*.
 Fig. 3. *Pupa (Faula) perezimnia*.
 Fig. 4. *Hapalus catarractæ*.
 Fig. 5. *Trachycystis teretiuscula*.
 Fig. 6. *Achatina Livingstonei*.
 Fig. 7. — *drakensbergensis*.
 Fig. 8. *Buliminus (Pachnodus) carinifer*.
 Fig. 9. *Subulina tugelensis*.
 Fig. 10. *Planorbis (Segmentina) planodiscus*.
 Fig. 11. *Assiminea tyttha*.

LXIX.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.
—Part II. Family Geometridæ; Subfamilies Enochrominæ, Orthostixinæ, Larentiinæ, Acidaliinæ, and Geometrinæ.

[Continued from p. 573.]

Genus CIDARIA.

(Treit. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 349 (1895).)

Cidaria luctuosaria.

Melanippe luctuosaria, Oberth. Etud. d'Entom. v. p. 53, pl. iv. fig. 13 (1880).

Cidaria luctuosaria, Græser, Berl. ent. Zeit. 1888, p. 410.

There was a fine series from Oiwake in Pryer's collection.

Oberthür described this species from the Isle of Askold, and Græser records it from Amurland.

Distribution. Askold ; Amur ; Japan.

Cidaria cineraria.

Cidaria cineraria, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 451 (1878) ; Ill. Typ. Lep. Het. iii. p. 58, pl. iv. fig. 8 (1879).

There were some specimens from Oiwake and Yesso in Pryer's collection, and I have received others taken by a native collector at Hakodate : June and July.

This is probably a local form of *C. unangulata*, Haw.

Hab. Japan and Yesso.

Cidaria picata.

Geometra picata, Hübn. Geom. fig. 134.

Cidaria picata, Treit. Schmett. vi. 2, 193 ; Guen. Phal. ii. p. 461.

Hydriomena picata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

Occurs at Chang-yang, Ta-chien-lu, Chia-ting-fu, Che-tou, and Omei-shan in June and July.

The specimens show variation in the width of the lines forming the central band and also in the width of the white border of the band ; in a large proportion of them the secondaries are devoid of marking on the upper surface.

The examples from Central China are rather smaller than the majority of those from the west, and appear to be more constant in always having the band composed of broad and often confluent lines.

Distribution. Europe ; Ural ; Central and Western China.

Cidaria variegata.

Larentia variegata, Moore, Proc. Zool. Soc. Lond. 1867, p. 653.

Cidaria variegata, Hampson, Fauna Brit. Ind., Moths, iii. p. 353 (1895).

One female specimen from Chia-kou-ho, taken in July.

Distribution. Sikhim (*Hampson*); Kashmir; Kulu; Western China.

Cidaria corylata.

Geometra corylata, Thunb. Ins. Suec. iv. p. 61, pl. iv. fig. 11 (1792).

Hydriomena corylata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Cidaria fabrefactaria, Oberth. Etud. d'Entom. v. p. 56, pl. iv. fig. 15 (1880).

There were specimens from Oiwake, Yesso, Nikko, and Ohoyama in Pryer's collection. Græser records the species from Amurland, and Oberthür, under the name *fabrefactaria*, from the Isle of Askold.

Distribution. Europe; Ural; Amur; Japan; Askold.

Cidaria aurata.

Cidaria aurata, Moore, Proc. Zool. Soc. Lond. 1867, p. 664; Hampson, Fauna Brit. Ind., Moths, iii. p. 355 (1895).

Cidaria corylata, var. *tsermosaria*, Oberth. Etud. d'Entom. xviii. p. 39, pl. iii. fig. 43 (1893).

One specimen in Pryer's collection.

Hampson considers *Cidaria corylata*, var. *tsermosaria*, Oberth., from Moupin, to be synonymous with *C. aurata*, Moore, which occurs throughout the Himalayas.

Distribution. Murree; Dharmśāla; Sikhim; Bhutān; Tibet; Khāsis (*Hampson*); Kulu; Japan.

Cidaria fulgidaria, sp. n.

Male.—Primaries yellowish; basal patch dark brown, its external edge angulated and bounded by a silvery-white line; central fascia broad on costa, much narrower on inner margin, both edges are bounded by wavy silvery-white lines, the external one deeply indented below the costa, and the internal one indented at the middle; the brownish outer marginal area is traversed by a serrated silvery-white line, and interrupted by an oblique streak of the ground-colour at apex, there is a smaller spot of the ground-colour on the middle of the outer margin. Secondaries greyish, basal and outer marginal areas darker, the former is limited by a wavy dusky line, and the latter is inwardly bordered by a pale macular band; discal spot blackish. Fringes of primaries

brown marked with yellow, those of secondaries are yellow marked with brown. Under surface: primaries yellowish, with the markings of upper surface faintly reproduced; secondaries yellowish dusted with brown and silvery-white scales, and traversed by wavy silvery-white edged brown bands; submarginal line macular, silvery white; fringes yellowish, chequered with brown.

Female.—Primaries as in the male, but the secondaries are white and without marking; fringes of these wings not marked with brown.

Expanse 32 millim.

Three male specimens and one female from Pu-tsu-fong, June.

Hab. Western China.

Allied to *C. corylata*, Thunb.

Cidaria albipunctaria, sp. n.

Primaries ochreous brown; basal patch and central fascia blackish brown, both are narrowly edged with white, the former is deeply indented in the middle of its outer edge, the latter has a double-toothed projection on its outer edge and is contracted below the costa and again above inner margin; on the outer marginal area there is a blackish-brown patch below the apex interrupted by a white blotch; submarginal line white and wavy, followed on the costa by a white blotch extending to the apex, and at outer angle by some white spots; the costal portion of the white outer edging of central fascia is diffuse, and the costal portion of the fascia contains a pale brown blotch, which is preceded and followed by a short white line. Secondaries whitish, greyish on outer margin, with faint indications of greyish central spot and two transverse lines. Fringes yellowish. Under surface: basal two thirds of primaries dusky, the outer edge corresponding with that of central fascia above, and intersected by two pale subbasal lines, the spaces between these lines being rather brownish; outer third is whitish, with a dark greyish patch on outer margin below apex, preceded by a brownish transverse cloud; secondaries whitish, powdered with brownish, and traversed by two brown lines, the discal spot is dark brown.

Expanse 34 millim.

Two male specimens, one from Ta-chien-lu, and the other from Pu-tsu-fong: June.

Hab. Western China.

This species is very closely allied to *C. corylata*, Thunb.,

but it is a much brighter-looking insect, and is further distinguished by the conspicuous white blotch on outer margin, together with the different contour of the central fascia.

Cidaria chimakaleparia.

Larentia chimakaleparia, Oberth. Etud. d'Entom. xviii. p. 37, pl. iii. fig. 33 (1893).

One specimen from Pu-tsu-fong, taken in June. Oberthür's type was from Ta-chien-lu.

Hab. Western China.

Cidaria ochracearia, sp. n.

Closely allied to *C. fulvata*, Forst., but at once distinguished by its ochraceous secondaries, which have the fringes chequered with brown. The colour of the primaries is also deeper, and the edges of the central fascia, although angled outwardly and indented inwardly as in *C. fulvata*, are not waved. The under surface is entirely ochraceous, with slightly darker central markings on all the wings.

Expanse 26-29 millim.

Several specimens from Ta-chien-lu, Moupin, and Omei-shan: June and July.

Hab. Western China.

Fulvata, Forst., is placed by Meyrick in *Hydriomena*, Hübn. (Trans. Ent. Soc. 1892, p. 72).

Cidaria albicillata.

Phal. Geometra albicillata, Linn. Syst. Nat. x. 527; Clerck, Icon. i. pl. i. fig. 12.

Melanthia albicillata, Dup. Léop. viii. pl. clxxxviii. fig. 4; Guen. Phal. ii. p. 382.

Hydriomena albicillata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Melanthia casta, Butl. Ill. Typ. Lep. Het. iii. pl. liv. fig. 8.

There were specimens from Oiwake and Yesso in Pryer's collection, and my native collector captured the species at Hakodate in July.

Distribution. Europe; Altai; Amur; Japan; Yesso.

Except that they are generally rather larger, there is no important difference between Japanese examples (*casta*, Butl.) and European specimens of this species. The discal spots are a trifle larger, and the marginal border of secondaries is uninterrupted.

Cidaria yokohamæ.

Melanthia yokohamæ, Butl. Trans. Ent. Soc. Lond. 1881, p. 422.

Cidaria rogenhoferi, Gräser, Berl. ent. Zeit. 1888, p. 419.

There was a specimen from Yokohama in Pryer's col-

lection, and I took one example at Gensan in July. Butler's type was from Yokohama and Græser records it from Raddefka.

Distribution. Japan; Corea; Amur.

Butler states that this insect is closely allied to "*M.*" *ruficillata*, but it appears to be nearer to *C. cuculata*, Hufn., and may possibly be an Eastern Asian form of that species.

Cidaria obscura.

Cidaria obscura, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 450 (1878); Ill. Typ. Lep. Het. iii. p. 57, pl. lv. fig. 5 (1879).

There was one example in poor condition in Pryer's collection. I received a specimen from Mr. Manley taken at Yokohama, and my collectors in Western China took one at Moupin in July.

Distribution. Japan; Western China.

As Moore described a *Cidaria obscurata* in 1867, it would be better perhaps to rename this species *Butleri*.

Cidaria latifasciaria, sp. n.

Primaries dingy purplish grey; small basal patch and broad central fascia brown, the former is outwardly limited by two blackish lines enclosing a brown band, and the latter has both edges darker than the median portion, and is limited on each side by a wavy blackish line, the outer one broadest towards costa, and the inner one broadest about the middle; there is a short blackish apical streak. Secondaries fuscous grey, darker towards outer margin. Fringes dark grey. Under surface fuscous brown; the secondaries have traces of a darker transverse line beyond the middle.

Expanse 42 millim.

One female specimen from Wa-shan, May.

Hab. Western China.

Cidaria procellata.

Phalæna procellata, Fabr. Mant. Ins. 185.

Geometra procellata, Hübn. Geom. fig. 251.

Melanippe procellata, Dup. Léop. viii. pl. clxxxviii. fig. 3; Guen. Phal. ii. p. 303.

Hydriomena procellata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Melanippe inquinata, Butl. Ill. Typ. Lep. Het. iii. pl. liv. fig. 9.

There was a nice series from Oiwake in Pryer's collection. I captured specimens in Satsuma in May, at Gensan in June, and at Tsuruga in August. Other Japanese localities are Yokohama (*Jonas*) and Hakodate (*Whitely*). I have

received the species from Kiukiang, and from several localities in Western China.

Distribution. Europe; Altai; Amur; Corea; Japan; Yesso; Central and Western China.

In my series of this species from China, Japan, and Corea there are specimens which exactly agree with typical *procellata*; others are identical with *inquinata*, Butl.; and others, again, are almost unicolorous fuliginous brown. All these forms are connected by intergrades.

Cidaria postalbaria, sp. n.

Primaries fuscous brown; basal patch and central fascia darker, the latter intersected by a pale line; the basal patch is outwardly and the fascia inwardly bordered by a pale line; outer margin suffused with dusky; submarginal line indicated by a white spot about the middle, one towards apex and a pale mark at outer angle. Secondaries white, suffused with smoky on the abdominal area, and with some black clouding about anal angle. Under surface fuscous grey on primaries, whiter on secondaries; there is a pale band beyond the middle on all the wings, this is clearly defined on its inner edge by a blackish line, which is elbowed about the middle of its length on primaries, and is crenulate on secondaries, the outer edge is diffuse; submarginal line of primaries represented by whitish dots, the largest about the middle. Fringes: of primaries agree with the ground-colour; of secondaries greyish marked with smoky grey.

Expanse 34-40 millim.

Several specimens, including both sexes, from Pu-tsu-fong, Omei-shan, Chia-kou-ho, and one female from Chang-yang: July.

Hab. Central and Western China.

Cidaria silaceata.

Geometra silaceata, Hübn. Geom. fig. 477.

Hydriomena silaceata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Cidaria umbrosaria, Motsch. Etud. d'Entom. 1864, p. 36.

There were some specimens from Yokohama in Pryer's collection, and my native collector obtained the species in the island of Kiushiu.

Several examples, including both sexes, were received from Chang-yang; these were taken in July, and range from 26-34 millim in expanse. The species also occurred at Tachien-lu, Omei-shan, Chia-ting-fu, Chia-kou-ho, Pu-tsu-fong, and How-kow in July; the largest of these specimens

measures 38 millim., and the smallest 30 millim. in expanse. The How-kow examples are of the typical form as regards the primaries, but the secondaries are almost devoid of marking.

Var. *angustaria*, nov.

All the wings are narrower than in the type, and heavily suffused with fuliginous on both surfaces; the white transverse lines of primaries are very clearly defined.

One example of each sex from Pu-tsu-fong.

Distribution. Europe; Amur; Japan; Kiushiu; Central and Western China.

Cidaria capitata.

Larentia capitata, Herr.-Sch. Deutsch. Ins. 165, pl. iii.

Hydriomena capitata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Cidaria Mariesi, Butl. Trans. Ent. Soc. Lond. 1881, p. 424.

Cidaria Pryeri, Butl. l. c. p. 425.

Several examples from Yokohama and Oiwake in Pryer's collection. I took the species at Hakodate in August. Butler gives Nikko and Tokio also as localities.

Distribution. Europe; Amur; Japan; Yesso.

Cidaria fervidaria, sp. n.

Male.—Primaries brown; basal patch and central fascia darker, both edged with ochreous, especially on the costal area; the fascia is deeply indented about the middle of its inner edge and elbowed on its outer edge; the reddish-brown median nervules, where they cross the fascia, are powdered with ochreous; submarginal line pale brown, intersecting some dark brown marks in the nervular interspaces; there is an oblique ochreous streak from apex. Secondaries orange-brown; basal and outer marginal areas clouded with darker. Fringes brownish on primaries; orange-yellow chequered with brownish on secondaries. Under surface fuscous brown, with a broad orange-yellow fascia beyond the middle, between this and the outer margin there is a short oblique series of orange-yellow dots, terminating in a patch of the same colour on the middle of the margin; secondaries orange-yellow, thickly sprinkled with brown, and traversed by darker central and submarginal bands.

Female.—Differs from the male in the paler colour of secondaries and the more distinct transverse markings on those wings; under surface orange-yellow, with conspicuous interrupted basal central and submarginal brown bands.

Expanse 32-36 millim.

One male specimen from Moupin and one from Omei-shan, one example of each sex from Chang-yang; these last are smaller than the other specimens.

Hab. Central and Western China.

Cidaria subochraria, sp. n.

Primaries grey-brown, basal area clouded with darker; margins of central fascia dark brown, the inner edge of fascia indented, the outer elbowed; there are some dark clouds on outer marginal area, and the submarginal line, commencing as a pale dash from costa, is continued to inner margin as a series of dark internervular spots; there is also a short whitish dash from the apex. Secondaries ochreous brown, smoky on basal half. Fringes agree with the wings, preceded on the secondaries by a dark line. Under surface of primaries dark smoky grey, suffused on the costa with ochreous, and more strongly on the apical portion of outer marginal area, the latter being limited by a blackish band: secondaries are ochreous, powdered with smoky grey, and have a black discal dot and a blackish central band.

Expanse 36-38 millim.

Eight male specimens from Omei-shan, June.

Hab. Western China.

The central fascia is sometimes contracted below the middle, and in some specimens only the costal half is clearly defined. In some examples the secondaries are entirely smoky brown, with an ochreous tinge on outer marginal area.

Allied to *Cidaria (Eustroma) monana*, Swinh.

‡ *Cidaria oblongata*.

Cidaria oblongata, Walk. Cat. Lep. Het. xxv. p. 1402 (1862).

Cidaria decurrens, Moore, Lep. Atk. p. 276.

Specimens from Yokohama in Pryer's collection.

I took the species in Satsuma in May and at Tsuruga in June. My native collector took it in the island of Kiushiu, and I have received specimens from Ichang and the province of Kwei-chow.

Distribution. Khásis; Nynee-Tal (*Hampson*); Japan; Central and Western China.

Cidaria mactata.

Cidaria mactata, Feld. Reise Nov. pl. cxxxii. fig. 38 (1875).

Specimens in Pryer's collection from Ohoyama and Nikko. I took the species in Hakodate, and have received it from

Kiushiu, Gensan, Kiukiang, Moupin, and Wa-shan. It occurs in June and July.

Distribution. Amur; Japan; Yesso; Kiushiu; Corea; Central and Western China.

Cidaria literataria, sp. n.

Primaries pale greyish brown; subbasal band and central fascia chocolate-brown, the former contracted towards costa, the latter attenuated towards inner margin and containing an irregular patch of the ground-colour in the costal portion, below this the fascia is intersected by the pale median nervure; there are some chocolate-brown spots on costa, at the base of the wing, between fascia and subbasal band, and on apical area; the latter comprises a connected series of three and an apical dash; all the brown markings are outlined in whitish brown. Secondaries greyish white, with blackish discal dot. Under surface pale fuscous; secondaries and apical area of primaries irrorated with darker.

Expanse 38 millim.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

The markings of this species somewhat resemble those of *Eustroma cervinaria*, Moore.

Cidaria metaria.

Cidaria metaria, Oberth. Etud. d'Entom. xviii. p. 39, pl. iv. fig. 54 (1893).

Oberthür's type was from Tâ-Tsien-Loû. My collectors did not meet with the species.

Hab. Western China.

Cidaria azonaria.

Somatina azonaria, Oberth. Etud. d'Entom. xviii. p. 32, pl. iv. fig. 50 (1893).

This species occurred in most of the localities in Western China that my collectors visited: June and July.

Hab. Western China.

Cidaria nipponica.

Eubolia nipponica, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 452 (1878);

Ill. Typ. Lep. Het. iii. p. 59, pl. lv. fig. 11 (1879).

Cidaria nipponica, Hampson, Fauna Brit. Ind., Moths, iii. p. 357 (1895).

Cidaria suavata, Christ. Bull. Mosc. 1880, p. 69.

Hydriomena nipponica, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Cidaria (nipponica), Butl., var. ? *ignorata*, Staud. Iris, viii. p. 336 (1896).

There were specimens from Oiwake in Pryer's collection. I obtained the species at Gensan in July.

Staudinger records var. *ignorata* from North-east Thibet. Captain Young took specimens in Kulu, North-west Himalayas.

Distribution. Simla; Dharmasála; Sikhim (*Hampson*); Kulu; Japan; N.E. Thibet.

Cidaria polygrammata.

Geometra polygrammata, Bork. Eur. Schmett. v. 560; Hübn. Geom. fig. 277.

Phibalapteryx polygrammata, Steph. Ill. Brit. Ent., Haust. iii. p. 256; Guen. Phal. ii. p. 436.

Hydriomena polygrammata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

One specimen taken by myself in July at Nagahama.

Distribution. Europe; Amur; Japan.

Cidaria fumataria, sp. n.

Male.—Primaries brownish grey; basal patch and central fascia blackish, the inner edge of the latter is nearly straight and the outer edge has an obtuse projection above the middle, the median area of this fascia is pale and encloses a black discal spot; submarginal line whitish, shaded inwardly, especially towards costa, with dusky. Secondaries smoky grey, with a small black discal spot and faint indications of a pale central band. Fringes concolorous with the wings. Under surface smoky grey, basal two thirds of all the wings rather darker.

Female similar to the male, but the ground-colour is darker grey and the whitish submarginal line is clearer.

Expanse 22–24 millim.

Six male specimens and two females from Chang-yang, July and August.

Hab. Central China.

This species resembles *Plemyria galiata*, Hübn., in style of marking, but the ground-colour is very different.

Cidaria bipartaria, sp. n.

Primaries have the basal third olivaceous green, limited by an outwardly oblique black line; the rest of the wing is blackish with a grey tint; there is a greenish spot on costa, and, preceding it, two blackish lines, the outer one undulated and waved, edged internally with whitish. Secondaries dark

fuscous grey. Under surface fuscous, slightly paler on outer marginal area of all the wings.

Expanse 24 millim.

One female specimen from Pu-tsu-fong, June.

Hab. Western China.

Cidaria fasciaria, sp. n.

Male.—Primaries dark grey, with two white bands, the first has an angular projection in its outer edge below costa and a small black cloud on inner margin; the second is biangulate, and transversely intersected by a dusky line; the central and outer marginal areas traversed by wavy white lines, and there is a white cloud-like spot at apex and a similar one about the middle. Secondaries fuliginous grey, with a paler central band; all the wings have a black discal spot. Fringes grey, marked with darker. Under surface of primaries fuliginous, traversed by two blackish lines and a pale band; there is a white spot on middle of outer margin: secondaries powdered with greyish on basal area and on outer margin, and traversed by a greyish curved band.

Female similar to the male, but the colour is greyish brown tinged with olivaceous at base and on middle of costa.

Expanse, ♂ 23, ♀ 25 millim.

Two male specimens and one female from Omei-shan, a female from Moupin, two from Ichang, and one from Changyang: June and July.

Hab. Central and Western China.

Cidaria parvaria.

Boarmia parvaria, Leech, Entom., Suppl. p. 52 (May 1891).

Two male specimens, probably from Yokohama, in Pryer's collection.

Hab. Japan.

Cidaria undulata.

Melanippe (?) *undulata*, Leech, Trans. Ent. Soc. Lond. 1889, p. 147, pl. ix. fig. 15.

One example of each sex from Kiukiang and a female specimen from Ichang, June and July. There is a specimen labelled "Chekiang" in the National Collection at South Kensington.

Hab. Central China.

Cidaria complicata.

Cidaria complicata, Butl. Ill. Typ. Lep. Het. iii. p. 57, pl. lv. fig. 4 (1879).

Two specimens taken by native collector at Gensan.

Butler's type was from Yokohama.

Hab. Japan and Corea.

Cidaria erectaria, sp. n.

Whitish, suffused with grey. Primaries have a brownish basal patch and central fascia, the first is limited by a slightly curved white line, the second is outwardly angled, edged with white, and is preceded by a conspicuous black spot ringed with white; between the basal patch and central fascia there is an upright blackish bar extending from inner margin to subcostal nervure, and a spot of the same colour on costa; beyond the fascia there are three fine angulated and wavy brownish lines and a broader white one; the apical fourth of costa is marked with blackish, and there is a smaller spot of the same colour on outer margin just below apex; an interrupted brownish band runs from the apical mark to inner margin. Secondaries have the basal half suffused with brownish grey, and the outer half traversed by three fine wavy and angulated lines and a brownish-grey band, but these do not reach the costa. Fringes whitish, chequered with grey, and preceded by a blackish line. Under surface whitish suffused with grey; transverse lines as above; all the wings have a blackish discal dot outlined with whitish.

Expanse 21-25 millim.

Four specimens taken by myself, and three by my native collector, at Hakodate in August.

Hab. Yesso.

Cidaria fluviata.

Geometra fluviata, Hübn. Geom. figs. 280, 281, ♂.

Geometra gemmata, Hübn. *op. cit.* fig. 283, ♀.

Cidaria fluviata, Hampson, Fauna Brit. Ind., Moths, iii. p. 363.

Hydriomena fluviata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Several specimens from Yokohama in Pryer's collection.

I obtained examples of this species at Foochow in April, in Satsuma in May, at Gensan in July, and at Nikko in September, and have received a female example from Putsu-fong, taken in June and July.

Distribution. Nearctic region; Chili; Palæarctic region; throughout India, Ceylon, and Burma (*Hampson*); Japan; Corea; Eastern and Western China.

Cidaria pomæriaria.

Cidaria pomæriaria, Eversm. Faun. Volg.-Ural. p. 417 (1844).

Coremia pomæriaria, Guen. Phal. ii. p. 415.

Xanthorhoe pomæriaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 77.

Specimens from Yesso in Pryer's collection; these have

the outer edge of the central fascia less angulated than in typical examples.

Distribution. Europe; Altai; Eastern Siberia; Amur; Yesso.

Cidaria saturata.

Cidaria saturata, Guen. Phal. ii. p. 269 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 362 (1895).

Larentia exliturata, Walk. Cat. Lep. Het. xxiv. p. 1195 (1862).

Larentia granitalis, Butl. Trans. Ent. Soc. 1881, p. 426; Ill. Typ. Lep. Het. vii. p. 114, pl. cxxxvii. fig. 8.

Coremia livida, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 449; Ill. Typ. Lep. Het. iii. p. 56, pl. lv. fig. 2 (1879).

Larentia inamæna, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 444 (1879).

There were specimens in Pryer's collection from Yokohama. I captured the species at Nagasaki in June, and have received it from Wa-shan, Moupin, Chang-yang, and Putsu-fong.

Distribution. Natal; N.W. Himalayas; Khâsis; Nilgiris (*Hampson*); Japan; Kiushiu; Central and Western China.

A very variable species. Among the specimens comprised in my series are examples which agree with the type of *livida*, Butl., others with that of *inamæna*, Butl.; others again represent *granitalis*, Butl., whilst among the intergrades are examples which do not appear to be separable from Dharmasala specimens of *exliturata*, Walk., in the National Collection at South Kensington.

Cidaria angularia, sp. n.

Similar in size, colour, and markings to *C. unidentaria* from Europe, but the inner edge of the central fascia on primaries is rather straighter, and on the outer edge the projection above the middle is not indented; the pale band following the fascia is better defined and the line traversing it is less wavy than the same character in *C. unidentaria*; the outer marginal area beyond the pale band is dusky. Antennæ serrate-fasciculate.

One male specimen and two females from Oiwake in Pryer's collection.

Hab. Japan.

Cidaria designata.

Phalæna designata, Hufn. Berl. Mag. iv. p. 612; Rott. Naturf. xi. p. 85 (1777).

Geometra propugnata, Hübn. Geom. fig. 286.

Coremia propugnata, Guen. Phal. ii. p. 412; Walk. Cat. Lep. Het. xxv. p. 1304.

Xanthorhoe designata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 77.

Specimens were obtained at Hakodate in July and August, and there were a few in Pryer's collection from Yesso.

Distribution. Europe; Altai; E. Siberia; Amur; Japan; Yesso; N. America.

Cidaria aridaria, sp. n.

Primaries pale brown with an ochreous tinge; central fascia broad obscure brown, outlined in blackish, the inner edge is indented below costa, and the outer edge bidentate; submarginal line double, but most distinctly so towards the inner margin, blackish and wavy, beyond it there are two dark clouds, one on costa and one below it, the latter connected with an oblique blackish streak from apex. Secondaries fuliginous grey, with a darker discal spot and indications of a paler central line. Fringes grey, paler on secondaries, and preceded on all the wings by a blackish lunulated line. Under surface grey-brown: the basal two thirds of primaries darker, limited by a paler band which is diffuse on its outer edge; secondaries mottled with darker, the basal two thirds limited by a dusky line followed by a pale band; all the wings have a blackish discal spot.

Expanse 32 millim.

One female specimen from Wa-shan, Western China: June.

Cidaria viridata.

Cidaria viridata, Moore, Proc. Zool. Soc. Lond. 1867, p. 661; Hampson, Fauna Brit. Ind., Moths, iii. p. 365 (1895).

A male specimen from Omei-shan, and a female from Ni-tou: July.

Distribution. Sikhim; Khásis (*Hampson*); Western China.

Cidaria ambustaria, sp. n.

Primaries greyish with a faint olive tinge; basal area suffused with fuscous and traversed by two darker, almost blackish bands; the central fascia fuscous grey, with a median band of the ground-colour, and limited by whitish-edged black lines, the first line wavy and slightly curved, and the second wavy and outwardly produced above the middle; outer marginal area fuscous grey, clouded with darker towards apex and transversely intersected by a wavy whitish line, which is most distinct towards costa. Secondaries pale fuscous grey; basal two thirds suffused with darker and limited by a dusky line which has an obtuse projection at the middle. Fringes: of primaries fuscous grey marked with paler; of secondaries pale fuscous grey marked with darker; preceded by a blackish line in each case. Under surface fuscous, rather paler on secondaries; all the wings have a dusky discal mark and transverse band.

Expanse 22–24 millim.

One male specimen from Che-tou, one from Ta-chien-lu: June and July; and one example (minus head) from Chang-yang, August.

Hab. Central and Western China.

Cidaria nigrozonaria, sp. n.

Primaries have the basal two thirds fuscous brown, traversed by a pale brown subbasal band; the outer edge of the area is limited by an undulated black line; outer third pale umber-brown traversed by two sinuous brown lines, the outer rather indistinct; apical patch fuscous brown, powdered with grey and marked with black. Secondaries fuscous grey, marked with paler on abdominal area towards anal angle. Fringes pale brown, marked with darker and preceded by a blackish line. Under surface fuscous grey, traversed by darker lines and bands; discal dot on each wing black; fringes umber-brown marked with darker at the ends of the nervules.

Expanse 24–26 millim.

Six male specimens and five females from Oiwake and Yokohama in Pryer's collection.

Hab. Japan.

Cidaria quadrifasciaria.

Phal. Geometra quadrifasciaria, Clerck, Icon. pl. vi. fig. 4; Linn. Faun. Suec. 329.

Coremia quadrifasciaria, Guen. *Phal.* ii. p. 417.

Xanthorhoe quadrifasciaria, Meyrick, *Trans. Ent. Soc. Lond.* 1892, p. 77.

Scotosia ignobilis, Butl. *Trans. Ent. Soc.* 1881, p. 423.

There were specimens from Yokohama and Yesso in Pryer's collection. I captured the species at Hakodate in August.

Some of the specimens are much suffused, others agree with the type of "*S.* *ignobilis*, Butl., in the National Collection at South Kensington.

Distribution. Europe; Altai; Eastern Siberia; Amur; Japan; Yesso.

Cidaria dimidiaria.

Cidaria dimidiaria, Motsch. *Bull. de l'Acad.* 1866, i. p. 197.

A nice series in Pryer's collection. I took the species at Tsuruga and Fushiki in July; and my native collector obtained it in the island of Kiushiu.

Hab. Japan; Kiushiu.

The Kiushiu specimens are smaller than the type and paler in colour.

Cidaria hortulanaria, Græser, from Amurland, appears to be very near to, if it is not identical with, this species.

Cidaria abraxina.

Melanippe abraxina, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 443 (1879).

A series from Nikko and Yesso in Pryer's collection.

My native collector obtained one female specimen at Hakodate in June.

One of the males, of which sex there are but two examples in the series, is without the central band on each wing, but the discal spot remains.

Hab. Japan and Yesso.

Cidaria fuscaria, sp. n.

Fuscous grey. Primaries have a darker basal patch, its outer edge almost straight, and a blackish central fascia, the inner edge of which is curved, and the outer lobed about the middle; beyond the fascia there are traces of one or two pale waved transverse lines. Secondaries have traces of pale transverse central lines, most distinct on abdominal margin. Under surface fuscous grey, paler on outer marginal area of all the wings.

Expanse 40 millim.

One male specimen from Ta-chien-lu, Western China: June.

Cidaria (?) *fractistriga*.

Epifidonia fractistriga, Alph. Rom. sur Lép. vi. p. 65, pl. iii. fig. 7 (1892).

The specimen (a worn female) taken at Ou-pin in the Province of Kan-sou in July, and referred by Alphéraky to *Epifidonia*, Butl., appears, according to the figure, to agree better with *Cidaria*.

Genus LARENTIA.

(Treit.; Hampson, Fauna Brit. Ind., Moths, iii. p. 367 (1895).)

Larentia plurilinearis, sp. n.

Pale grey traversed by several darker wavy lines, the space between the third and seventh lines is darker and represents a central fascia; the outer margin is bordered with darker. Secondaries have the basal half suffused with

darker. The nervules on all the wings are marked with black and whitish. Fringes concolorous with the wings, preceded by an interrupted blackish line. Under surface smoky grey, the basal area of primaries limited by a blackish, slightly elbowed line, and edged with pale grey; the central area of the secondaries traversed by three dusky lines, and there are traces of a fourth line on the submarginal area.

Expanse 43 millim.

Two male specimens from Ni-tou, July.

Hab. Western China.

Larentia lakearia.

Eubolia lakearia, Oberth. Etud. d'Entom. xviii. p. 40, pl. iv. fig. 58, ♂, pl. iii. fig. 54, ♀ (1893).

One male specimen from Pu-tsu-fong taken in June or July. Oberthür's types were from Tâ-Tsien-Loû.

Hab. Western China.

Larentia pendearia.

Anticlea pendearia, Oberth. Etud. d'Entom. xviii. p. 39, pl. v. fig. 69 (1893).

Cidaria moupinata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 314, pl. vii. fig. 19.

Oberthür's type was from Ta-chien-lu. I have specimens from the same locality and also from Omei-shan, Ni-tou, and Che-tou. Both sexes are represented. The species occurs in June and July. Poujade records a female example from Moupin.

Hab. Western China.

Larentia grataria.

Anticlea grataria, Leech, Entom., Suppl. p. 52 (May 1891).

Several specimens in Pryer's collection.

I took the species at Nikko in September, and at Oiwake in October.

Hab. Japan.

Larentia albigirata.

Cidaria albigirata, Kollar, Hüg. Kasch. iv. p. 489 (1848).

Cidaria jameza, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 452 (1878); Ill. Typ. Lep. Het. iii. p. 58, pl. lv. fig. 9 (1879).

Larentia albigirata, Hampson, Fauna Brit. Ind., Moths, iii. p. 367 (1895).

Butler's type of *jameza* was from Hakodate. There were no specimens in Pryer's collection, and I have not received any from Japan.

Distribution. N. W. Himalayas (*Hampson*); Japan (*Butler*).

Larentia suffumata.

Geometra suffumata, Hübn. Geom. fig. 306.

Eustroma suffumata, Hübn. Verz. Schmett. p. 335.

Cidaria suffumata, Treit. Schmett. vi. 2, p. 192; Guen. Phal. ii. p. 468.

Hydriomena suffumata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Cidaria minna, Butl. Trans. Ent. Soc. 1881, p. 424.

Several specimens from Yokohama and Yesso in Pryer's collection. Also recorded from Tokio.

Cidaria minna, Butl., is most certainly a small form of *C. suffumata*. One of my Japanese specimens measures only 24 millim. in expanse.

The species is common in several localities in Western China.

Distribution. Europe; Altai; Japan; Yesso; Western China.

Larentia nitidaria, sp. n.

Male.—Primaries silvery grey, with a dark chocolate-brown basal patch limited by a curved white line, and a dark chocolate-brown central fascia edged with white, which is broad on the costa but narrow from middle to inner margin; this fascia is apparently broken into three parts, comprising a large triangular costal portion enclosing discal spot, a small median spot, and an upright blotch on inner margin; on the apical area there is a large chocolate-brown patch, which is intersected by a wavy oblique white line extending from apex to the central fascia, which it penetrates for a short distance; submarginal line white, most distinctly seen on the apical patch referred to; there is a reddish-brown shade on the middle of outer marginal area, and the space between the basal area and the central fascia is clouded with blackish. Secondaries grey, suffused with brownish on basal area, and traversed by three pale central lines and a submarginal line, the latter wavy. Fringes of primaries dark grey and of secondaries pale grey. Under surface: primaries fuliginous, with indications of a dark central line agreeing with the outer edge of the fascia of the upperside and a white macular submarginal line; secondaries greyish, with darker central line and discal spot. Antennæ slightly ciliated.

Female.—Similar to the male, but the secondaries appear more like the primaries in colour, that is silvery grey. On the under surface the dark transverse lines are edged with whitish, and there are indications of other whitish wavy lines on the secondaries.

Expanse 40 millim.

One example of each sex from Pu-tsu-fong, June.

Hab. Western China.

Larentia fractifasciaria, sp. n. *pl. VIII, fig. 2*

Primaries pearly grey, blackish at the base; there is a large black blotch on the costa, this is contracted in the middle and edged with whitish, whilst from its lower end there is a slight projection towards a small upright wedge-shaped spot on the inner margin, the two marks appear to represent the ends of a central band; submarginal line wavy, whitish, with a blackish cloud-like internal edging. Secondaries whiter than the primaries, with a faint dusky central line. Fringes greyish, dotted at the extremities of the nervules with black, and there are two similar black dots on primaries between the apex and the submarginal line. Under surface smoky grey, darker on basal, outer, and costal areas of primaries; the costal blotch faintly reproduced; secondaries rather paler, traversed by faint, dusky, central, and submarginal bands.

Expanse 32 millim.

One male specimen from the plateau to the north-west of Ta-chien-lu.

Hab. Western China.

Larentia latifusata.

Melanippe latifusata, Walk. Cat. Lep. Het. xxv. p. 1298.

Cidaria nemata, Feld. Reis. Nov. pl. cxxxii. fig. 32 (1875).

Larentia latifusata, Hampson, Fauna Brit. Ind., Moths, iii. p. 370 (1895).

Occurs at Moupin, Pu-tsu-fong, Che-tou, Chow-pin-sa, Omei-shan, Chia-ting-fu, Wa-shan, and the Province of How-Kow: June and July.

I have also received the species from Sultanpore, Northwest Himalayas.

Distribution. Murree; Dalhousie (*Hampson*); Kulu; Western China.

Larentia torpidaria, sp. n.

Male.—Primaries whitish; basal two thirds greyish, limited outwardly by a darker grey irregular fascia, broadest towards costa and enclosing the black discal spot; submarginal line of the ground-colour, wavy, preceded by brownish clouds towards costa and inner margin, the area beyond this line is suffused with greyish. Secondaries whitish grey, rather darker on outer margin. Fringes whitish grey, preceded by an interrupted blackish line. Under surface of primaries fuliginous grey, with a small pale patch beyond middle of costa; of secondaries whitish powdered with fuliginous grey,

this powdering is thinner on the inner and marginal portions of the outer half of the wing, thus giving the appearance of central and marginal bands.

Female.—Similar to the male, but the fascia of primaries is hardly darker than other portions of basal two thirds.

One example of each sex from Moupin, June.

Hab. Western China.

Larentia rotundaria, sp. n.

Outer margins of all the wings have a very rounded appearance. Primaries have the basal three fourths dark grey, traversed by wavy darker lines, and divided towards the base of the wing by a dark-edged, narrow, pale grey band, the outer edge of which has an angular projection below the middle; the outer limit of this dark area is undulated, conspicuously lobed below the middle, and edged with white on the costa; the outer marginal area is silvery grey, clouded with dark grey exteriorly; there is a short oblique blackish streak from the apex, and the submarginal line is represented by a series of white marks on costa and a series of white dots to inner margin. Secondaries smoky silvery grey. Fringes dark grey. Under surface smoky grey: primaries have an abbreviated white line, shaded with dusky, from costa, and a macular white submarginal line; secondaries have a dusky wavy central line and an interrupted white submarginal line.

Expanse 40 millim.

One male specimen from Moupin, June.

Hab. Western China.

Larentia debilitata.

Cidaria (?) *debilitata*, Leech, Entom., Suppl. p. 52 (May 1891).

One female specimen, from Gifu, in Pryer's collection.

Hab. Japan.

Larentia badiata.

Geometra badiata, Hübn. Geom. fig. 291.

Amœbe badiata, Hübn. Verz. Schmett. p. 333.

Anticlea badiata, Guen. Phal. ii. p. 407.

Hydriomena badiata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

A few specimens, from Gifu, in Pryer's collection.

Distribution. Europe; Altai; Japan.

The central fascia of primaries and the secondaries are whiter in Japanese specimens than in any example in my European series.

Larentia amelia.

Lozogramma amelia, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 406 (1878);
Ill. Typ. Lep. Het. iii. p. 46, pl. lii. fig. 6 (1879).

There was a nice series from Yokohama in Pryer's collection, and I received a female specimen from Ichang, taken in April.

Distribution. Japan; Central China.

Allied to *L. malvata*, Rbr., a European species which Meyrick places in *Hydriomena* (Trans. Ent. Soc. Lond. 1892, p. 72).

Larentia consanguinea.

Anticlea consanguinea, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 449
(1878); Ill. Typ. Lep. Het. iii. p. 56, pl. lv. fig. 1 (1879).

There were specimens from Yokohama in Pryer's collection.
Hab. Japan.

Larentia umbrifera.

Anticlea umbrifera, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 444 (1879).

Specimens from Yokohama and Oiwake in Pryer's collection. I took the species at Gensan in July, and I received one example from Chang-yang taken in July.

Distribution. Japan; Corea; Central China.

Larentia Taczanowskiiaria.

Anticlea Taczanowskiiaria, Oberth. Etud. d'Entom. v. p. 54, pl. ix.
fig. 8 (1880).

Cidaria pervagata, Christ. Bull. Mosc. 1880, p. 78.

Cidaria Taczanowskiiaria, Græser, Berl. ent. Zeit. 1888, p. 413.

There was a nice series from Yesso in Pryer's collection, and my native collector met with the species in Hakodate in June.

Distribution. Amur; Askold; Yesso.

Larentia erebearia, sp. n.

Primaries slaty grey, traversed by numerous blackish lines, three of which are enclosed between two thicker black lines and represent a central fascia; there is also a thicker black line near the base and an interrupted black dash from apex; the latter has a whitish dot on it and there is a similar dot above it on the costa. Secondaries smoky grey, with a brownish tinge within the waved dusky central line; a short slaty-grey streak from abdominal margin. Under surface fuliginous: primaries powdered with slaty grey on costal and

apical areas, and traversed by three or four darker lines beyond the middle; secondaries powdered with grey and traversed beyond the blackish discal spot by several wavy grey lines, the most conspicuous of which is a double one beyond the middle. Body blackish, tip of abdomen in the male brown.

Expanse 36 millim.

Three male specimens and one female from Pu-tsu-fong, June.

Hab. Western China.

Larentia stellata.

Glaucopteryx stellata, Warren, Proc. Zool. Soc. Lond. 1893, p. 367.

Larentia adjouaria, Oberth. Etud. d'Entom. xviii. p. 36, pl. iv. fig. 59 (1893).

Larentia stellata, Hampson, Fauna Brit. Ind., Moths, iii. p. 369 (1895).

Two specimens from Ta-chien-lu, taken in June.

Distribution. Sikhim (*Hampson*); Western China.

Larentia naparia.

Venusia naparia, Oberth. Etud. d'Entom. xviii. p. 30, pl. iii. fig. 36 (1893).

I have received specimens from Ta-chien-lu, Moupin, and Omei-shan, taken in May, June, and July; also from Chang-yang, taken in May, June, and August.

I took the species at Ningpo in April.

Hab. Central, Western, and North-eastern China.

The specimens from Omei-shan and Ningpo are suffused with fuscous, especially on the under surface.

Larentia confusaria, sp. n.

Greyish white. Basal half of primaries suffused with dark grey and traversed by two diffuse lines of the ground-colour; beyond the middle there is a serrated whitish line clouded inwardly with dark grey; outer margin clouded with dark grey, traversed by a whitish wavy submarginal line. Secondaries whitish, with traces of dark transverse lines on abdominal area and nervules beyond. Fringes dark grey on primaries, paler on secondaries, preceded in all cases by a blackish line. Under surface smoky grey: primaries with a pale band beyond the middle.

Expanse 42 millim.

Two male specimens from Pu-tsu-fong, June.

Hab. Western China.

Larentia nigrifasciaria, sp. n.

Whitish grey, venation blackish. Primaries have a small blackish basal patch, the outer edge of which is quite straight, and a broad blackish central fascia, both edges are undulated, but most prominently so exteriorly, in the centre of the costal portion there is a diffuse spot of the ground-colour abutting on the black discal spot, and there are traces of similar pale spots below; the outer marginal area is clouded and suffused with blackish, and is traversed by a pale wavy submarginal line, which is whitish near costa and inwardly edged with blackish throughout, from this edging black streaks are projected along the nervules. Secondaries have the basal area and outer marginal border darker; the venation also is dark on basal area. Fringes grey, preceded by an interrupted blackish line. Under surface pale grey: basal two thirds of primaries, also apical area, and broad central fascia of secondaries smoky grey; submarginal line of primaries whitish towards costa, darker towards inner margin; beyond the fascia of secondaries the venation is marked with blackish.

Expanse 40 millim.

One male specimen from Pu-tsu-fong, June.

Hab. Western China.

Larentia nudaria, sp. n.

Female.—Primaries grey, tinged with ochreous on outer marginal area; median nervure and branches, also the submedian nervure, marked with black; basal patch and central fascia darker grey, median area of the costal half of the latter of the ground-colour, enclosing a black discal spot; the edges of the fascia are outlined by sinuous black lines, the external one, edged outwardly with white, is preceded by a wavy dusky line; submarginal line white, wavy, expanding into a spot above inner margin; there is a dentated dusky line between the basal patch and inner edge of the fascia, and another between the outer edge of the fascia and the submarginal line. Secondaries whitish grey, suffused with darker on basal area, and traversed by three dark grey lines, the outer two marked with black on the neuration; outer marginal area dark grey, traversed by a whitish submarginal line. Fringes grey, marked with darker on the primaries, and preceded by a black line. Under surface: primaries fuliginous, marked with whitish grey on costa; beyond the middle there is a whitish-grey band edged with blackish; submarginal line whitish, interrupted towards

costa : secondaries whitish grey, traversed by three darker lines ; all the wings have a black discal spot.

Expanse 51 millim.

One female specimen from Ta-chien-lu, June.

Hab. Western China.

Larentia albiplaga.

Scotosia albiplaga, Oberth. *Etud. d'Entom.* xi. p. 34, pl. vi. fig. 42 (1886).

Scotosia nigralbata, Warren, *Proc. Zool. Soc. Lond.* 1888, p. 327.

Larentia nigralbata, Hampson, *Fauna Brit. Ind., Moths*, iii. p. 370 (1895).

This species occurred in July and August at most of the localities in Western China visited by my collectors, and also at How-Kow, Thibet.

Distribution. Thundiáni ; Punjab ; Sikhim (*Hampson*) ; Kashmir ; Western China ; Thibet.

Larentia perplexaria, sp. n.

Primaries pale ochreous grey ; subbasal band oblique, blackish ; central fascia not well defined and hardly darker than the ground-colour, except on inner margin where it is blackish, its inner edge is indicated by a wavy oblique line, and its outer edge by an angulated and wavy line, the latter is followed by a wavy whitish band ; the outer marginal area is rather darker grey, and is traversed by a whitish line which is broken up into spots, each placed on a black dash towards the costa, where it is joined by an oblique white dash from apex ; before this line there is a blackish spot on the costa. Secondaries whitish, traversed beyond the middle by three dusky wavy lines. All the wings have a blackish discal spot. Fringes dark grey on the primaries and whitish marked with dark grey on the secondaries. Under surface : primaries smoky, beyond the middle there is a short diffuse white band from the costa ; submarginal line white and rather wavy, united towards costa by an oblique white dash from apex : secondaries as above.

Expanse 32 millim.

One male specimen from Ta-chien-lu, May.

Hab. Western China.

Larentia variaria, sp. n.

Primaries leaden grey ; basal patch black, outer edge curved ; central fascia black, its inner edge bidentate, and its outer slightly lobed about middle ; beyond there is a small black spot on costa, this is outwardly edged with white, and

from it a black waved line, also edged with white, runs to inner margin; submarginal line white and very fine, only distinct towards costa, where it is preceded by an abbreviated black band, and towards inner margin, where it is preceded by a brownish cloud. Secondaries whitish grey, suffused with darker on basal area; discal dot fuscous; central line dusky, slightly waved. Fringes: grey marked with darker on primaries; pale grey marked with darker on secondaries. Under surface fuscous grey: primaries have two dusky transverse lines, edged with whitish, beyond the middle; secondaries have a black discal spot and blackish central line, there are also indications of a dusky line beyond.

Expanse 24 millim.

Three male specimens from Pu-tsu-fong and one from Che-tou, July.

Hab. Western China.

One of the specimens from Pu-tsu-fong is tinged with brownish on primaries. In the Che-tou example the basal patch and the central fascia on upper surface of primaries are not clearly defined; on the under surface the only markings on primaries are some white spots towards costa, representing the submarginal line, and some other white spots above the middle of the inner margin of secondaries.

Larentia inconspicuaris, sp. n.

Primaries grey, with darker basal patch, subbasal, central, and interrupted outer bands; all these darker markings are limited by fine wavy black lines; submarginal line represented by whitish dots followed by black ones, most distinct towards costa. Secondaries greyish, with paler central band. Fringes pale grey, chequered with darker. Under surface grey, suffused with darker, glossy; the primaries are marked with whitish on the costa and the secondaries have a pale central band.

Expanse 24–26 millim.

Two male specimens from Ta-chien-lu, July.

Hab. Western China.

Larentia tæniata.

Emmelesia tæniata, Steph. Ill. Brit. Ent., Haust. iii. p. 299, pl. xxxii. fig. 3 (1829).

Hydriomena tæniata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Coremia fulvida, Butl. Trans. Ent. Soc. Lond. 1881, p. 422.

There were a few examples from Oiwake in Pryer's collection; I obtained specimens at Nemoro in August, and

my native collector met with the species in the island of Kiushiu. Two specimens, which appear to be referable to this species, were received from Pu-tsu-fong and Che-tou; they were taken in July.

In the Japanese specimens the central band of primaries is rather broader than in European examples, and the space between this band and the basal patch is deeply suffused with fuliginous.

Distribution. Europe; Japan; Yesso; Kiushiu; Western China.

Larentia punctilinearia, sp. n.

Primaries greyish brown; basal patch dark brown, becoming blackish on its outer edge, which is slightly dentate; median band dark brown, its inner edge bordered by a dentate whitish line, and dotted with black on the nervules, its outer edge diffuse; beyond the middle there is a whitish line dotted with black on the nervules, and this appears to be the outer limit of the median band; submedian band brown, with ray-like projections in the direction of the fringes, these projections are traversed by a whitish line, and the band is interrupted about the middle by a pale brown patch similar in tint to the space between the basal patch and median band. Secondaries fuscous brown. Fringes pale brown, marked with darker. Under surface brown, with few distinct markings on primaries, but the secondaries have a blackish discal spot and an indented line beyond the middle.

Expanse 32 millim.

One female from Japan in Pryer's collection.

Allied to *L. tæniata*, Steph.

Larentia promiscuaria, sp. n.

Primaries pale greyish brown; basal patch darker, limited by a slightly indented blackish band; central fascia broadly blackish, the edges not well defined; between the fascia and basal patch there is a dusky shade; submarginal line whitish, wavy, bordered inwardly by an interrupted blackish band; discal spot black, elongate; fringes dark grey marked with paler, and preceded by an interrupted blackish line. Secondaries whitish; there is a dusky transverse shade beyond the middle, and the fringes, which are of the ground-colour, are preceded by an interrupted blackish line. Under surface whitish: primaries suffused with fuscous, markings of upper surface faintly indicated; secondaries powdered

with fuscous, there are two dusky transverse lines and the discal dot is blackish.

Expanse 25-32 millim.

Four specimens from Chang-yang taken in June, and two from Chow-piu-sa taken in July. Both sexes are represented.

Hab. Central and Western China.

Larentia schistacea.

Anticlea schistacea, Moore, Lep. Atk. p. 273 (1887).

Larentia schistacea, Hampson, Fauna Brit. Ind., Moths, ii. p. 376 (1895).

One male specimen from Omei-shan and one from Pu-tsu-fong: June.

Distribution. Dalhousie; Sikhim (*Hampson*); Western China.

Larentia sordidata.

Geometra sordidata, Fabr. Ent. Syst. 185.

Geometra elutata, Hübn. Geom. fig. 224.

Ypsipetes elutata, Guen. Phal. ii. p. 378.

Hydriomena elutata, Hübn. Verz. Schmett. p. 322; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

Several specimens from Fujisan, Nikko, and Oiwake in Pryer's collection. I have received the species from Omei-shan, Ni-tou, and Pu-tsu-fong, taken in July.

Distribution. Europe; Altai; Amur; Japan; Western China.

Larentia neurbouaria.

Larentia neurbouaria, Oberth. Etud. d'Entom. xviii. p. 36, pl. v. fig. 77 (1893).

I received two male specimens from Pu-tsu-fong, where they were taken in June. Oberthür's type was from Tâ-Tsien-Lôû.

Hab. Western China.

Larentia tripunctaria, sp. n.

Primaries blackish brown, basal area darker and limited by an indistinct white line; a white blotch on costal area and another below it on inner marginal area represent a central fascia; on the outer marginal area there is a third white blotch; the outer third of the wing is limited inwardly by a sinuous white line followed by a diffuse russet band. Secondaries whitish, basal two thirds suffused with dusky and limited by a blackish wavy line. Fringes agree with the wings in colour. Under surface greyish, blotched with paler on the

middle of the costal and outer marginal areas of primaries; the secondaries have two transverse dotted lines, and the primaries one such line.

Expanse 40 millim.

Two male specimens from Pu-tsu-fong, June.

Hab. Western China.

In the second example the white blotches representing the central fascia are much smaller, especially the lower one, than in the specimen described.

Larentia (?) intersectaria, sp. n.

White. Primaries have a black patch at the base containing a yellow spot on the inner margin, the outer edge of this patch is obtusely angled and connected with a small oblong spot at the angle; central fascia black, widely interrupted below the middle; submarginal band represented by a large black spot on the costa and a double series of lunules below to the inner margin; outer margin broadly bordered with black, intersected by an oblique macular white line from apex and interrupted below the middle; there are some yellow marks at inner angle. Secondaries tinged with yellow at the base and anal angle, and marked with black or blackish on the abdominal and outer margins. Under surface as above, but the black markings on basal two thirds of primaries are rather obscured.

Expanse 29 millim.

One male specimen from Omei-shan, July.

Hab. Western China.

Larentia costipunctaria, sp. n.

Male with a tuft of hair on the underside of the secondaries placed just beyond the middle of vein 1.

Primaries pale grey, sometimes tinged with ochreous; there are five pairs of indistinct wavy grey transverse lines, the first, third, and fourth commencing in blackish spots on costa and the fifth from the inner edge of a large blackish apical cloud; submarginal line whitish, but only distinctly traceable towards costa and inner margin. Secondaries white, tinged with ochreous on abdominal area and bordered with dark grey on outer margin; submarginal line wavy, pale; central line dusky, wavy, but indistinct. Fringes dark grey, preceded by an interrupted black line. Under surface white; primaries slightly suffused with dusky on basal half; beyond the black discal spot there are indications of a transverse band, but only distinct on the costa; apical

cloud as above; secondaries have a black discal spot and a faint dusky wavy central line, marked with black on the nervules; abdominal area as above; fringes whitish grey.

Expanse 38–41 millim.

Several specimens, including both sexes, from Ta-chien-lu, Moupin, Pu-tsu-fong, Che-tou, and How-Kow: June and July.

Hab. Western China and Thibet.

Larentia moniliferaria.

Trichopteura moniliferaria, Oberth. *Etud. d'Entom.* xviii. p. 41, pl. v. fig. 76 (1893).

Occurred in most localities in Western China, June and July. Oberthür's type was taken at Tâ-Tsien-Loû (Ta-chien-lu).

Hab. Western China.

Larentia truncata.

Phalæna truncata, Hufn. *Berl. Mag.* iv. p. 602 (1769).

Geometra russata, Hübn. *Geom.* fig. 305.

Hydriomena truncata, Meyrick, *Trans. Ent. Soc. Lond.* 1892, p. 72.

Cidaria calamistrata, Moore, *Proc. Zool. Soc. Lond.* 1867, p. 662, pl. xxxiii. fig. 6.

Cidaria cinereata, Moore, *l. c.*

Cidaria corussaria, Oberth. *Etud. d'Entom.* v. p. 55, pl. ix. fig. 7 (1880).

Larentia truncata (part.), Hampson, *Fauna Brit. Ind.*, Moths, iii. p. 378 (1895).

There were a few specimens from Yokohama in Pryer's collection. I obtained the species at Nemoro and Shikotan in August, at Nikko in September, and at Oiwake in October. Specimens were received from Moupin and Che-tou, taken in June, and also from the island of Kiushiu.

All the Japanese specimens of *L. truncata* in my collection are modifications of the type form varying in two directions—one graduating towards *cinereata* (*corussaria*), and the other leads up to a variety in which the basal third of the primaries is blackish brown intersected by a dingy rust-coloured band; the central fascia is almost white, the apical patch is unusually large and agrees with the base in colour. The form last referred to is from Oiwake, Yokohama, Kiushiu, and Moupin. The *cinereata* form is represented by specimens from Nemoro, Shikotan, Kiushiu, and Che-tou.

Distribution. Europe; Altai; Amur; East Siberia; Askold; Japan; Kiushiu; Western China.

*Larentia immanata.**Geometra immanata*, Haw. Lep. Brit. p. 323.*Geometra marmorata*, Haw. l. c.*Cidaria immanata*, var. *thingvallata*, Staud. Cat. p. 183.*Larentia truncata* (part.), Hampson, Fauna Brit. Ind., Moths, iii. p. 378 (1895).

Several specimens from Yokohama in Pryer's collection. I captured examples at Nemoro in the beginning of August, and have received specimens taken in June and July from Chang-yang, Pu-tsu-fong, Che-tou, and the province of How-Kow.

The typical and *marmorata* forms both occur in Japan and China.

Among the Nemoro specimens are two fine varieties; one of these is a very pale modification of the *marmorata* form and the other approaches var. *thingvallata*.

Distribution. Europe; Japan; Yesso; Central and Western China.

Larentia bimacularia, sp. n.

Primaries olive-brown, darker on apical and outer marginal area, and transversely clouded with darker on the basal half of the wing; there is a black patch at the base and an oblong black spot on costa, the latter is connected with a black discal spot and is preceded and followed by double brown lines, the enclosed space paler throughout, but light ochreous on costa; submarginal line pale ochreous from costa to about the middle of outer margin, where it disappears, but is represented by a V-shaped mark before inner angle. Secondaries whitish brown, fuscous grey at the base, and traversed by an oblique fuscous-grey band and two wavy lines of the same colour; on the abdominal margin the space between the lines is pale ochreous; outer margin bordered with fuscous grey, intersected by a pale ochreous curved line, which is angulated above anal angle. Fringes greyish, chequered with blackish. Under surface fuscous grey, marked with darker on the nervules; the primaries are marked on the costa with blackish; submarginal line pale, curved, angulated above inner angle, and bordered inwardly with blackish towards costa; the area beyond the submarginal line is slightly tinged with brownish: all the wings have a blackish discal spot.

Expanse 34-36 millim.

Four female specimens from Ta-chien-lu and one from Pu-tsu-fong: June.

Hab. Western China.

Larentia costinotaria, sp. n. Pl. VIII. fig. 14

Primaries pale brownish grey; basal patch black, indented on its outer edge and limited by a pale ochreous line; there is a black oblong mark on the costa—this is outlined in pale ochreous and contracted in the middle; between the black markings there is a dark grey transverse shade from costa to inner margin and some clouds of the same colour below the costal mark; the outer margin is dark grey, indented in the middle; submarginal line represented by a whitish line on the costa, and another towards inner angle. Secondaries pale grey; transverse central line rather darker, edged outwardly with whitish; there are indications of a pale submarginal line. Fringes grey, marked with darker. Under surface fuscous grey; all the wings have a central and a submarginal dusky line, edged with whitish; the central line of primaries is acutely angled.

Expanse 32 millim.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

Allied to *L. sagittata*, Fabr.

Larentia variata.

Geometra variata, Schiff. Wien. Verz. p. 110; Hübn. Geom. fig. 293.

Geometra obeliscata, Hübn. Geom. fig. 296.

Hydriomena variata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

There were specimens from Gifu in Pryer's collection. I took the species in April at Ningpo and Loochou and in June at Gensan. All the examples are modifications of the *obeliscata* form of the species.

Distribution. Europe; Altai; E. Siberia; Japan; Corea; N.E. China.

Larentia comis.

Larentia comis, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 443 (1879); Hampson, Fauna Brit. Ind., Moths, iii. p. 379 (1895).

There were three specimens in Pryer's collection, one of which was from Oiwake, and I obtained two examples in the same locality in the month of October.

Distribution. Sikhim (*Hampson*); Japan.

Similar in general appearance to some European examples of *L. variata*, but the antennæ are shortly bipectinate.

The type (in the National Collection) is in poor condition.

Genus OPORABIA.

(Stephens, Ill. Brit. Ent., Haust. iii. p. 273 (1829).)

Oporabia (?) *chiachiarina*.

Psyra chiachiarina, Oberth. Etud. d'Entom. xviii. p. 27, pl. v. fig. 64 (1893).

I have not seen an example of this species, of which Oberthür records two specimens from Tâ-Tsien-Loû (Ta-chien-lu); but, judging from the figure, I should say that it is not a *Psyra*, or even referable to the *Boarmiinae*.

Hab. Western China.

Oporabia (?) *productaria*, sp. n.

Primaries pale grey, with a darker basal patch, central fascia, and an ill-defined shade between; the neuration is still darker and is dotted with whitish, most distinctly beyond the central fascia; submarginal line whitish, wavy. Secondaries: outer angle much produced; whitish grey, suffused with darker on abdominal area; there is a dusky band on outer marginal area traversed by a wavy line of the ground-colour. Fringes agree in colour with the wings and are preceded by an interrupted blackish line. Under surface of primaries fuliginous grey and of secondaries whitish grey finely dusted with darker; all the wings have a blackish discal dot and the secondaries have an obscure, undulated, dusky central line. Antennæ bipectinated.

Expanse 48 millim.

One male specimen from Ta-chien-lu, May or June.

Hab. Western China.

Oporabia nexifasciata.

Oporabia nexifasciata, Butl. Trans. Ent. Soc. 1881, p. 420.

Eight specimens from Yokohama in Pryer's collection.

Very closely allied to *O. dilutata*, Bork., but the antennæ are more strongly fasciculated and the first transverse band of primaries is straight.

Meyrick places *dilutata* in *Asthena* (Trans. Ent. Soc. Lond. 1892, p. 74).

Hab. Japan.

Oporabia japonaria.

Oporabia japonaria, Leech, Entom., Suppl. p. 48 (May 1891).

A long and variable series from Yokohama in Pryer's collection.

Hab. Japan.

Genus PHOTOSCOTOSIA.

Trichopleura, Staud. Stett. ent. Zeit. 1882, p. 68 (præocc.).

Photoscotosia, Warren, Proc. Zool. Soc. Lond. 1883, p. 328.

Lasiogma, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 70.

Photoscotosia fasciaria, sp. n. *Pl. VII, fig. 9*

Primaries pale grey-brown, traversed by several diffuse dark grey wavy lines; basal patch dark grey; central fascia chocolate-brown, the inner edge slightly indented about the middle and the outer edge angled above the middle and bilobed below it; there are some blackish clouds on the outer margin; the costal portions of the transverse lines are darker, and some blackish dashes precede the marginal line. Secondaries orange, marked with fuscous grey on abdominal area and on outer margin from anal angle to third median nervule. Fringes fuscous, except towards outer angle of secondaries, where they are orange, preceded on all the wings by an interrupted black line. Under surface: primaries pale ochreous, suffused with blackish on basal portion, which is limited by an elbowed blackish band; the apical area is clouded with blackish: secondaries yellowish ochreous, powdered with fuscous; abdominal area greyish; discal spot linear, blackish; central band dusky, almost straight from costa to middle, thence turns sharply to abdominal margin.

Expanse 52-54 millim.

Two male specimens and one female from How-Kow: July.

Hab. Thibet.

Photoscotosia amplicata.

Cidaria amplicata, Walk. Cat. Lep. Het. xxv. p. 1404 (1862).

Trichopleura amplicata, Alph. Rom. sur Léop. vi. p. 76, pl. iii. figs. 10 a, b, ♂ (1892).

Trichopleura Dejeani, Oberth. Etud. d'Entom. xviii. p. 40, pl. iv. fig. 51 (1893).

Photoscotosia amplicata, Hampson, Fauna Brit. Ind., Moths, iii. p. 382 (1895).

Occurs at Omei-shan, Ni-tou, Pu-tsu-fong, and How-Kow: June and July.

In Chinese specimens the white patch on primaries varies to much the same extent that it does in my series from the N.W. Himalayas, but the secondaries are usually much less suffused with fuscous. One form, however, from Omei-shan seems to merit a varietal name.

Var. *rivularia*, nov.

General coloration brighter and more variegated; outer transverse line of primaries very conspicuous.

Two male specimens and one female from Omei-shan: July.
Distribution. North-west Himalayas; Sikhim (*Hampson*);
 Western China; Thibet.

Photoscotosia penguionaria.

Trichopleura penguionaria, Oberth. *Etud. d'Entom.* xviii. p. 42, pl. v.
 fig. 70 (1893).

Three specimens from How-Kow, Thibet: July.

Oberthür's type was from Tâ-Tsien-Loû.

Hab. Western China and Thibet.

Photoscotosia bicolor.

Cidaria bicolor, Moore, *Lep. Atk.* p. 278 (1887).

Larentia tonchignearia, Oberth. *Etud. d'Entom.* xviii. p. 38, pl. v.
 figs. 67 ♂, 66 ♀ (1893).

Photoscotosia bicolor, *Hampson*, *Fauna Brit. Ind., Moths*, iii. p. 382
 (1895).

Obtained in June and July in most of the localities in
 Western China visited by my collectors, and also at How-Kow
 in Thibet. Oberthür's type was from Tâ-Tsien-Loû.

Distribution. Sikhim (*Hampson*); Kulu, North-west
 Himalayas; Western China; Thibet.

Photoscotosia albomacularia, sp. n.

Primaries fuliginous grey, with several indistinct darker
 transverse lines; central fascia blackish, with a large diffuse
 white blotch on its costal portion; submarginal line whitish,
 indistinct, and interrupted. Secondaries blackish, discal area
 white. Fringes blackish, slightly marked with white on
 secondaries. Under surface blackish; discal area of primaries
 white, apices whitish; discal and abdominal areas of secondaries
 white, the latter tinged with greyish; discal spot black,
 linear.

Expanse 46 millim.

One male example from Omei-shan, July.

Hab. Western China.

Closely allied to *P. bicolor*, Moore, but the band on secondaries is much broader and the fringes are black.

Photoscotosia undulosa.

Trichopleura undulosa, *Alph. Stett. ent. Zeit.* 1888, p. 69; *Rom. sur*
Lép. vi. p. 78, pl. iii. fig. 9, ♀ (1892); Oberth. *Etud. d'Entom.*
 xviii. p. 40, pl. iv. fig. 56, ♂ (1893).

Photoscotosia undulosa, *Hampson*, *Fauna Brit. Ind., Moths*, iii. p. 382
 (1895).

One specimen from Omei-shan, July.

Alphéraky's type (a female) was from the province of Szechuen, and that of Oberthür (a male) from Tâ-Tsien-Loû.

Distribution. Thibet ; Sikhim (*Hampson*) ; Western China.

Photoscotosia pallifasciaria, sp. n.

Primaries brown ; basal fourth limited by a pale-edged dark band ; about the middle of the wing there is a broad whitish-brown band, edged inwardly by a narrow undulated dark brown band, and outwardly by a dark brown wavy line, which is slightly indented below costa and shaded inwardly with the ground-colour ; submarginal line pale, arched, terminating in an upright blotch on inner margin ; discal spot black, linear. Secondaries smoky grey, paler on costa ; discal spot black, inconspicuous ; central line dusky, wavy, and curved ; submarginal line arched, ochreous brown, extending from anal angle to third median nervule. Fringes dark grey on primaries, paler, inclining to yellowish, on secondaries, preceded on each wing by a dark brown line. Under surface pale whitish brown : primaries suffused with smoky on basal third and on outer marginal area, especially on apical portion, but the apex itself is of the ground-colour ; beyond the middle there is a blackish abbreviated band from costa ; submarginal line as above : secondaries powdered with greyish ; discal spot black, linear ; central line dusky, curved.

Expanse 58 millim.

Two female specimens from Che-tou, July.

Hab. Western China.

Allied to *P. undulosa*, Alph.

Photoscotosia velutina.

Photoscotosia velutina, Warren, Novit. Zool. ii. p. 117 (1895).

Warren's type was from "China." I have specimens of both sexes from Omei-shan, Ta-chien-lu, Ni-tou, and Che-tou, where they were taken in July and August.

Hab. Western China.

Photoscotosia funebris.

Photoscotosia funebris, Warren, Novit. Zool. ii. p. 117 (1895).

Specimens, taken in June and July, were received from Pu-tsu-fong, Omei-shan, Ni-tou, and Che-tou.

Warren's type was from "China."

Hab. Western China.

Photoscotosia rectilinearis, sp. n.

Primaries brown, with a pinkish tinge on central area; basal area darker brown, traversed by a greenish-grey band and limited by an almost straight, inwardly diffuse, velvety-black line; beyond the middle there is a greenish-grey wavy band; this is diffuse outwardly and edged inwardly by an interrupted dentated black line; submarginal line indicated by a greenish-grey spot near costa and another towards inner margin; discal spot black, elongate. Secondaries smoky brown, with faint traces of a wavy central line. Fringes brown, except towards apex of secondaries, where they are yellowish. Under surface similar to that of *P. pallifasciaria*.

Expanse 56 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Photoscotosia atrostrigata.

Scotosia atrostrigata, Brem. Lep. Ost-Sib. p. 87, pl. vii. fig. 16 (1864).

Lasiogma atrostrigata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 71.

Scotosia lucicolens, Butl. Ill. Typ. Lep. Het. ii. p. 54, pl. xxxvii. fig. 10 (1878).

There were several specimens in Pryer's collection. I took the species at Nikko in September and at Oiwake in October. My native collector obtained it on the island of Kiushiu, and I have one specimen from Chang-yang.

Distribution. Eastern Siberia; Japan; Kiushiu; Central China.

Photoscotosia apicinotaria, sp. n.

Male.—Primaries brown; the space between the thin sub-basal black line and the angulated black inner edge of the central fascia, which is paler than the ground-colour, is traversed by wavy blackish lines; the outer edge of the fascia is also black, bidentate, and wavy, but not always well defined; it is preceded by a double brownish line; there is a pale brown spot clouded with darker on costa before apex, and below the spot there is a white dot; discal spot black, linear, connected with the subbasal line. Secondaries fuliginous, whitish on costa; there are indications of a wavy pale brown submarginal line from anal angle to third median nervule, and there is a blackish spot on abdominal margin. Fringes concolorous with the wings, except on upper portion of secondaries, where they are pale brown. Under surface: primaries whitish brown, basal area blackish, apical area fuliginous, the latter enclosing a pale brown triangular spot

on costa towards apex; below this spot there is a dot of the same colour: secondaries whitish brown, powdered with fuliginous, and becoming heavily clouded with fuliginous beyond the wavy central line; discal spot linear.

Female.—Similar to the male, but the exterior outline of the central fascia on primaries is more clearly defined and is bordered with paler towards costa and inner margin; beyond it there are some wavy transverse lines and a white spot towards inner angle; on the secondaries there is a large diffuse orange band extending from costa to third median nervule; the fringes of these wings are tinged with orange towards outer angle. The under surface of primaries is fuliginous, with a broad fulvous central fascia, and of secondaries also fuliginous, tinged on the central area with fulvous.

Expanse, ♂ 54–56, ♀ 58 millim.

Thirteen male specimens and two females from Moupin, Omei-shan, Che-tou, and Ni-tou: June and July.

Hab. Western China.

Photoscotosia propugnataria, sp. n.

Primaries pale olivaceous brown, basal patch and central fascia vinous brown, inner half of central portion paler; the fascia is outlined in black, its interior edge is thrice indented, and there is a black spot in each indentation, the upper one continued to costa; the external edge is wavy and has an obtuse projection about the middle; submarginal line pale, macular below the costa, each spot outwardly edged with black. Secondaries fuscous, whitish grey on costal area, more narrowly towards base; there is an orange cloud at end of the discoidal cell and the fringes on upper half are tinged with the same colour. Under surface very similar to that of *P. fasciaria*, but less ochreous, especially on primaries.

Expanse 54 millim.

One male specimen from Wa-shan: June.

Hab. Western China.

Photoscotosia miniosata.

Scotosia miniosata, Walk. Cat. Lep. Het. xxv. p. 1354 (1862).

Photoscotosia miniosata, Hampson, Fauna Brit. Ind., Moths, iii. p. 380 (1895).

I received this species from Pu-tsu-fong, Che-tou, and from the plateau to the north of Ta-chien-lu.

The specimens do not appear to differ from examples in my collection from the North-west Himalayas.

Distribution. Himalayas; Sylhet; Western China.

Genus CALLABRAXAS.

(Butler, Ann. & Mag. Nat. Hist. (5) vi. p. 226 (1880).)

Callabraxas fabiolaria.*Euchera fabiolaria*, Oberth. Etud. d'Entom. x. p. 35, pl. iii. fig. 3 (1884).

This species was obtained at Chang-yang and Ichang, also in most of the localities in Western China.

Hab. Central and Western China.*C. trigoniplaga*, Hampson (Trans. Ent. Soc. Lond. 1895, p. 312), is very close to, if not identical with, this species.

Genus GANDARITIS.

(Moore, Proc. Zool. Soc. Lond. 1867, p. 660.)

Gandaritis flavata.*Gandaritis flavata*, Moore, Proc. Zool. Soc. Lond. 1867, p. 660; Waterh. Aid, pl. clxxxiv. fig. 7; Hampson, Fauna Brit. Ind., Moths, iii. p. 385 (1895).Var. *sinicaria*, nov. — Basal two thirds of secondaries white, with a diffuse black central band; outer third blackish, intersected by a wavy yellow band and bordered on outer margin with rather darker yellow.

I have received this form of the species from Moupin, Omei-shan, Wa-shan, Chia-ting-fu, and Chang-yang: June and July.

Distribution. Khásis (*Hampson*); North, Central, and Western China.*Gandaritis agnes*.*Euchera agnes*, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 441 (1878); Ill. Typ. Lep. Het. iii. p. 47, pl. lii. fig. 10 (1879).*Hydriomena agnes*, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

There were four male specimens and one female from Yesso in Pryer's collection. My native collector captured a female example at Hakodate in June or July.

Meyrick considers *festinaria*, Christ., from Amurland, to be synonymous with this species.*Hab.* Japan.*Gandaritis maculata*.*Gandaritis maculata*, Swinh. Ann. & Mag. Nat. Hist. (6) xiv. p. 433 (1894).

Several specimens from Ohoyama, Nikko, and Yesso in Pryer's collection.

Hab. Japan and Yesso.

Gandaritis Fixseni.

Cidaria Fixseni, Brem. Lep. Ost-Sib. p. 100, pl. viii. fig. 12 (1864).

Gandaritis Fixseni, Hampson, Fauna Brit. Ind., Moths, iii. p. 385 (1895).

Hydriomena Fixseni, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

A nice series from Ohoyama, Nikko, and Yesso in Pryer's collection. I obtained the species at Hakodate in August.

Distribution. Eastern Siberia; Amur; Japan; Yesso.

Japanese specimens are larger than the Amurland examples in my collection.

Gandaritis flavomacularia, sp. n.

Allied to *G. Fixseni*.

Male.—Fuliginous. Primaries traversed by several fine wavy and angulated lines; these are whitish or yellowish in colour and only distinct on costal and inner margins; there are indications of two whitish bands on the median area, the first represented by an angular dash on costal area, a sagitta mark on the middle, and a small spot on inner margin, the second by a slightly waved dash on costal area and a small double spot on first submedian nervule; submarginal band formed of whitish spots and the marginal band of yellow ones; all these whitish lines and bands are tinged with yellow on the costa. Secondaries have the abdominal area suffused with smoky grey and the outer angle yellow; submarginal and marginal bands composed of yellow spots, the former preceded on costal area by a yellow crescent-shaped mark, representing a central band. A blackish discal spot on all the wings. Fringes fuliginous, those of secondaries yellow at outer margin and opposite each marginal spot. Under surface yellowish: primaries clouded with brownish on basal and outer marginal areas; central double line brownish, elbowed above the middle, and connected with an interrupted submarginal band of the same colour by an oblique darker cloud; a blackish oblique dash extends from apex almost to submarginal band; secondaries whitish grey on abdominal area and clouded and suffused with yellowish on outer marginal area; central line and submarginal band as on primaries, but the former is curved and has an angular projection on its inner edge before abdominal margin.

Female.—Similar to the male, but larger; the white bands on upper surface of the primaries are less interrupted, as also is the central yellow one of secondaries; the under surface is less yellow and heavily clouded with dusky.

Expanse, ♂ 60, ♀ 66 millim.

One example of each sex from Wa-shan: August.

Hab. Western China.

Genus POMASIA.

(Guen. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 387 (1895).)

Pomasia albolinaria, sp. n.

Pale brown. Primaries have a black discal dot and two white transverse lines with black specks on them, the outer one curved and recurved; submarginal line wavy, whitish, but not clearly defined. Secondaries have a black discal dot and a white transverse indented line beyond, the latter inwardly edged with black, most distinctly towards inner margin. Fringes of the ground-colour preceded by a series of black dots. Under surface pale brown, suffused with fuscous on the disk: primaries have a pale discal mark and transverse line beyond: secondaries have a black discal dot and a pale band beyond, the latter inwardly edged with blackish.

Expanse 20 millim.

One male specimen from Chang-yang and an example of each sex from Moupin: July.

In the female specimen from Moupin the white lines are wider and in the male from same locality are almost band-like; but these examples are not in such good condition as the one from Chang-yang, which I have taken as the type.

Hab. Central and Western China.

[To be continued.]

Erratum.

P. 568, line 12, for "entirely black" read "entirely white."

BIBLIOGRAPHICAL NOTICE.

Das Tierreich. I. Lieferung.—*Aves*: Podargidæ, Caprimulgidæ, and Macropterygidæ. Bearbeitet von ERNST HARTERT. Berlin: Friedländer u. Sohn, 1897.

IN the first portion of the Birds in 'Das Tierreich,' which we have lately received, Mr. Ernst Hartert gives an excellent manual of the Goatsuckers and Swifts (Podargidæ, Caprimulgidæ, and Macropterygidæ). As may be supposed, it is based on the portion of vol. xvi. of the 'Catalogue of Birds in the British Museum' containing those families, which was written by him in 1892, thoroughly revised and brought well up to date; but some little alteration is made in the arrangement and in the sequence of the genera, added to which Mr. Hartert has, in the present instance, declared himself wholly for trinomialism, which we rather regret, as we are old-fashioned enough to believe that this is a course that does not tend to the simplification of the study of ornithology, but rather the reverse. The number of species added to those included in the Brit. Mus. Catalogue is fifteen, as follows:—*Podargus intermedius*, Hart.; *Batrachostomus microrhynchus*, Grant; *B. miatus*,

Sharpe; *Ægotheles rufescens*, Salvad.; *Æ. plumifer*, Ramsay; *Micropsalis kalinowskii*, Berlep.; *Caprimulgus Rosenbergi*, Hartert; *C. nigriscapularis*, Rchw.; *C. celebensis*, Grant; *C. aldabrensis*, Ridgw.; *C. Donaldsoni*, Sharpe; *Collocalia Whiteheadi*, Grant; *Cypseloides Cherriei*, Ridgw.; *Apus Willsi* (Hart.); *A. Shelleyi* (Salvad.); but of these *Ægotheles plumifer* and *Apus Shelleyi* were referred to in footnotes in that Catalogue. Besides which the following thirteen subspecies are also added:—*Nyctibius jamaicensis ariscus* (Gm.); *Nyctidromus albicollis derbyanus*, Gould; *Chordeiles virginicus aserriensis*, Cherrie; *Phalænoptilus Nuttalli nitidus*, Brewst.; *Caprimulgus macrurus ambiguus*, Hart.; *Caprimulgus macrurus nipalensis*, Hart.; *Caprimulgus europæus meridionalis*, Hart.; *Macropteryx mystacea Woodfordiana*, Hart.; *M. comata major*, Hart.; *Collocalia fuciphaga unicolor*, Jerd.; *Chatura zonaris pallidifrons*, Hart.; *Apus affinis galilejensis* (Antin.); and *Apus affinis Koenigi* (Rchw.). One new genus is given, viz. *Nannochordeiles*, Hartert [type *N. pusillus* (Gould)], and the following alterations and emendations are made:—*Ægotheles Lorie* (Cat. B. Brit. Mus. xvi. p. 650) is omitted; *Eurostopus* is corrected (p. 23) to *Eurostopodus*; *Macropsalis forcipata* (p. 27) to *M. creagra* (Bp.); the genus *Cosmetornis* is suppressed and included (p. 30) in *Macrodipteryx*, and *M. macrodipterus* is corrected to *M. longipennis* (Shaw); *Heliothreptus* is altered (p. 31) to *Eliothreptus*; *Caprimulgus lentiginosus* stands (p. 55) now as *C. trimaculatus* (Sw.), *Caprimulgus jotaka* as *Caprimulgus indicus jotaka*, and *Caprimulgus Kelaarti* as *Caprimulgus indicus typicus*; *Collocalia merguiensis* as *C. francica germani* (Oust.); *Tachornis batasiensis* is altered to *T. batasiensis*; and the generic name for the true Swifts is altered from *Micropus* to *Apus*, but should, we think, stand as *Cypselus*. Sixteen woodcuts of heads, feet, and tails are given, all of which will be found useful, and the entire work is well got up and conscientiously executed; and we congratulate Mr. Hartert on having completed so concise and useful a manual of these families.

MISCELLANEOUS.

On the Malpighian Tubes of Orthoptera.

By M. L. BORDAS*.

THE Malpighian vessels in Orthoptera present a close analogy with those of Hymenoptera so far as their number and length is concerned, but they differ essentially in their arrangement and mode of opening. They are, as a rule, capillary tubes, more or less elongated, cylindrical, tortuous, and arranged in several bundles which open in the majority of species on the summit of six little conical tubercles, arising in evaginations of the anterior extremity of the terminal portion of the intestine. In Forficulidæ, Phasmidæ, and Gryllidæ the relations of these glands to the intestine are entirely different.

From the histological point of view these glands consist of an external very delicate peritoneal coat and an internal epithelium

* Abstract from a work, 'Appareil digestif des Orthoptères.'

If this species is admitted into the genus *Fron dipora*, Mr. Busk's definition of that genus should be modified thus:—Zoarium pedunculate ramose; fasciculi opening only on one side, or at the ends, of the branches.

VIII.—On *Lepidoptera Heterocera* from China, Japan, and Corea. By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.—Part II. Family Geometridæ; Subfamilies Cœnochrominæ, Orthostixinæ, Larentiinæ, Acidaliinæ, and Geometrinæ.

[Continued from vol. xix. p. 679.]

Genus EUPITHECIA.

(Curtis, Brit. Entom. vi. pl. lxiv. (1825).)

Eupithecia proterva.

Eupithecia proterva, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 445 (1878); Ill. Typ. Lep. Het. iii. p. 52, pl. liv. fig. 1 (1879).

A nice series from Yokohama in Pryer's collection.

Hab. Japan.

Eupithecia signigera.

Eupithecia signigera, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 442 (1879).

Specimens from Yokohama and Gifu in Pryer's collection.

Hab. Japan.

Eupithecia caliginea.

Eupithecia caliginea, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 445 (1878);

Ill. Typ. Lep. Het. iii. p. 52, pl. liv. fig. 2 (1879).

Eupithecia zibellinata, Christ. Bull. Mosc. lv. (2) p. 117 (1881).

Tephroclystis zibellinata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 66.

There were three specimens in Pryer's collection.

Distribution. Amur; Japan.

Eupithecia castigata.

Geometra castigata, Hübn. Geom. fig. 456.

Tephroclystis castigata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 66.

There were four specimens (one male, three females) in Pryer's Japanese collection. My native collector obtained the species at Nikko, and I have received it from Pu-tsu-fong, where specimens were taken in June.

Distribution. Europe; Amur; Japan; Western China.

Eupithecia consortaria, sp. n.

Primaries greyish, with a faint brownish tinge and marked with darker on the costa; there are two or three obscure dusky transverse lines before the conspicuous black discal spot, and a double line (rather more clearly defined and angulated below costa) beyond the spot; submarginal line whitish, interrupted and bordered with dusky. Secondaries rather paler, with a blackish discal dot and an obscure dusky central band. Fringes greyish, marked with darker. Under surface pale fuscous grey; all the wings have a blackish discal dot, a dusky central band, and an obscure line beyond.

A male specimen from Moupin, July.

Hab. Western China.

Allied to *E. castigata*.

Eupithecia coronata.

Geometra coronata, Hübn. Geom. pl. lxxii. figs. 372, 373.

Eupithecia lucinda, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 442 (1879);

Ill. Typ. Lep. Het. lx. pl. clxx. fig. 11 (1893).

Chloroclystis lucinda, Hampson, Fauna Brit. Ind., Moths, iii. p. 396 (1895).

Specimens from Yokohama in Pryer's collection.

Eupithecia excisa.

Eupithecia excisa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 445 (1878);

Ill. Typ. Lep. Het. iii. p. 52, pl. liii. fig. 11 (1879).

Chloroclystis palpata, Hampson, Fauna Brit. Ind., Moths, iii. p. 391 (1895).

Specimens from Yokohama, Gifu, and Yesso in Pryer's collection.

Hab. Japan and Yesso.

Eupithecia minuta.

Collix minuta, Butl. Trans. Ent. Soc. 1881, p. 421.

Three specimens from Yokohama in Pryer's collection.

Hab. Japan.

This species appears to be closely allied to *E. rectangularata*, Linn.

Eupithecia Julia.

Lobophora Julia, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 446 (1878);

Ill. Typ. Lep. Het. iii. p. 53, pl. liv. fig. 4 (1879).

Chloroclystis palpata, Hampson, Fauna Brit. Ind., Moths, iii. p. 391 (1895).

There were specimens from Oiwake, Yokohama, Gifu, and Yesso in Pryer's collection.

Hab. Japan and Yesso.

Probably an Eastern Asian representative of *E. rectangularata*, L.

Eupithecia consueta.

Eupithecia consueta, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 442 (1879).

Five specimens from Yokohama and one from Yesso in Pryer's collection.

Hab. Japan and Yesso.

Eupithecia Pryeriararia, sp. n.

Male.—Pale whitly brown. Primaries traversed by several pale brown, transverse lines, but these are only distinct on the costa; there is a pale brownish mark on the basal third of costa and a short oblique dash below it on the inner margin; discal dot black; outer marginal area of all the wings pale brown, traversed by a whitish wavy line. Under surface slightly suffused with fuscous; all the wings have a dusky border on outer margin.

Female.—Rather browner, and the transverse lines are more distinct.

Expanse 24 millim.

Three examples of each sex in Pryer's collection from Yokohama and Yesso.

Hab. Japan and Yesso.

Eupithecia fuscicostata.

Eupithecia fuscicostata, Christ. Rom. sur Lép. iii. p. 11, pl. i. fig. 6 (1887).

Eupithecia fuscostigma, Alph. op. cit. vi. p. 80 (1892).

Alphéraky records an example of each sex of this species from the province of Kan-sou, taken in July. He states that the specimens are paler and that there are fewer brownish markings on the disk of the wings.

Distribution. Transcaucasia; Western China.

Eupithecia Sophia.

Eupithecia Sophia, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 444 (1878)

Ill. Typ. Lep. Het. iii. p. 51, pl. liii. fig. 9 (1879).

Butler describes this species from Yokohama; there were no specimens in Pryer's collection.

Hab. Japan.

*Eupithecia invis*a.

*Eupithecia invis*a, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 444 (1878);
Ill. Typ. Lep. Het. iii. p. 51, pl. liii. fig. 10 (1879).

Butler's type was from Hakodate; Pryer did not meet with it, and I failed to obtain it in any part of Japan that I collected in.

Hab. Japan.

Probably a form of *E. castigata*, Hübn.

Eupithecia sinicaria, sp. n.

Primaries brownish, darker along the costa; the basal area is whitish, limited by a wavy whitish band, which is clearly defined on the dark costal area and is intersected transversely by a wavy dark line; there is another similar whitish band beyond the black discal dot, but this does not proceed below the middle of the wing; these bands are connected by an irregular whitish patch below the dark costal area; third band whitish, intersected by a dark line on costa, but hardly traceable below, except as white points on the nervules, submarginal line dusky. Secondaries greyish, traversed by five wavy whitish bands, the third and fourth of which are most distinct. Under surface fuscous grey; primaries with a black discal dot and indications of dusky transverse bands; secondaries with whitish bands as above.

Expanse 24 millim.

A male specimen from Che-tou, Western China: July.

Allied to *E. succentureata*, Linn., from Europe.

Eupithecia rufescens.

Eupithecia rufescens, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 445 (1878);
Ill. Typ. Lep. Het. iii. p. 52, pl. liii. fig. 12 (1879).

Specimens from Yokohama in Pryer's collection. I took the species in Satsuma in May.

Hab. Japan and Kiushiu.

Eupithecia nipponaria, sp. n.

Primaries brownish, with some darker marks on the costa; discal dot black; submarginal line whitish, serrated to inner margin; there is a small white spot on it just above the inner margin. Secondaries rather paler, with a blackish discal dot and dusky indented central line. Fringes greyish, very broad, and preceded by a blackish line, which has pale dots on it at the ends of the nervules. Under surface paler

than above; primaries are slightly suffused with fuscous on the basal and outer marginal areas; the secondaries have two fuscous transverse lines, and all the wings have a blackish discal dot.

Expanse 22 millim.

A female specimen in Pryer's collection from Japan.

Allied to *E. absinthiata*, Cl., from Europe.

Eupithecia carearia, sp. n.

Pale brown. Primaries with a broad darker central band enclosing the blackish discal spot; the costal portion of the band above the discal spot is much darker than the remainder; there are indications of an interrupted pale submarginal line; this is preceded and followed on the costa by brownish clouds, and edged inwardly with the same colour above the middle and towards inner margin. Secondaries have a black discal dot. Fringes pale brown, preceded by an interrupted blackish line. Under surface paler than above, with blackish discal dots and faint traces of dusky transverse markings.

Expanse 25 millim.

Two male specimens in Pryer's collection.

Hab. Japan.

Allied to *E. indigata*, Hübn., from Europe.

Eupithecia costimacularia, sp. n.

Whitish. Primaries have four brownish spots on the costa, the first representing the upper portion of a basal patch, the second and third are near together, and the fourth is preceded by the whitish wavy line, which is inwardly bordered with brownish, especially towards inner margin; there are some brownish marks on the middle of the inner margin and the discal spot is elongate and black. Secondaries have a blackish discal dot; some brownish clouds on abdominal margin, from which there are indications of dusky bands across the wings. Fringes whitish, marked with brownish and preceded by a blackish line. Under surface whitish; primaries have the markings of upper surface faintly reproduced, except on inner margin; secondaries have a larger discal mark and two dusky transverse lines.

Expanse 24 millim.

One female specimen from Japan, probably from Yokohama.

Hab. Japan.

Allied to *E. oblongata*, Thnb., from Europe.

Eupithecia obliquaria, sp. n.

Primaries pale brown, basal and outer marginal areas clouded with blackish; there is an inwardly oblique and slightly angulated dark brown or blackish band about the middle of the wing; this is joined by an outwardly oblique streak on costal area; beyond the central band is a fine wavy blackish line, originating at costal extremity of central line and terminating in a spot on inner margin; submarginal line whitish and interrupted. Secondaries greyish; abdominal area pale brownish, barred with blackish. Fringes agree with the wings, preceded by a blackish line. Under surface greyish, suffused with fuliginous on primaries; secondaries have three dusky transverse lines; primaries have an elongate blackish discal mark and a spot of the same colour beyond it on costa.

Expanse 28 millim.

Two male specimens from Ta-chien-lu: May and June.

Hab. Western China.

Allied to *E. phœniceata*, Ramb., from Europe.

Eupithecia brevifasciaria, sp. n.

Primaries brownish; basal patch slightly darker, limited by a blackish line; central fascia indicated by blackish lines from costa to inner margin, the space between them blackish towards costa, forming a quadrate patch; beyond fascia is a pale band, whitish on costal portion, but suffused with the ground-colour below; outer marginal area with a blackish cloud on costa before apex, another below apex, and one at inner angle; these clouds are intersected by a whitish serrated submarginal line; there is a pale streak from apex to fascia. Secondaries whitish; the basal area is traversed by four blackish or fuscous bands, the outer one transversely intersected by a wavy line paler than ground-colour; outer marginal area fuscous, intersected by two whitish waved lines; the central space is paler than the ground, its outer edge crenulate. Fringes brown. Under surface whitish, tinged with fuscous; basal area traversed by diffuse fuscous lines and limited by a blackish line, angled at the middle; outer marginal area traversed by a fuscous line and limited by another line—the latter is marked with darker on neuration and is slightly curved on primaries and angled on secondaries; the intervening space on both wings, a spot about middle of outer margin of primaries, and a marginal band on secondaries paler than the ground-colour.

Expanse 28 millim.

One male specimen from Chow-pin-sa : May.

Hab. Western China.

Allied to *E. pulchellata*, Steph.

Eupithecia mandarinaria, sp. n.

Primaries pale brown, suffused and clouded with darker, and traversed by three black lines, each of which originates in a black mark on costa, and externally edged with whitish throughout its course; the inner is slightly curved, the outer is sharply dentate, and the median one is twice angled, the upper angle almost touching a dentation of the outer line; submarginal line wavy, whitish; discal spot black, encircled with whitish, large and conspicuous. Secondaries whity brown, dark brown on outer marginal area; there are two dusky transverse lines before the middle and a blackish-edged whitish dentate line beyond the middle, but this latter only extends from abdominal margin to third median nervule; submarginal line wavy, whitish. Fringes brown, marked with whitish and preceded by a whitish line. Under surface whitish, suffused with darker on the outer marginal area; primaries have a black discal spot, a black mark on costa beyond, and the transverse lines of upper surface are faintly indicated; secondaries have a black discal spot, some dusky transverse lines, and a series of blackish marks on the nervules.

Expanse 30-38 millim.

Fifteen specimens from Ta-chien-lu, Wa-shan, and Pu-tsu-fong, June; and one female example from Kiukiang.

Hab. Central and Western China.

In the Kiukiang example the transverse lines of primaries are very faint, but the black line beyond middle of secondaries is very conspicuous.

Allied to *E. togata*, Hübn.

Genus MICROLOBA.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 405 (1895).)

Microloba bella.

Melanippe bella, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 448 (1878); Ill. Typ. Lep. Het. iii. p. 55, pl. liv. fig. 10 (1879); Oberth. Etud. d'Entom. v. p. 53, pl. iv. fig. 11 (1880).

Tyloptera eburneata, Christ. Bull. Soc. Nat. Mosc. lv. (2) p. 116 (1880).
Microloba bella, Hampson, Fauna Brit. Ind., Moths, iii. p. 405 (1895).

There were specimens from Yokohama in Pryer's collection. I obtained the species at Gensan in July and at Hako-date in August, and my native collector met with it in the

island of Kiushiu. Examples have also been received from Ta-chien-lu, Pu-tsu-fong, Chia-ting-fu, and Chang-yang: June and July.

Distribution. Amur; Askold; Corea; Japan; Yesso; Kiushiu; Western and Central China.

Genus BRABIRA.

(Moore, Lep. Atk. p. 271 (1888).)

Brabira artemidora.

Melanippe artemidora, Oberth. Etud. d'Ent. x. p. 33, pl. i. fig. 6 (1884).

Brabira pallida, Moore, Lep. Atk. p. 271, pl. viii. fig. 12 (1887).

Brabira artemidora, Hampson, Fauna Brit. Ind., Moths, iii. p. 406 (1895).

Mr. Smith took two specimens at Hakone in August, and there were two in Pryer's collection.

Distribution. Sikhim (*Hampson*); Askold; Japan.

Brabira plicataria, sp. n.

Cinnamon-brown. Primaries have two short blackish streaks on costa before the broad central fascia, which has a darker patch on its middle; there are traces of a submarginal band, especially towards costa; these bands are continued on the secondaries; all the wings have a black discal dot. Fringes of the ground-colour, preceded by a series of black dots. Under surface tinged with fuscous, with bands of upper surface reproduced.

In the male the abdominal margin of secondaries is deeply folded.

Expanse, ♂ 27, ♀ 30 millim.

Two male specimens from Omei-shan and one female from Moupin: July.

Hab. Western China.

Superficially this species resembles *Venusia dharmalæ*, Butl.

Genus BESSOPHORA.

(Meyrick, Trans. Ent. Soc. Lond. 1892, p. 63.)

Bessophora Staudingeri.

Ptychoptera Staudingeri, Christ. Bull. Mosc. Iv. (2) p. 83 (1881).

Bessophora Staudingeri, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 63.

I took two specimens at Gensan in June.

Distribution. Amur; Corea.

Ptychoptera being preoccupied in Diptera, Meyrick has changed the name of this genus to *Bessophora*.

Genus LOBOPHORA.

(Curtis, Brit. Ent. ii. p. 81.)

Lobophora halterata.

Phalæna halterata, Hufn. Berl. Mag. iv. 603 (1769).

Geometra hexapterata, Schiff. Wien. Verz. 109 (1776); Hübn. Geom. fig. 232.

Trichopteryx hexapterata, Hübn. Verz. Schmett. p. 323.

Lobophora hexapterata, Steph. Ill. Brit. Ent., Haust. iii. p. 278; Guen. Phal. ii. p. 357.

Lobophora halterata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 62.

A few specimens from Yesso in Pryer's collection.

Distribution. Europe; Amur; Yesso.

Genus TRICHOPTERIGIA.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 403 (1895).)

Trichopterigia costipunctaria, sp. n.

Primaries pale brown, dotted with black on the costa; there is a blackish spot on the median nervure near the base; beyond there are two reddish spots, representing the first transverse band; central band reddish brown, interrupted between median nervure and costa, and intersected by some blackish marks on the nervules; submarginal band interrupted, reddish above inner margin. Secondaries whitish. Fringes agree in colour with the wings, preceded on primaries by a series of black dots (two at the extremity of each nervule). Under surface similar to above, but the markings of primaries are fuscous in colour.

Expanse 40 millim.

One male specimen and one female from Gifu in Pryer's collection.

Hab. Japan.

Genus TRICHOPTERYX.

(Hübn.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 61.)

Trichopteryx volitans.

Lobophora volitans, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 446 (1878);

Ill. Typ. Lep. Het. iii. p. 53, pl. liv. fig. 5 (1879).

A nice series from Yokohama in Pryer's collection.

Hab. Japan.

Trichopteryx hemana.

Larentia hemana, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 444 (1878);
Ill. Typ. Lep. Het. iii. p. 51, pl. liii. fig. 8 (1879).

There was a nice series in Pryer's collection from Yokohama, and my native collector obtained the species in the island of Kiushiu.

Hab. Japan and Kiushiu.

Trichopteryx choaspitis.

Lobophora choaspitis, Oberth. Etud. d'Entom. x. p. 33, pl. i. fig. 10 (1884).

There was a specimen from Gifu in Pryer's collection that I consider to be referable to this species. Oberthür's type was from the isle of Askold.

Distribution. Askold; Japan.

Trichopteryx grisearia.

Lobophora grisearia, Leech, Entom., Suppl. p. 54 (May 1891).

Five males and three females, probably from Yokohama, in Pryer's collection.

Hab. Japan.

Trichopteryx terranea.

Lobophora terranea, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 446 (1878);
Ill. Typ. Lep. Het. iii. p. 53, pl. liv. fig. 6 (1879).

Five specimens from Yokohama in Pryer's collection.

Hab. Japan.

Trichopteryx misera.

Lobophora misera, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 443 (1879).

There were nine specimens from Yokohama and one from Gifu in Pryer's collection.

Hab. Japan.

Trichopteryx bellaria.

Lobophora bellaria, Leech, Entom., Suppl. p. 54 (May 1891).

A male specimen from Yokohama and a female from Gifu in Pryer's collection.

Hab. Japan.

Trichopteryx viretata.

Geometra viretata, Hübn. Geom. pl. xlv. fig. 230.

Trichopteryx viretata, Hübn. Verz. Schmett. p. 323; Hampson, Fauna Brit. Ind., Moths, iii. p. 405; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 62.

Lobophora viretata, Steph. Ill. Brit. Ent., Haust. iii. p. 278; Guen. Phal. ii. p. 368.

One female specimen from Ta-chien-lu, taken in May.

Distribution. Europe; Ural; Western China. Dharmśála; Sikhim; Khásis (*Hampson*).

Trichopteryx consobrinaria.

Lobophora consobrinaria, Leech, Entom., Suppl. p. 54 (May 1891).

One male specimen from Gifu in Pryer's collection.

This species is closely allied to *L. viretata*, Hübn.

Hab. Japan.

Trichopteryx obscuraria.

Lobophora obscuraria, Leech, Entom., Suppl. p. 55 (May 1891).

Several male specimens from Loochoo and Yokohama in Pryer's collection.

Hab. Japan and Loochoo.

Trichopteryx olivaria, sp. n.

Primaries olivaceous grey; costa marked with black; first line blackish, almost straight, and near the base of the wing; central band indicated by two black lines, connected below the middle by black bars on the nervules; the outer line is intersected by black bars on the neuration above the middle, bordered throughout its course with fuliginous, and terminates in a black patch, enclosing a white spot, on inner margin; submarginal band interrupted, blackish, followed by a wavy whitish line. Secondaries fuscous grey, with blackish discal dot. Fringes agree with the wings in colour, preceded by an interrupted black line. Under surface brownish grey on basal two thirds; outer marginal third paler, traversed by a dusky submarginal band; discal spot black, obliquely linear on primaries.

Expanse 35 millim.

One female specimen in Pryer's collection.

Hab. Japan.

Trichopteryx muscigera.

Lobophora muscigera, Butl. Trans. Ent. Soc. Lond. 1881, p. 421.

Pryer refers to this species in his Catalogue (564, Fujisan), but there were no specimens in his collection, and I have not seen any example other than the type in the National Collection at South Kensington.

Hab. Japan.

Genus SAURIS.

(Guen.; Hampson, Fauna Brit. Ind., Moths, iii. p. 408 (1895).)

Sauris nigrilinearia, sp. n.

Primaries ochreous, with a faint greenish tinge; there are three black marks on the costa, and from each of these there are traces of transverse lines, the outer double and most distinct; on the outer marginal area there are two black transverse lines, the first curved and recurved and the second more or less interrupted; the space enclosed by these lines, from inner margin to above middle, fuscous grey, clouded with blackish; discal dot black, elongate; fringes greyish, darker at base, and preceded by a series of black dots. Secondaries fuscous grey. Under surface pale brown, with a pinkish tinge; outer marginal area of primaries suffused with dusky.

Expanse 34 millim.

One male specimen in Pryer's collection without locality ticket.

Hab. Japan.

Sauris nanaria, sp. n.

Primaries whitish, suffused with dusky on basal and costal areas, the latter tinged with ochreous; beyond the middle there is a broad, fuscous, transverse band—this is represented by a few scales only between the second median nervule and inner margin, and is edged outwardly on the costal area with whitish; outer marginal area blackish, interrupted exteriorly towards inner margin, and traversed by a thin line of the ground-colour; fringes greyish, preceded by a series of black dots. Secondaries fuscous grey. Under surface whitish, suffused with dusky on costal and outer marginal areas of primaries.

Expanse 20 millim.

One male specimen in Pryer's collection; locality not indicated.

Hab. Japan.

Genus DISCOLOXIA.

(Warren, Novit. Zool. ii. p. 105 (1895).)

Discoloxia megaspilata.

Discoloxia megaspilata, Warren, Novit. Zool. ii. p. 105 (1895).

Warren describes this species from Japan. There was a nice series from Gifu in Pryer's collection.

Hab. Japan.

Genus HYDRELIA.

(Hüb. n. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 412 (1895).)

Hydrelia sylvata.

Geometra sylvata, Hüb. n. Geom. fig. 231.

Phalæna testaceata, Donovan. Brit. Ins. xiv. pl. cccclxxxvii. fig. 1 (1810).

Hydrelia sylvata, Hüb. n. Verz. Schmett. p. 322.

Asthena sylvata, Guen. Phal. i. p. 437.

Euchæca sylvata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 74.

Three specimens from Oiwake and two from Yokohama in Pryer's collection.

Distribution. Europe ; Amur ; Japan.

Hydrelia plenaria, sp. n.

Whitish grey. Primaries have a darker greyish band beyond the middle, transversely intersected by an interrupted line of the ground-colour, followed by a double greyish wavy line. Secondaries have six wavy greyish lines, but those on basal half are less distinct than those on outer half. Fringes greyish, preceded by an interrupted blackish line. Under surface whitish ; primaries suffused with fuscous ; all the wings have two dusky, wavy, transverse lines.

Expanse 21 millim.

Two male specimens from Chang-yang : June and August.

Hab. Central China.

Hydrelia phasma.

Emmelesia phasma, Butler. Ann. & Mag. Nat. Hist. (5) iv. p. 441 (1879).

Acidalia latsaria, Oberthür. Etud. d'Entom. xviii. p. 32, pl. iii. fig. 35 (1893).

Hydrelia phasma, Hampson, Fauna Brit. Ind., Moths, iii. p. 412 (1895).

I took the species at Hakodate in August, and my native collector obtained it at Gensan in August and also in the island of Kiushiu. Eight specimens from Gifu, one from Yokohama, and one from Oiwake in Pryer's collection. Oberthür records the species from Ta-chien-lu.

Distribution. Japan ; Yesso ; Kiushiu ; Western China ; Corea.

Hydrelia nisaria.

Acidalia nisaria, Christ. Bull. Mosc. lv. 2, p. 49 (1881).

A fine series in Pryer's collection. The specimens are from Yokohama, Oiwake, and Gifu. I obtained the species at Gensan in July and at Hakodate in August.

Distribution. Amur ; Japan ; Yesso ; Corea.

Hydrelia Blomeri.

Melanippe Blomeri, Curtis, Brit. Ent. pl. ccccxvi. (1832).

Emmelesia Blomeri, Steph. Ill. Brit. Ent., Haust. iv. p. 393.

Acidalia pulchra, Eversm. Bull. Mosc. 1842, iii. p. 557.

Euchæca Blomeri, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 74.

One male specimen in Pryer's collection.

In this example the only character that shows up at all prominently is the short brownish fascia.

Distribution. Europe; Amur; Japan.

Hydrelia marmoraria, sp. n.

Primaries ashy grey; subbasal line black, followed by a diffuse brownish band; beyond this there is a black line shaded inwardly with brownish; this is angled to the black linear discal mark, and again towards inner margin, where it meets an elbow of a fascia composed of three black lines; the outermost of these lines has a bidentate projection; the whole of the apical area is clouded with reddish brown; submarginal line wavy, curved and recurved, blackish towards inner margin and outwardly edged with black about the middle. Secondaries brownish grey, with some dark transverse lines and whitish bands, but, with the exception of the interrupted outer white band, these are only clearly defined on abdominal area. Fringes whitish, preceded by a series of black spots. Under surface fuscous grey, with some of the black lines of upper surface reproduced. Secondaries whitish, with a blackish central line and a fuscous submarginal band; all the wings have a blackish discal dot.

Expanse 26 millim.

One male specimen from Chang-yang: August.

Hab. Central China.

Hydrelia luteata.

Geometra luteata, Schiff. Wien. Verz. p. 110.

Geometra lutearia, Hübn. Geom. fig. 103.

Asthenes lutearia, Hübn. Verz. Schmett. p. 310; Guen. Phal. i. p. 435.

Euchæca luteata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 74.

There were two specimens, probably from Yokohama, in Pryer's collection; these are paler than the European examples in my collection.

Distribution. Europe; Amur; Askold; Japan.

Hydrelia ochrearia, sp. n.

Pale ochreous; all the wings have indications of subbasal,

central, and submarginal brownish lines, most conspicuous on the costa; the primaries have a brownish dot on costa between central and submarginal lines, and the secondaries have a brownish discal spot. Fringes of the ground-colour preceded by a series of minute black dots. Under surface whitish ochreous; primaries suffused with fuscous brown on costal portion of basal half; costa beyond tinged with darker ochreous.

Expanse 27 millim.

One male specimen from Pu-tsu-fong: June or July.

Hab. Western China.

Hydrelia straminearia, sp. n.

Pale stramineous. Primaries with four and the secondaries with three transverse dusky lines, the outer two in each case wavy and double; on the primaries there is a blackish dot at the costal extremity of the second and third lines; all the wings have a blackish discal dot. Under surface whitish; primaries tinged with stramineous on the apical and outer marginal areas, and clouded with fuscous on costal portion of basal area; there is an angulated and sinuous fuscous central line, and a double wavy line beyond also fuscous: secondaries have indications of two fuscous transverse lines; discal dots as above.

Expanse 33 millim.

One male specimen from Wa-shan: June.

Hab. Western China.

Hydrelia albidaria, sp. n.

White, with slight creamy tinge. Primaries have a black discal dot and four dusky, wavy, transverse lines, the third double; secondaries have three such lines, the middle one double. Under surface white; primaries fuscous on costal portion of basal area and traversed by three wavy fuscous lines, the central one well defined; secondaries have two fuscous lines; all the wings have a black discal dot, and the fringes are preceded by an interrupted blackish line.

Expanse 30-32 millim.

One male specimen from Chia-kou-ho, a female from Chia-ting-fu and one from Wa-shan: June and July.

I have described the female from Chia-ting-fu, as the markings are more distinct in this particular specimen than in either of the others.

Hab. Western China.

Hydrelia distinctaria, sp. n. *Pl. VII, fig. 6.*

Whitish. Primaries traversed by five dark grey lines, the fourth double; costa has a broad ochreous streak, increasing in width towards outer margin; there is a blackish-grey mark at the base of costa and five others beyond, from the third, fourth, and fifth of which the second, third, and fourth transverse lines commence; the costal half of the double fourth line is clouded with blackish grey, and there are two spots of the same colour towards costa beyond fifth line and one on costa just before apex; discal spot black. Secondaries have three dark grey transverse lines, the second double; discal dot black. Fringes silky, preceded by blackish-grey dots towards apex of primaries and about the middle of secondaries. Under surface whitish; primaries have an elongate blackish patch at base and two irregular blackish bands beyond, extending from costa to second median nervule, whence they are continued as lines to inner margin: secondaries have lines of upper surface faintly reproduced.

Expanse 32 millim.

Two male specimens from Pu-tsu-fong and one from Wanshan: June.

Hab. Western China.

Hydrelia recurvilineata.

Agnibesa recurvilineata, Moore, Lep. Atk. p. 256 (1887).

Hydrelia recurvilineata, Hampson, Fauna Brit. Ind., Moths, iii. p. 415 (1895).

I received a male specimen from Omei-shan, taken in July, and one from Chang-yang, taken in August.

Distribution. Sikhim (*Hampson*); Central and Western China.

Hydrelia punctilinearis, sp. n.

Somewhat similar to *H. recurvilineata*, but the orange markings are more restricted, the transverse lines of primaries are more clearly defined, and all the wings have a distinct submarginal line, macular or interrupted. The three lines on secondaries are finer, wider apart, and the two outer ones are dotted with black on the nervules.

Expanse 32-34 millim.

One male specimen from Chow-pin-sa, taken in June, and one from Kia-ting-fu, taken in July.

Hab. Western China.

Hydreliæ pictaria.

Somatina (?) *pictaria*, Moore, Proc. Zool. Soc. Lond. 1867, p. 645.

Agnibesa pictaria, Moore, Lep. Atk. p. 256 (1887).

Hydreliæ pictaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 415 (1895).

I received two male specimens from Ta-chien-lu and a female from Wa-shan, all taken in July.

Distribution. Sikhim (*Hampson*); Western China.

Hydreliæ electaria, sp. n. *Pl. VII. fig. 12*

Pale straw-yellow, traversed by obscure irregular lines. Basal area and costal portion of median third of primaries purplish, tinged with greyish; the basal area limited by a blackish curved line, edged with ferruginous, encloses an irregular patch of the ground-colour, and is traversed by an angulated blackish line; the costa beyond the limits of the basal patch is of the ground-colour, partially suffused with purplish; outer third ferruginous, merging into yellowish on apical area and towards inner margin, is limited by a lunulated blackish line and traversed by an obscure purplish-grey band; submarginal line represented by some blackish lunules, preceded by yellowish dots towards costa; a conspicuous black spot between the second and third median nervules and a smaller one in the space below. Secondaries have the abdominal margin tinged with ferruginous; outer third, which is of the ground-colour, merging into ferruginous towards the lunulated blackish limiting line, encloses a transverse series of greyish-ringed spots of the ground-colour, and is traversed by a tapered purplish-grey band; discal dot black. Fringes of the ground-colour with a brownish line at their base. Under surface pale whity brown: primaries have some fuscous marks on basal area and a conspicuous patch of the same colour on costal portion of median third; beyond there is a diffuse, fuscous, transverse band, followed by a blackish spot near apex, and a larger one between second and third median nervules: secondaries have a black discal dot, a fuscous transverse line, and a fuscous band, the latter traversed by a diffuse line of the ground-colour.

Expanse 35 millim.

One female specimen from Moupin: July.

Hab. Western China.

Hydreliæ obliterata.

Geometra obliterata, Hufn. Berl. Mag. iv. p. 608 (1767).

Geometra hepararia, Hübn. Geom. pl. xi. fig. 58.

Euchaëca hepararia, Hübn. Verz. Schmett. i. p. 298.

Eupisteria hepararia, Boisd. Ind. p. 192.

Euchaëca obliterata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 74.

There was a male specimen from Fujisan in Pryer's collection.

Distribution. Europe; Japan.

Hydrelia angularia, sp. n. Pl. VIII, fig. 18.

Outer margin of all the wings angulated about middle. Pale brown, suffused with darker brown on primaries, especially towards base. Primaries have a purplish-brown curved and recurved line on outer marginal area, the portions of the outer margin below apex and above outer angle limited by this line are whitish brown. Secondaries have a fuscous transverse line, followed by a dusky shade before the middle and a brownish diffuse line beyond—the latter is followed by a series of blackish dots on the nervules; submarginal line purplish brown, very near to margin, and continued only from abdominal margin to third median nervule; all the wings have a black discal dot. Fringes pale brown, preceded by a blackish line, which is dentate on primaries and sharply so towards middle of secondaries. Under surface whitish, with blackish discal dots: primaries have a diffuse dusky subbasal band, a dusky band before the middle not extending to inner margin, and an angulated series of blackish dots on the nervules: secondaries have two interrupted dusky lines.

Expanse 34 millim.

Nine specimens from Gifu in Pryer's collection and one taken by myself at Nagasaki in May.

Hab. Japan and Kiushiu.

Genus VENUSIA.

(Curtis, Brit. Ent. vi. pl. dcclix (1839).)

Venusia cambrica.

Venusia cambrica, Curtis, Brit. Ent. pl. ccccxvi.; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 75.

Venusia cambricaria, Guen. Phal. i. p. 440.

One female specimen from Oiwake in Pryer's collection.

Distribution. Europe; Japan.

Venusia tchroraria.

Venusia tchroraria, Oberth. Etud. d'Entom. xviii. p. 29, pl. iii. fig. 32 (1893).

Four male specimens were received from Pu-tsu-fong and one from Chow-pin-sa : June.

Oberthür's types were from Ta-chien-lu.

Hab. Western China.

Venusia kioudjrouaria.

Venusia kioudjrouaria, Oberth. Etud. d'Entom. xviii. p. 31, pl. iii. fig. 46 (1893).

Oberthür describes this species from Ta-chien-lu. I have four female specimens taken in the province of How-Kow in July.

Hab. Western China and Thibet.

Venusia laria.

Venusia laria, Oberth. Etud. d'Entom. xviii. p. 30, pl. iii. fig. 34 (1893).

Oberthür's types were from Ta-chien-lu. My collectors did not meet with the species.

Hab. Western China.

Venusia undularia, sp. n.

Primaries grey; basal area with four serrated brownish-grey transverse lines; beyond the blackish discal spot there are two undulated, serrated, brownish-grey lines, enclosing a band of the same colour; the nervules passing through this band are marked with black, and there is a black bar on the band above the third median branch; submarginal line agrees with the others in colour and contour, but increases in width towards the costa; between the last line and the outer margin there is an indistinct dusky line. Secondaries whitish; the discal dot is placed on or near a dark grey transverse shade, and there are four or five dark grey crenulated lines beyond. Fringes whitish grey, preceded by a series of blackish dots. Under surface of primaries fuscous, with the transverse lines beyond the discal spot faintly shown; of secondaries as above.

Expanse, ♂ 30, ♀ 33 millim.

One example of each sex from Pu-tsu-fong, Western China: June.

This species is allied to *V. laria*, Oberth.

Genus ASTHENA.

(Hübner; Hampson, Fauna Brit. Ind., Moths, iii. p. 417 (1895).)

Asthenella candidata.

Geometra candidata, Schiff. S. V. p. 110; Hübner, Geom. fig. 101.

Asthenella candidata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 74.

I received seven specimens, including both sexes, from Chang-yang, taken in July, and I took the species at Ningpo in April and at Gensan in June. My native collector obtained it at Hakodate also in June.

Distribution. Europe; Amur; Japan; Yesso; Corea; Central and North-east China.

Asthenia corculina.

Asthenia corculina, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 400 (1878); Ill. Typ. Lep. Het. iii. p. 39, pl. 1. fig. 8 (1879).

Several specimens from Yokohama in Pryer's collection. I took the species at Nagasaki in May.

Hab. Japan and Kiushiu.

Asthenia ochrifasciaria, sp. n.

White, with ochreous transverse markings. Median band of primaries broad, bifurcate towards costa, its outer edge sinuous and its termination on inner margin clouded with blackish; this is preceded by three more or less curved narrow bands; outer marginal area traversed by a wavy double line; discal spot black. Secondaries with three ill-defined wavy bands. Fringes silky white. Under surface white; basal two thirds of primaries suffused with ochreous tinged with fuscous, limited by a darker sinuous line; outer marginal area traversed by two interrupted bands, which are intersected by the ochreous nervules: secondaries have four ill-defined bands; all the wings have a blackish discal dot.

Expanse 24 millim.

Six specimens, including both sexes, from Oiwake and Yokohama, in Pryer's collection.

Hab. Japan.

Asthenia albostrigaria.

Cidaria albostrigaria, Brem. Lep. Ost-Sib. p. 85, pl. vii. fig. 13; Alph. Rom. sur Léop. vi. p. 79 (1892).

Cabera cliella, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 403 (1878); Ill. Typ. Lep. Het. iii. p. 43, pl. 1. fig. 9 (1879).

Hydriomena albostrigaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 73.

Specimens in Pryer's collection from Nikko, Oiwake, and Yesso.

I took the species at Gensan in July, and my native collector at Hakodate in June and July. It appears to be common in Western China. Alphéraky records it from the province of Kan-sou, taken in July.

Distribution. E. Siberia; Amur; Japan; Yesso; Corea; Western China.

Asthenia plurilinearia.

Somatina plurilinearia, Moore, Proc. Zool. Soc. Lond. 1867, p. 645.

Acidalia unistirpis, Butl. Ill. Typ. Lep. Het. ii. p. 51, pl. xxxvii. fig. 7 (1878); Alph. Rom. sur Lép. vi. p. 54 (1892).

Camptogramma unistirpis, Oberth. Etud. d'Entom. v. p. 54 (1880).

Asthenia plurilinearia, Hampson, Fauna Brit. Ind., Moths, iii. p. 417, fig. 194 (1895).

Hydriomena plurilinearia, Meyrick, Trans. Ent. Soc. 1892, p. 73.

There was a nice series from Oiwake in Pryer's collection. I obtained specimens at Gensan in July and at Hakodate in August.

My collectors met with the species in all the localities in Western China that they visited, and also at Chang-yang: June and July. Alphéraky records it from the province of Szechuen, taken in August.

In some of the specimens from Wa-shan and Che-tou the white markings are very narrow, and there is an entire absence of dark lines or patches.

Distribution. N.W. Himalayas; Sikhim; Khásis (*Hampson*); Amur; Japan; Yesso; Corea; Askold; Central and Western China.

Asthenia conditaria, sp. n.

Primaries pale brown, with darker transverse lines; basal area limited by a broad whitish band, which is elbowed below costa; between the central and outer marginal areas there is a broad whitish band, interrupted above the middle; a series of submarginal white dots placed on the nervules, discal spot black. Secondaries whitish, with traces of three waved transverse lines, most distinct on abdominal area. Fringes pale brown, chequered with darker. Under surface sordid white; basal two thirds of primaries suffused with fuscous; there is a pale brownish cloud before apex: secondaries have the markings more pronounced.

Eight specimens from Ta-chien-lu: May and June.

Expanse 38 millim.

Hab. Western China.

Asthenia (?) octomacularia, sp. n.

Silky white. Primaries have an irregular and diffuse ochreous band beyond the middle, the inner edge limited by an interrupted blackish line, which forms an 8-like mark about the middle. Secondaries have the basal two thirds ochreous, transversely interrupted by an ill-defined band of the ground-colour; on the outer marginal area there is a

narrow ochreous wavy band and indications of a submarginal line; discal dot blackish. Fringes silky white, preceded by three blackish dots towards apex. Under surface silky white: primaries have three dusky lines, each angled below the middle: secondaries have a minute discal dot and a dusky central shade.

Expanse 26 millim.

A male specimen from Chang-yang, August.

Hab. Central China.

Genus ESCHATARCHIA.

(Warren, Novit. Zool. i. p. 395 (1894).)

Eschatarchia lineata.

Eschatarchia lineata, Warren, *l. c.*

I have been unable to see the type of this species, which Warren describes from Japan.

Genus MINOA.

(Treit. Schm. vi. 2, p. 248; Walk. Cat. Lep. Het. xxiv. p. 1048 (1862).)

Minoa murinata.

Phalæna murinata, Scop. Ent. Carn. p. 229 (1763).

Minoa euphorbiata, Treit. Schmett. vi. 2, p. 249 (1828).

Asthenes murinata, Meyrick, Trans. Ent. Soc. 1892, p. 74.

One male specimen of the var. *cyparissaria*, Mann, from Oiwake, in Pryer's collection.

Distribution. Europe; Japan.

Genus ZOLA.

(Warren, Novit. Zool. i. p. 393 (1894).)

Zola terranea.

Ozola terranea, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 441 (1879).

Zola terranea, Warren, Novit. Zool. i. p. 393 (1894).

A fine series from Yokohama in Pryer's collection.

Hab. Japan.

Genus PSEUDOSTEGANIA.

(Butler, Trans. Ent. Soc. Lond. 1891, p. 416.)

Pseudostegania chrysidia.

Pseudostegania chrysidia, Butl. Trans. Ent. Soc. 1881, p. 417.

I took two specimens at Gensan in July, and Mr. Smith

one at Hakone in August. There was one example in Pryer's collection, and I have received one from Mr. Manley, of Yokohama.

Butler's type was from Tokio.

Hab. Japan and Corea.

Genus HASTINA.

(Moore, Lep. Atk. p. 260 (1888).)

Hastina azela.

Erosia azela, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 403 (1878); Ill. Typ. Lep. Het. iii. p. 42, pl. li. fig. 6 (1879).

A nice series from Ohoyama and Oiwake in Pryer's collection. I also received eight specimens from Mr. Manley, of Yokohama.

Hab. Japan.

Genus STAMNODES.

(Guen. Phal. ii. p. 515 (1857).)

Stamnodes depeculata.

Cidaria depeculata, Led. Ann. Soc. Ent. Belg. xiii. pp. 40, 50, pl. ii. fig. 6, ♂ (1870).

Hydriomena depeculata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 72.

Stamnodes depeculata, Led., var. *thibetaria*, Oberth. Etud. d'Entom. xi. p. 35, pl. vi. fig. 44 (1886).

Occurs in most of the localities in Western China visited by my collectors.

Distribution. Armenia; Western China.

Genus CAMBOGIA.

(Guen.; Hampson, Fauna Brit. Ind., Moths, iii. p. 419 (1895).)

Cambogia pulchella.

Hyria pulchella, Hampson, Ill. Typ. Lep. Het. viii. p. 124, pl. cliii. fig. 22 (1891).

Cambogia pulchella, Hampson, Fauna Brit. Ind., Moths, iii. p. 420 (1895).

One female specimen in Pryer's collection, probably from Yokohama.

Distribution. Sikhim; Khásis; Nilgiris (*Hampson*); Japan.

Cambogia pictaria.

Emmelesia pictaria, Moore, Lep. Atk. p. 267 (1887).

Cambogia pictaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 420 (1895).

One female specimen, taken by my native collector at Gensan in July.

Distribution. Sikhim ; Khásis ; Ceylon (*Hampson*) ; Corea.

Cambogia phænicosoma.

Chrysocraspeda phænicosoma, Swinhoe, Ann. & Mag. Nat. Hist. xvi. p. 294 (1895).

Cambogia phænicosoma, Hampson, Fauna Brit. Ind., Moths, iv. p. 561 (1896).

There were twelve specimens from Oiwake in Pryer's collection.

The type was from Cherra Punji. In the Japanese examples the band of primaries is paler than in typical examples.

Distribution. Cherra Punji ; Japan.

Cambogia conspicuaria, sp. n.

Primaries pale purplish-brown, costa and marginal area pale stramineous ; from the stramineous discal mark a brownish line proceeds to inner margin, and beyond this there are two leaden transverse wavy lines ; the purplish portion of the wing is limited by a brownish bidentate line ; submarginal line dusky. Secondaries pale purplish brown, suffused with ochreous on basal two thirds ; pale stramineous beyond and at extreme base ; there is a stramineous patch with a bifurcate black mark on it near the centre of the wing, and the purplish portion is traversed by two brownish lines and a pale one ; submarginal line dusky. Fringes whitish, preceded by some brownish dots on the upper portion of the outer margin of each wing. Under surface fuscous grey, marginal areas whitish ; limits of fuscous portion as above ; the primaries have a pale discal mark centred with black, and the secondaries have a bifurcate black discal mark.

Expanse 28 millim.

One female specimen from Omei-shan, July.

Hab. Western China.

Genus BAPTRIA.

(Hübner ; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 80.)

Baptria brephos.

Odezia brephos, Oberth. Etud. d'Entom. ix. p. 22, pl. ii. fig. 3 (1884).

Occurred in all localities in Western China visited by my collectors, and also at How-Kow and Chang-yang : June and July.

The How-Kow specimens, two in number, are rather paler than any of the others in the series; the white band on primaries is narrower and is traceable to inner margin.

Distribution. Central and Western China; Thibet.

Baptria nigrilinearia, sp. n.

Primaries greyish brown, traversed by three blackish lines, the first not well defined, the second interrupted below the middle, the third angulated below costa and lobed at the middle, thence wavy to inner margin; the internal edge of the third line is broadly bordered with blackish, and the external edge bordered with whitish from costa to the lobe, and thence with greyish brown to inner margin; the area beyond is blackish, traversed by a wavy pale submarginal line, which unites with the third line at the lobe. Secondaries reddish orange, with three transverse black lines, all of which are interrupted towards costa; submarginal line indicated by a black spot on costa, and another, linear in shape, on abdominal margin; outer margin bordered with black. Fringes chequered whitish and blackish. Under surface pale reddish orange: primaries have the apex and outer margin black, separated on the costal area from a black transverse elbowed fascia by a short white band; on the basal half there are indications of two black transverse lines: secondaries have indications of two black lines on basal area, and beyond there is a black angulated fascia; the outer margin is black and between it and the fascia there is a short black bar from abdominal margin.

Expanse 32 millim.

Two male specimens and one female from Omei-shan, Western China: July.

Allied to *B. brephos*, Oberth.

Baptria discothyrate.

Erateina (?) *discothyrate*, Pouj. Ann. Soc. Ent. Fr. 1895, p. 315, pl. vii. fig. 21.

Poujade records one male specimen from Moupin. My collectors did not meet with this species.

Hab. Western China.

Genus INUROIS.

(Butler, Ann. & Mag. Nat. Hist. (5) iv. p. 445 (1879).)

Inurois tenuis.

Inurois tenuis, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 445 (1879).

There was a series from Yokohama in Pryer's collection.

Hab. Japan.

Inurois membranaria.

Anisopteryx membranaria, Christ. Bull. Mosc. Iv. 2, p. 73 (1881).

Erannis membranaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 81.

Of this species there was a series from Yokohama in Pryer's collection. It is no. 509 of his catalogue. The male is larger in size and paler in colour than the same sex of *I. tenuis*, and the discal spot on all the wings is more conspicuous.

Distribution. Amur; Japan.

Genus ANISOPTERYX.

(Stephens, Ill. Brit. Ent., Haust. iii. p. 151 (1829).)

Anisopteryx primigena.

Phthorarcha primigena, Staud., Meyrick, Trans. Ent. Soc. Lond. 1892, p. 80.

Anisopteryx primigena, Staud. Deutsche entom. Zeitschr., Lep. vii. p. 291 (1894).

Anisopteryx japonensis, Warren, Novit. Zool. i. p. 374 (1894).

Two male specimens from Yokohama in Pryer's collection.

Meyrick, who erected the genus *Phthorarcha* for the species, finds that *primigena* differs from the species included in *Anisopteryx*, Steph. (*Erannis*, Hübn., Meyrick), in being destitute of the middle pair of spurs on hind tibiæ and in vein 5 of secondaries being wholly absent. In both my specimens the fifth vein of secondaries is distinctly in evidence, but the middle spurs are not present on hind tibiæ.

Distribution. Samarkand; Japan.

Subfamily ACIDALIINÆ.

Genus ACIDALIA.

(Treit. Eur. Schmett. v. 2, p. 438 (1825).)

Section I. (CRASPEDIA, Hampson).

Acidalia ornata.

Phalæna ornata, Scop. Ent. Carn. p. 219 (1763).

Leptomeris ornata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

Craspedia ornata, Hampson, Fauna Brit. Ind., Moths, iii. p. 426 (1895).

Six specimens in Pryer's collection.

Distribution. Europe; Amur; Japan.

The blotches on outer area of the wings are less distinct in Japanese than in European specimens.

✓ *Acidalia propinquaria*, sp. n.

White, dusted with brownish. All the wings have a blackish discal dot and a brown central line; outer marginal area brownish, limited by a wavy blackish line and transversely intersected by a wavy line of the ground-colour; this line is rather diffuse above the middle and towards outer angle. Fringes of the ground-colour preceded by a blackish lunulated line. Under surface white, suffused with fuscous on primaries, discal dot and outer line as above.

Expanse 25 millim.

Occurs at Moupin, Omei-shan, and in the province of Kweichow; also at Ichang and Chang-yang: June and July.

I took a female specimen at Gensan in July, and my native collector four males at Ningpo in the same month.

There is an unnamed example of the species from Hong-Kong in the National Collection at South Kensington.

Hab. Western, Central, and North-eastern China; Corea.

Acidalia satsumaria, sp. n.

White. Primaries have a faint fuscous band before the middle, marked with blackish on the inner margin, and a blackish angulated line beyond the middle; the latter becomes fuscous towards costa and is partly bordered outwardly with pale ochreous brown and blackish. Secondaries have a fuscous line beyond the middle, merging into black on abdominal margin, and dusky central shade; all the wings have a black discal dot. Fringes pale greyish white, with some fuscous dots at their base on primaries and towards outer angle of secondaries. Under surface whitish, with the markings of upper surface faintly reproduced.

Expanse 22 millim.

Two male specimens and one female taken by myself in Satsuma, May 1886.

Hab. Kiushiu.

Superficially resembles *A. trigeminata*, Haw.

Acidalia acutaria, sp. n.

Outer margin of secondaries distinctly angled about the middle.

Whity brown. Primaries have three transverse brownish lines: the first is not clearly defined, but has three black dots upon it; the second is oblique, indented towards the costa and again towards the inner margin; the third has a black mark upon it at inner margin and is dotted with black thence

to costa, where it is angled; submarginal line indistinct. Secondaries have two transverse lines, the outer one dotted with black; submarginal line indistinct; all the wings have a black discal dot. Fringes slightly darker than the ground-colour, preceded by black dots at the extremities of the nervules. Under surface: primaries irrorated with fuscous on basal half; second and third transverse lines distinct, the third dotted with black, but without black mark upon it: secondaries have the outer line as above, but the inner one is indistinct; discal spots as above.

Expanse 36-38 millim.

Four male specimens from Chang-yang and one example from each of the following localities:—Ichang, Kwei-chow, and Omei-shan: June.

Hab. Central and Western China.

Acidalia bimacularia, sp. n.

Whity brown. Primaries are traversed by five dusky wavy lines; the third of these passes through two dark brown marks, one on the inner margin and the other above third median nervule; the fourth and fifth lines are diffuse. Secondaries are traversed by a dusky diffuse central line; a wavy outer line and two dusky dentate bands beyond. All the wings have a brownish discal dot, that of secondaries placed on the central line. Fringes rather darker than the ground-colour, and preceded by a series of black dots connected by a fine dusky line. Under surface: primaries suffused with dusky; beyond the discal spot, which is linear, there is a faint blackish line and indented band: secondaries whitish, with a black discal dot and a blackish and wavy submarginal line.

Expanse 36 millim.

One example of each sex from Chow-pin-sa and a pair from Pu-tsu-fong: June.

Hab. Western China.

This species is closely allied to *C. Walkeri*, Butl.

✓ *Acidalia Walkeri*.

Idea Walkeri, Butl. Proc. Zool. Soc. Lond. 1883, p. 170.

Idea extimaria, Moore, Lep. Ceyl. iii. p. 455, pl. cciv. fig. 5 (1887).

Craspedia Walkeri, Hampson, Fauna Brit. Ind., Moths, iii. p. 427 (1895).

I have specimens from Moupin, Ta-chien-lu, Omei-shan, Chang-yang, and Ichang: taken in June and July.

Distribution. Nilgiris; Ceylon; Khásis; Shán States (*Hampson*); Central and Western China.

✓ *Acidalia rivularia*, sp. n.

Pale brown, finely irrorated with blackish. Primaries have three wavy dark transverse lines, the second diffuse and the third blackish, outwardly bordered with fuscous; discal spot annular, fuscous. Secondaries have two dark wavy transverse lines, the first diffuse and angled about the middle, the second blackish and bordered as on primaries; discal spot black. Fringes rather darker than the ground-colour and preceded by a series of black dots. Under surface paler than above; first line of primaries absent, but the other transverse lines are present, although not so well defined except as regards the outer blackish line on all the wings; discal spots black.

Expanse 40-42 millim.

Several specimens from Chang-yang and Moupin: July.

Hab. Central and Western China.

Acidalia proximaria, sp. n.

Pale whitish brown. Primaries traversed by three darker lines, the first curved, the second wavy, the third elbowed below costa and edged inwardly with blackish above middle and towards inner margin, the area beyond third line suffused with greyish brown. Secondaries have two wavy transverse lines, the area beyond the second line greyish brown; all the wings have a discal dot, that on secondaries blackish. Fringes of the ground-colour, preceded by a blackish line. Under surface whitish; all the wings have two wavy dusky lines; basal area of primaries suffused with dusky.

Expanse 28 millim.

Three male specimens from Ichang, June and July.

Hab. Central China.

Somewhat similar to *A. bimaculata*, but much smaller; the outer margin of secondaries is hardly angled, and there is a central line on under surface of primaries.

Acidalia strigilaria.

Geometra strigilaria, Hübn. Geom. fig. 109.

Acidalia strigilata, Dup. Lép. viii. pl. clxxvii. fig. 1; Guen. Phal. i. p. 507.

Leptomeris strigilaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

Acidalia strigilaria, Alph. Rom. sur Lép. vi. p. 54 (1892).

A common species in Japan; I captured it in various places from April to August. There were specimens from Yokohama in Pryer's collection. Occurs at Ningpo, Gensan, the island of Kiushiu, and at most of the places in China

visited by my collectors. Alphéraky records two specimens from the province of Kan-sou, taken in July.

Distribution. Europe; Amur; Japan; Kiushiu; Corea; Central, Western, and Northern China.

Acidalia modicaria, sp. n.

Somewhat similar to *A. strigilaria*, Hübn., but the oblique line of primaries terminates on the inner margin beyond the middle, and the outer marginal area of all the wings is dusky and is traversed by a conspicuous pale wavy line. The outer margins of secondaries are less angled.

Expanse 32 millim.

I took a male specimen at Foochau in April and have received one example of each sex from Omei-shan, taken in July, and a male from Kwei-chow, taken in August.

Hab. Eastern and Western China.

✓ *Acidalia falsaria*, sp. n.

Whitish, powdered with greyish. Primaries have an indistinct discal dot and three transverse greyish-brown bands; the first is narrow, subbasal, and does not extend to costa, the second is angulated below costa, and the third is preceded by a darker wavy line and followed by a whitish one. Secondaries marked similar to the primaries, but the black discal dot is on the first band, which appears to be a continuation of the second of primaries. Fringes greyish, preceded by a blackish line. Under surface whitish, tinged with dusky on primaries; all the wings have a dusky submarginal line and obscure discal dot.

Expanse 32 millim.

I have specimens of this species from Ta-chien-lu, Chia-ting-fu, Pu-tsu-fong, and Chow-pin-sa: they were taken in June and July.

Hab. Western China.

Allied to *A. strigilaria*, Hübn.

✓ *Acidalia remotata*.

Acidalia remotata, Guen. Phal. i. p. 458 (1857).

Acidalia attentata, Walk. Cat. Lep. Het. xxii. p. 754 (1861).

Acidalia absconditaria, Walk. *op. cit.* xxiii. p. 757 (1861); Butl. III.

Typ. Lep. Het. iii. p. 40, pl. 1. fig. 12 (1879).

Craspedia remotata, Hampson, Fauna Brit. Ind., Moths, iii. p. 433 (1895).

This species occurred throughout the region here dealt with from April to September.

There is considerable variation in expanse, colour, and markings; the various forms are connected by intergrades.

Distribution. Formosa; throughout India, Ceylon, and Burma; Andamans; Borneo (*Hampson*); China; Japan; Corea.

Acidalia fumata.

Acidalia fumata, Steph. Ill. Brit. Ent., Haust. iii. p. 312 (1835).

Leptomeres fumata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

One female specimen in Pryer's collection appears to be referable to this species.

Græser (Berl. ent. Zeit. 1888, p. 389) records the species from Amurland.

Distribution. Europe; Amur; Japan.

Acidalia remutaria.

Geometra remutaria, Hübn. Geom. fig. 98.

Leptomeres remutaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

One female specimen in Pryer's collection.

Distribution. Europe; Amur; Japan.

✓ *Acidalia arenaria*, sp. n.

Pale sandy brown, sparingly dusted with fuscous. Primaries have three transverse lines similar to those of *A. remutaria*, but they are less wavy and the first is placed midway between the base of the wing and the second line. Secondaries have two transverse lines. Fringes silky, preceded by a thin dusky line, upon which there is a black spot (sometimes two spots) just below apex. Under surface similar to that of *A. remutaria*, but the markings, especially on the secondaries, are less distinct.

Expanse 21–28 millim.

I took this species at Ningpo in April and at Nagasaki in May; my native collector obtained it at Gensan in July and also in the island of Kiushiu.

Several specimens received from Chang-yang, June.

Allied to *A. remutaria*, but the outer margin of primaries is rounder.

Distribution. Central and Northern China; Kiushiu; Corea.

Acidalia Beckeraria.

Acidalia Beckeraria, Led. Gen. p. 94 (1853); Alph. Rom. sur Lép. vi. p. 54 (1892).

Alphéraky records a male specimen from Yan-mine-Guagne, in the province of Chan-Si, captured in June.

Distribution. Western and Central Asia; Western China.

Acidalia nemoraria.

Acidalia nemoraria, Hübn., var. ?; Alph. Rom. sur Lép. vi. p. 54 (1892).

Alphéraky records a male specimen from Ou-pin in the province of Kan-sou: July. He states that the wings are very white, and that the ochreous bands are more distinct, especially on the secondaries, than in the European type.

Distribution. Central and Eastern Europe; Amur; Western China.

Acidalia nivearia, sp. n.

Male.—White. Primaries have three oblique pale ochreous transverse lines; the first of these is not well defined, but the second and third are parallel and near together; the costa of primaries and outer marginal area of all the wings sparingly sprinkled with minute black specks (only discernible under a lens). Secondaries have two almost parallel pale ochreous transverse lines and a black discal dot. Under surface white: primaries suffused with fuscous on costal portion of basal half; parallel transverse lines pale brown: secondaries have a pale brown transverse line beyond the middle and a minute black discal dot.

Female.—White, with minute black specks on costa of primaries and outer marginal area of all the wings as in the male; the wings appear to be without transverse markings.

Expanse, ♂ 22, ♀ 18 millim.

One example of each sex in Pryer's collection.

Hab. Japan.

Acidalia strigaria.

Geometra strigaria, Hübn. Geom. pl. xviii. fig. 95.

Acidalia strigaria, Guen. Phal. i. p. 497.

Leptomeris strigaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

There were some specimens from Oiwake in Pryer's collection, and I took a nice series at Gensan in June and July.

Distribution. Europe; Amur; Corea; Japan.

✓ *Acidalia majoraria*, sp. n.

Male.—Allied to *A. umbelaria*, Hübn. Whitish, powdered with fuscous scales. Primaries have four pale brown transverse lines, the first of which is elbowed below costa, the second is oblique, the third and fourth (which are near together) are oblique and slightly wavy. Secondaries have three transverse lines, which appear to be continuations of the second, third, and fourth of primaries. Fringes whitish,

silky and rather long. Under surface whitish: primaries heavily powdered with fuscous except on inner margin; costa tinged with ochreous; second, third, and fourth transverse lines indicated: secondaries sparingly powdered with fuscous, transverse lines hardly indicated; discal dot sometimes present, but never clearly defined.

Female.—Transverse lines rather broader and more distinct, otherwise agreeing with the male.

Expanse 40–42 millim.

Seven male specimens and two females from Oiwake in Pryer's collection.

Hab. Japan.

Acidalia umbelaria.

Geometra umbelaria, Hübn. Geom. figs. 437, 438.

Leptomeres umbelaria, Hübn. Verz. Schmett. p. 310; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 89.

Acidalia umbelaria, Guen. Phal. i. p. 502; Alph. Rom. sur Lép. vi. p. 54 (1892).

Five male specimens from Ta-chien-lu and two females from Moupin, taken in June. Alphéraky records two specimens from Yan-mine-Guagne in the province of Chan-Si, taken in June.

Distribution. Europe; Altai; Amur; Western China.

Acidalia sedataria, sp. n.

Male.—White. Primaries have three brownish-grey oblique transverse lines, one before and two beyond the middle. Secondaries also have three transverse lines, the first and second appearing to be continuations of the second and third of primaries. Under surface white: primaries suffused and dusted with fuscous on basal two thirds, and with two parallel fuscous transverse lines beyond the middle: secondaries have one fuscous transverse line beyond the middle; all the wings have a minute black discal dot.

Female.—Powdered and slightly suffused with brownish grey, and the transverse lines are diffuse.

Expanse, ♂ 32, ♀ 28 millim.

Allied to *A. umbelaria*.

Five male specimens and one female from Ta-chien-lu, one male from Chia-ting-fu and one from Pu-tsu-fong: June.

Hab. Western China.

Acidalia pudicaria.

Cabera pudicaria, Motsch. Bull. Mosc. 1860, p. 36.

There was a series from Oiwake and Yokohama in Pryer's *Ann. & Mag. N. Hist.* Ser. 6. Vol. xx.

collection. I obtained the species at Gensan in July, and my native collector took specimens at Hakodate in the same month.

I have received examples from Chang-yang and Chia-kou-ho.

Distribution. Amur; Japan; Yesso; Corea; Central and Western China.

✓ *Acidalia superior.*

Asthenes superior, Butl. Ill. Typ. Lep. Het. iii. p. 39, pl. 1. fig. 9 (1879).

A series from Yokohama and Oiwake in Pryer's collection.

I captured specimens at Ningpo in April, at Tsuruga and Gensan in July. My native collector took the species at Ningpo in June and also in the isle of Kiushiu. I have received specimens from Chang-yang, Ichang, and Omei-shan, where they were taken in June and August.

Distribution. Japan; Kiushiu; Corea; Central, Western, and Northern China.

✓ *Acidalia nupta.*

Asthenes nupta, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 401 (1878); Ill. Typ. Lep. Het. iii. p. 39, pl. 1. fig. 6 (1879).

There were some specimens in Pryer's collection. I obtained the species at Fusan in June, and my native collector met with it in the island of Kiushiu.

Distribution. Japan, Kiushiu, and Corea.

✓ *Acidalia pulveraria*, sp. n.

White, powdered with greyish. Primaries have an oblique dusky diffuse line just beyond the middle and a more distinct dusky waved line parallel with the outer margin; the space between these lines is less powdered with greyish than the rest of the wing; submarginal line white and wavy. Secondaries with markings as on primaries. Fringes greyish, preceded by an interrupted blackish line. Under surface whitish; primaries suffused with fuscous, except on inner and outer margin, dusky lines as above: secondaries have a black discal dot and an obscure dusky transverse line beyond the middle.

Expanse 22-30 millim.

One example of each sex from the island of Kiushiu, taken in June, and I took seven specimens in Satsuma in May. There were two males in Pryer's collection.

Hab. Japan and Kiushiu.

Allyed to *A. (Idaea) peralba*, Swinh.

✓ *Acidalia marcidaria*, sp. n.

Whitish. Primaries suffused with pale ochreous brown on basal half; beyond the middle there is a wavy transverse line limiting the outer marginal area, which is ochreous brown, traversed by an interrupted band of the ground-colour. Secondaries have subbasal and median ochreous-brown bands; outer marginal area as on primaries. All the wings have a black discal dot. Fringes rather paler than the markings, preceded by wavy whitish line. Under surface whitish: primaries freckled and suffused with fuscous on basal and outer marginal areas; there is a dusky, wavy, transverse line beyond the middle, which is continued on the secondaries.

Expanse 28-33 millim.

Five male specimens and one female from Wa-shan, three males from Chia-ting-fu and one from Ta-chien-lu: June and July.

Hab. Western China.

In some examples the basal area of primaries is limited by a darker line and in others the wing is not suffused within this line.

✓ *Acidalia lutearia*, sp. n.

Pale ochreous, finely powdered with fuscous. Primaries have a subbasal and two median wavy dusky lines, the space between the latter not powdered with fuscous; submarginal band wavy, of the ground-colour, free from fuscous powdering. Secondaries with lines and bands similar to those of primaries. Fringes of the ground-colour, with some black dots at their base towards apex of primaries. Under surface whitish: primaries have the outer third fuscous grey, limited by a serrated darker line, and traversed by a wavy pale band; there is a central transverse fuscous-grey shade, enclosing the pale-ringed black discal dot: secondaries have an obscure transverse subbasal band, a dark wavy central line, and an ill-defined dusky submarginal band; fringes of all the wings pale brown, preceded by a series of black dots.

Expanse 34 millim.

Eight male specimens and one female from Ichang and Chang-yang: June.

Hab. Central China.

✓ *Acidalia confusa*.

Asthenia confusa, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 400 (1878); Ill. Typ. Lep. Het. iii. p. 39, pl. 1. fig. 7 (1879).

I took this species at Nagasaki and in Satsuma in May;

my native collector obtained it at Gensan in July, and also at Nikko and in the island of Kiushiu. There was a specimen from Oiwake in Pryer's collection, and I have received one from Mr. Manley taken at Yokohama. The latter locality is also given for the species by Pryer in his 'Catalogue.'

Distribution. Japan; Kiushiu; Corea.

Acidalia plumbearia.

Acidalia plumbearia, Leech, Entom., Suppl. p. 55 (May 1891).

I took a male specimen in Satsuma in May and a female specimen at Nagasaki in June.

Hab. Kiushiu.

Acidalia mendicaria, sp. n.

Lead grey. Primaries have three more or less wavy darker transverse lines; submarginal line paler; all the wings have a dusky discal mark. Fringes rather paler than the ground-colour. Under surface paler than above, the only marking is an indistinct dusky submarginal line on each wing. Antennæ fasciculate, vertex of head conspicuously white.

Expanse 33 millim.

One male and two female specimens from Chang-yang and one male from Moupin: July.

Hab. Central and Western China.

Allied to *A. plumbearia* and also to *A. (C.) mecysma*, Swinh.

Acidalia centrofasciaria, sp. n.

Pale ochreous brown. Primaries have two transverse lines and a median band; the inner line dusky, angulated below the middle; outer line wavy, pale ferruginous; the median band is diffuse and purplish brown in colour, this band and also outer line are continued on the secondaries; all the wings have a blackish discal spot, obscured by the band on secondaries. Under surface paler than above, with all markings faintly reproduced, and the costal portion of basal area of primaries tinged with purplish grey.

Expanse 32 millim.

One female specimen from Chang-yang, June.

Hab. Central China.

Acidalia farinaria, sp. n.

Whitish, irrorated with greyish brown. Primaries have three and the secondaries two wavy, dusky, transverse lines; all the wings have an indistinct discal dot and whitish sub-

marginal line. Fringes whitish, preceded by a series of small blackish lunules. Under surface whitish: the primaries are suffused with greyish brown and are traversed by two dusky wavy lines beyond the discal mark: the secondaries also have two transverse lines, but the inner one is not well defined.

Expanse 32 millim.

One female specimen from Chia-ting-fu, July.

Hab. Western China.

Acidalia gnophosaria, sp. n.

Primaries pale ochreous brown, traversed by three wavy fuscous lines, each expanding into a blotch on costa; the marginal area beyond the third line is leaden grey, traversed by an undulated pale band. Secondaries leaden grey, heavily powdered with fuscous and traversed by two dusky lines; outer marginal area as on primaries. All the wings have a black discal dot. Fringes pale ochreous brown, preceded by a black lunulated line. Abdomen fuscous, ringed with pale brown. Under surface leaden grey; fringes pale brown.

Expanse 36 millim.

One male specimen from How-Kow, Thibet: July.

Allied to *A. marginepunctaria* from Europe.

✓ *Acidalia hanna*.

Acidalia hanna, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 401 (1878); Ill. Typ. Lep. Het. iii. p. 40, pl. l. fig. 11 (1879).

There were specimens in Pryer's collection. I obtained two examples at Fusan in June.

Hab. Japan and Corea.

✓ *Acidalia impersonata*.

Acidalia impersonata, Walk. Cat. Lep. Het. xxiii. p. 758 (1861).

There were some specimens from Yokohama in Pryer's collection. I took the species in Satsuma and at Nagasaki in May and at Gensan in July, and I have received specimens taken in August at Ichang. "China" is the locality given by Walker for the type.

Distribution. Japan; Kiushiu; Corea; Central and Northern China.

✓ *Acidalia infuscaria*, sp. n.

Male.—Dusky brown. Primaries have four darker transverse wavy lines, the third and fourth outwardly bordered with paler. Secondaries have transverse lines as on pri-

maries. Under surface similar to above, but suffused with fuscous.

Expanse 24 millim.

Female.—Pale ochreous brown, transverse lines indistinct.

Allied to *A. rubiginata*, Hufn.

Several specimens in Pryer's collection, some of which are from Yesso; my collector obtained one female at Ningpo in July. I received one male from Chang-yang, taken in June.

One of the Japanese examples is almost unicolorous dark brown, with a slight purple tinge.

Distribution. Japan; Yesso; North and Central China.

Acidalia obfuscaria, sp. n.

Fuliginous brown on both surfaces, with rather lighter fringes; all the wings have faint traces of darker transverse lines beyond the middle. Body agrees with the wings in colour, but the tip of the abdomen is lighter.

Expanse 24 millim.

Two male specimens taken by my native collector at Ningpo in June.

Hab. North-eastern China.

✓ *Acidalia tectaria*, sp. n.

Pale ochreous. Primaries have three and the secondaries two slightly darker irregular transverse lines. Fringes silky. Under surface: primaries pale ochreous, with lines of upper surface indicated: secondaries paler, with two obscure transverse lines.

Expanse 24–28 millim.

Ten specimens, mostly males, from Chang-yang: June. I obtained two examples at Gensan in July.

Distribution. Central China; Corea.

✓ *Acidalia cineraria*, sp. n.

Ashy grey, powdered with dark grey. Primaries have three transverse dark grey bands; the first is narrow and indented before reaching inner margin, the second is waved and broad below the blackish discal spot, the third is broad, wavy, and limited inwardly by a blackish line. Secondaries have a dark grey band before the blackish discal spot, and another, preceded by a blackish line, beyond; the first is angled about the middle and the second is dentate on its outer edge. Fringes of the ground-colour preceded by an interrupted black line. Under surface whitish grey, suffused with darker grey on basal and outer marginal areas.

Expanse 24–26 millim.

The first and second bands of primaries are not always clearly defined, and in some specimens the markings are almost obsolete.

I took a series at Nagasaki and in Satsuma in May and a single example at Fusan in June, and one at Gensan. I have also received the species from Yokohama, taken by Mr. Manley.

Allied to *A. accurataria*, Christ.

Distribution. Japan; Kiushiu; Corea.

✓ *Acidalia macescens.*

Acidalia macescens, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 439 (1879).

A series from Yokohama and Oiwake in Pryer's collection. I obtained the species at Nagasaki and in Satsuma in May. My native collector took specimens at Gensan in July, and I have received others from Chang-yang, captured in June and July, and from Ichang, taken in August.

Distribution. Japan; Kiushiu; Corea; Central China.

✓ *Acidalia emissaria.*

Acidalia emissaria, Walk. Cat. Lep. Het. xxii. p. 751 (1861).

Lycauges lactea, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 373 (1879).

Craspedia emissaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 435 (1895).

I obtained this species at Foochau and Ningpo in April, and there was a series of specimens from Yokohama in Pryer's collection.

Distribution. Dharmśála; Moulmein; Ganjam (*Hampson*); Japan; Northern China.

✓ *Acidalia steganioides.*

Acidalia steganioides, Butl. Ill. Typ. Lep. Het. ii. p. 51, pl. xxxvii. fig. 8 (1878).

There was a fine series from Yokohama in Pryer's collection; I met with specimens at Gensan in July, and my native collector obtained the species in the island of Kiushiu.

Distribution. Japan; Kiushiu; Corea.

Some examples are almost uniformly dark brown, with the markings obsolescent.

Acidalia (?) *tchratchraria.*

Acidalia tchratchraria, Oberth. Etud. d'Entom. xviii. p. 32, pl. iv. fig. 60 (1893).

Oberthür's type was from Tâ-Tsien-Loû. My collectors did not meet with the species.

Hab. Western China.

Section II. (Eois, Meyrick).

Acidalia muricata.

Phalæna muricata, Hufn. Berl. Mag. iv. p. 606 (1769); Rott. Naturf. xi. p. 81.

Geometra auroraria, Bork. Eur. Schmett. v. p. 477 (1794); Hübn. Geom. fig. 63.

Eois muricata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 87.

There was a nice series from Yokohama, Oiwake, and Nikko in Pryer's collection. I took the species in Satsuma in May and at Fusan in June. I have also received specimens from Chang-yang and Ichang, where they were taken in June and August.

Distribution. Europe; Amur; Japan; Kiushiu; Corea; Central China.

Acidalia sinicata.

Hyria sinicata, Walk. Cat. Lep. Het. xxii. p. 663 (1861); Butl. Ill. Typ. Lep. Het. iii. p. 41, pl. li. fig. 3 (1879).

Walker describes this species from "China (*T. Laye*)," but the exact locality is not indicated.

Acidalia contiguaria.

Geometra contiguaria, Hübn. Geom. pl. xx. fig. 105.

Acidalia contiguaria, Dup. Léop. v. 59, pl. clxxiv. fig. 1.

Eois contiguaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 87.

This species occurs in Corea and at Chang-yang and Chow-pin-sa.

Distribution. Europe; Corea; Central and Western China.

✓ *Acidalia impeza.*

Acidalia impeza, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 438 (1879).

There was a nice series from Yokohama in Pryer's collection. I obtained the species in Satsuma in May and my native collector at Gensan in July.

Distribution. Japan; Kiushiu; Corea.

Acidalia latimarginata.

Eois latimarginata, Warren, Novit. Zool. ii. p. 95 (1895).

One specimen from Ichang, June.

Warren's type is recorded from Japan.

Distribution. Japan; Western China.

Acidalia roseolimbata.

Acidalia roseolimbata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 310, pl. vi. fig. 9.

Poujade's type was from Moupin. I have received specimens from Wa-shan, Ni-tou, Ta-chien-lu, and Pu-tsu-fong, taken in June and July.

Hab. Western China.

✓ *Acidalia jakima.*

Acidalia jakima, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 401 (1878); Ill. Typ. Lep. Het. iii. p. 40, pl. l. fig. 10 (1879).

Specimens in Pryer's collection. I have received examples from Yokohama, Gensan, and Chang-yang.

Var. *obliteraria*, nov.

Transverse lines on upper surface obsolete, outer margins bordered with rosy; on the under surface the transverse lines are as in type, but less clearly defined.

One female specimen taken by myself in Satsuma, May.

Distribution. Japan; Kiushiu; Corea; Central China.

✓ *Acidalia fœdata.*

Acidalia fœdata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 439 (1879).

Acidaliu salutaria, Christ. Bull. Mosc. Iv. (2) p. 51 (1881).

Eois salutaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 87.

Several specimens from Yokohama and Oiwake in Pryer's collection. I took the species at Shimonoseki and T'suruga in July, and have received it from Ichang, where it was taken in August, and also from Gensan and Hakodate.

Distribution. Amur; Japan; Yesso; Corea; Central China.

Acidalia promiscuaria, sp. n.

Whitish, powdered on costal area with darker, and faintly iridescent. All the wings have a dusky central band, but this is not well defined, and there are other transverse markings beyond, but these are still more obscure. Under surface coloured as above: primaries have a dusky discal mark.

Expanse 28 millim.

I obtained a female specimen at Fusan in June.

Hab. Corea.

Acidalia obtectaria, sp. n.

Pale ochreous, with irregular darker transverse markings, a band beyond middle of primaries being the most prominent. Fringes of the ground-colour. Under surface paler than above and the markings more obscure.

Expanse 19-21 millim.

Allied to *A. bisetata*, Hufn., but more ochreous in colour, and the markings more confused.

Five specimens in Pryer's collection.

Both sexes are represented, but the above description is taken from a female example, as it is in better condition than the other specimens.

Hab. Japan.

Acidalia bisetata.

Phalæna bisetata, Hufn. Berl. Mag. iv. 618 (1769).

Geometra bisetata, Bork. v. 524 (1794).

Acidalia bisetata, Guen. Phal. i. p. 462 (1857).

Eois bisetata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 87.

Several specimens from Oiwake and Yokohama in Pryer's collection. I obtained the species at Ningpo in April, at Nagasaki in May, and my native collector at Gensan in July.

Specimens were received from Chang-yang and Moupin, taken in July.

Distribution. Europe; E. Siberia; Amur; Kiushiu; Corea; Central, Western, and North-eastern China.

✓ *Acidalia auricruda*.

Asthena auricruda, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 438 (1879).

A series in Pryer's collection from Nikko and Yesso.

My native collector obtained examples at Gensan in July.

Hab. Japan, Yesso, and Corea.

✓ *Acidalia invalida*.

Acidalia invalida, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 439 (1879).

Specimens from Oiwake in Pryer's collection.

I took the species at Fusan in June, and I have received it from Chang-yang.

Distribution. Japan; Corea; Central China.

Genus CHRYSOCRASPEDA.

(Hampson, Fauna Brit. Ind., Moths, iii. p. 443 (1895).)

Chrysocraspeda proximaria, sp. n.

Pale buff. Primaries have a black discal dot, with a dusky

cloud below it and a blackish, dotted, curved, and recurved line beyond the middle; the costa is edged with purplish brown. Secondaries have a black discal dot and a curved series of blackish dots beyond the middle. Fringes darker brown, preceded by a rather broad purplish-brown line. Under surface slightly paler than above; transverse lines more distinct; line before fringes narrower and paler.

Expanse 25 millim.

Two male specimens from Moupin, July.

Hab. Western China.

Allied to *C. (Hyria) marginata*, Swinh., but larger, and the primaries are more pointed.

Genus NINODES.

(Warren, Novit. Zool. i. p. 465 (1894).)

Ninodes splendens.

Ephyra splendens, Butl. Ill. Typ. Lep. Het. ii. p. 51, pl. xxxvii. fig. 1 (1878).

Ninodes splendens, Warren, Novit. Zool. i. p. 465 (1894).

A very fine series from Oiwake and Yokohama in Pryer's collection. I obtained the species at Nagasaki in May, and have received it from Ichang and Ta-chien-lu.

Distribution. Japan; Kiushiu; Central and Western China.

Genus EPHYRA.

(Dup.; Hampson, Fauna Brit. Ind., Moths, iii. p. 445 (1895).)

Ephyra brunnearia, sp. n.

Pale brown, with a slight vinous tinge on the outer marginal area of all the wings. Primaries have a subbasal line indicated by black dots on the nervures; a dusky curved and recurved central band and a wavy submarginal line, also dusky and dotted with black on the neuration; discal spot brownish. Secondaries have a white discal spot encircled with black and seated on a dusky transverse band; submarginal line as on primaries. Fringes concolorous with the wings and finely dotted with black at ends of the nervules. Under surface similar to above, but the discal spot of primaries has a pale centre and that of the secondaries is less distinct.

Expanse 34-36 millim.

Five male specimens and one female from Chow-pin-sa, Wa-ssu-kow, Ni-tou, Kia-ting-fu: June.

Hab. Western China.

Genus TANAOTRICHIA.

(Warren, Proc. Zool. Soc. Lond. 1893, p. 361.)

Tanaotrichia trilineata.*Tanaotrichia trilineata*, Warr. Proc. Zool. Soc. Lond. 1893, p. 361, pl. xxxii. fig. 2.

One male specimen from Che-tou, taken in July or August.

Distribution. Western China; Sikhim.Hampson considers this to be a form of *Erythrolophus prasonarius*, Swinh. (Fauna Brit. Ind., Moths, iii. p. 455).

Genus RHODOSTROPHIA.

(Hüb. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 455 (1895).)

Rhodostrophia pelliaria.*Phyletis pelliaria*, Guen. Phal. ii. p. 169 (1857).*Rhodostrophia pelliaria*, Hampson, Fauna Brit. Ind., Moths, iii. p. 456 (1895).

Several specimens from Pu-tsu-fong and Chow-pin-sa, taken in June.

Distribution. Murree; Thundiáni; Khásis (*Hampson*); Western China.*Rhodostrophia vinacearia*.*Anisodes* (?) *vinacearia*, Moore, Proc. Zool. Soc. Lond. 1867, p. 642.*Rhodostrophia stigmatica*, Butl. Ill. Typ. Lep. Het. vii. p. 110, pl. cxxxvi. figs. 19, 20 (1839).*Rhodostrophia vinacearia*, Hampson, Fauna Brit. Ind., Moths, iii. p. 455 (1895).

Several specimens received from Chang-yang and Moupin.

Distribution. Murree; Dharmasála; Sikhim; Khásis (*Hampson*); Central and Western China.*Rhodostrophia philolaches*.*Gnophos philolaches*, Oberth. Etud. d'Entom. xv. p. 22, pl. iii. fig. 26 (1891).*Eusarca tibetaria*, Staud. Iris, viii. p. 231 (1895).

A long series, comprising both sexes, from Ta-chien-lu, one example from Moupin, and one from Ni-tou: June and July.

Hab. Western China and Thibet.*Rhodostrophia* (?) *sinuosaria*, sp. n.

Whity brown. Primaries have a thin, curved, blackish subbasal line, spotted with black below costa and on the

median and submedian nervures; a triangular black discal spot and a sinuous black line, dotted with black on the venation, beyond; submarginal line pale, wavy, but not clearly defined. Secondaries have a black discal dot and a dotted sinuous line beyond; this line is bordered outwardly with fuscous, as also is the corresponding line on primaries. Fringes of the ground-colour preceded by a series of black dots. Under surface whity brown: primaries suffused with fuscous from base to just beyond the linear discal spot; transverse lines on all the wings as above, but fainter, especially on primaries.

Expanse 42 millim.

Two male specimens from Pu-tsu-fong: June.

Hab. Western China.

Genus TIMANDRA.

(Dup.; Hampson, Fauna Brit. Ind., Moths, iii. p. 458 (1895).)

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Timandra amataria.

Geometra amata, Linn. Syst. Nat. x. p. 524 (1758).

Calothyssanis amataria, Hübn. Verz. Schmett. p. 311; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 91.

Timandra amataria, Dup. Léop. vii. pl. cxlviii. fig. 3; Hampson, Fauna Brit. Ind., Moths, iii. p. 458 (1895).

Timandra comptaria, Walk. Cat. Lep. Het. xxvi. p. 1615; Butl. Ill. Typ. Lep. Het. iii. pl. li. fig. 2 (1879).

Very variable and generally distributed throughout Japan. The species was also met with by my collectors in most of the localities that they visited in Central and Western China.

Distribution. Europe and Eastern Asia.

Timandra extremaria.

Timandra extremaria, Walk. Cat. Lep. Het. xxiii. p. 811 (1861); Butl. Ill. Typ. Lep. Het. iii. pl. li. fig. 1 (1879).

This species appears to be generally distributed in Central and Western China. It also occurs at Ningpo.

The specimens in my series range in expanse from 34 millim. to 44 millim. and exhibit a good deal of variation in the width of the oblique line.

Hab. China.

Genus PROBLEPSIS.

(Led.; Hampson, Fauna Brit. Ind., Moths, iii. p. 461 (1895).)

Problepsis delphiaria.

Argyris delphiaria, Guen. Phal. ii. p. 14 (1857).

Problepsis delphiaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 462 (1895).

One example from Moupin, Western China : July.

Distribution. Hong Kong ; throughout India, Ceylon, and Burma (*Hampson*) ; Western China.

Problepsis deliaria.

Argyris deliaria, Guen. Phal. ii. p. 13 (1857).

Problepsis deliaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 462 (1895).

I took a male specimen in May in Satsuma and have received other specimens of the species from Chang-yang and Kiukiang, Chia-ting-fu, the province of Kwei-chow, and also from Ningpo.

Distribution. Throughout India, Ceylon, and Burma (*Hampson*) ; China and Kiushiu.

Problepsis superans.

Argyris superans, Butl. Cist. Ent. iii. p. 122 (1885).

Problepsis discophora, Fixsen, Rom. sur Léop. iii. p. 348, pl. xv. fig. 4 (1887).

There was a female specimen from Yesso in Pryer's collection. I took a female at Gensan in July, and have received specimens from Kia-ting-fu, Omei-shan, and Chang-yang.

Independent of other differences, this species may be at once separated from *P. deliaria*, Guen., by the space between the antennæ being white. In expanse it ranges from 40 to 60 millim.

Distribution. Japan ; Corea ; Western and Central China.

Genus DITHALAMA.

(Meyrick, Proc. Linn. Soc. N. S. W. (2) ii. p. 840 (1887) ;
Trans. Ent. Soc. Lond. 1892, p. 90.)

Dithalama indicataria.

Argyris indicataria, Walk. Cat. Lep. Het. xxiii. p. 809 (1861) ; Butl. Ill. Typ. Lep. Het. iii. p. 43, pl. li. fig. 8 (1879).

Dithalama indicataria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 91.

This species seems to occur throughout Japan from May to July. I also met with it at Gensan in June.

I have received it from Ichang and Chang-yang, and Walker records it from North China.

Distribution. Amur ; Corea ; Japan ; Kiushiu ; Central and Northern China.

[To be continued.]

Errata (Ann. & Mag. Nat. Hist. ser. 6, vol. xix.).

Pp. 188, 189, for *Oberthürria* (nom. præoc.) read *Parabraxas*.
P. 546, for Genus *Emmecosmia* read Genus *Emmesomia*, and for *Emmecosmia bilinearia*, sp. n., read *Emmesomiu parallelaria*, sp. n.

IX.—On new Species of *Rhopalocera* from Youngoo, Burma, and the Battak Mountains in Sumatra. By Major J. M. FAWCETT.

Ragadia simplex, sp. n.

Hab. Battak Mountains, Sumatra: June 1896.

Description.—*Male.* Upperside pale fuliginous brown, crossed by two darker fuscous bands running parallel to one another from the costa of the fore wing to the inner margin of the hind wing, the outer being much broadened on the hind wing. There is also a shorter band proximal to the body, which, starting parallel to the others on the fore wing costa, ends at the origin of the submedian of the fore wing.

From the apex of the fore wing to the inner angle of the hind wing runs a submarginal row of small indistinct fuscous spots, one in each interspace. The wing-margins are narrowly fuscous, the colour being bounded by a narrow submarginal band looped on the fore wing and on the hind wing parallel to the margin.

Underside similar in markings to the upper, but the ground-colour pale buff and the row of spots silver instead of fuscous.

The antennæ, head, thorax, abdomen, and legs like those of *R. crisia*, Hübner, from which this species differs in its generally pale ground-colour, and in the ocellate band of *crisia* being reduced to mere pupils of silver below and fuscous above.

Cynthia circe, sp. n.

Hab. Youngoo, Burma (March to June); Beeling, Tenasserim.

Description.—The species is allied to *C. erota*, Fabr., and *pura*, Swinhoe, from Cherra Punji. The male has exactly the colour of that sex of *pura*, Swinhoe, and only differs in the greater irregularity of the dark line crossing the wings from the middle of the costa of the fore wings to the anal angle of the hind wings and in the slightly more produced tail at the third median vein of the hind wings. The dark wing-markings tend to be a little more distinct.

Female. Upperside differs from that sex of *C. erota* in the white band of both wings being much broader, extending decreasingly in breadth to the anal angle of the hind wing, and the submarginal area beyond the white band being golden

brown instead of bluish fuscous. Underside no purple suffusion.

A character common to both sexes is the almost complete absence of the discal zigzag fuscous fascia which crosses the middle of both wings in typical *C. erota*, the white band in the female and the lighter band in the male of *Cynthia circe* being almost immaculate. I have a series of males from Burma which present absolutely no variation in the characters described above, and I possess but one female from Toungoo, Burma, which is exactly matched by a female in the British Museum from Beeling, Tenasserim. If the *C. asela* of Moore, from Ceylon, is recognized as a species distinct from *C. erota* (Fabricius), this species must also be regarded as distinct, as the Ceylon form is much nearer *C. erota* (typical) in both sexes.

Charaxes ajax, sp. n.

Hab. Battak Mountains, Sumatra: June, July.

Description.—*Male.* Allied to *C. corax*, Felder, from which it differs in the ground-colour of upper and underside being darker, the outer black band on the upperside of the fore wing being slightly broader and extending broadly black to the anal angle of the fore wing, its inner edge straighter, as the crescentic markings are clearly detached in the intermedian spaces; two fulvous spots, the upper displaced outwards between the radial, and the lower in the following interspace, continuing the series of fulvous lunules formed by the black crescents and the border.

The submarginal black spots on the hind wing are larger and more triangular, their inner edges irrorated with black atoms, and the first four from the anal angle tipped with a minute white spot. The underside is of a rich glaucous colour, in some lights inclining to purplish, much darker than any *corax*, more resembling some of the darker specimens of *baya*, Moore. The light violaceous antemarginal line is present in the fore wing, and within it are indistinct greenish lunules. In the hind wing a broad antemarginal band of olivaceous green, sinuated in each interspace, is bounded anteriorly by a narrow brownish border.

The disk is crossed by the usual dark lines, the outermost bounded by olivaceous green irrorations, which are wanting in *corax*.

• *Poritia geta*, sp. n.

Hab. Toungoo, Burma: March.

Description.—*Male.* Allied to *P. pleurata*, Hew., and

P. Hewitsoni, Moore. The blue area as large as in the former, occupying the entire discoidal cell of the fore wing, and in the submedian interspace all but reaching the outer margin. There are two blue apical spots as in *Hewitsoni*, but no black spot in the submedian interspace as in most specimens of that species, nor even the black line on the submedian vein as in typical *pleurata*. In the hind wing the blue area occupies the discoidal cell and extends a little above the radial. The outer margin of the hind wing is narrowly black, and there are, as in *pleurata*, traces of marginal and submarginal rows of black markings.

Below, the markings much resemble those of *pleurata*, but are more indistinct, more parallel, and on a pale ground.

X.—Description of a new Rat from China.

By OLDFIELD THOMAS.

AMONG a collection made at Kuatun, N.W. Fokien, and presented to the National Museum by Messrs. J. de La Touche and C. B. Rickett, there occur three specimens of a fine large rat as large as *Mus Edwardsi*, Thos., found at the same locality, but quite different from that and more nearly allied to the Burmese *Mus Bowersi*, And. It is, however, clearly distinct, and may be called

Mus Latouchei, sp. n.

Size very large. Upper surface uniformly clear grizzled grey, without tinge of yellow; the fur composed of grey hairs intermixed with slender, flattened, white, brown-tipped spines, not numerous or stiff enough to make the fur feel really spinous. Under surface pure white or yellowish white throughout, the line of demarcation on sides not very sharply defined. Ears large, evenly rounded. Hands white above, the fingers almost naked. Feet greyish proximally, white on the digits. Tail about as long as the head and body, its scales averaging about ten to the centimetre, very thinly haired, uniformly brown above and below, the extreme tip white.

Skull, in proportion to the size of the animal, rather lightly built. Compared to that of *Mus Bowersi* the nasals are more square-ended behind, the line of the fronto-premaxillary and fronto-nasal sutures runs straight across from side to side

instead of being bowed backwards; the supraorbital rims are more developed (though still small for so large an animal), and are continued along the parietals to the outer corners of the intermaxillary. Anterior edge of anteorbital plate more slanting. Posterior nares wider and more open than in the allied form. Incisors broad, pale yellowish, finely but irregularly striated in front.

Dimensions of the type (an adult female in skin):—

Head and body (probably stretched) 310 millim.; tail 290; hind foot (moistened) 60*.

Skull: basal length 51·3; greatest breadth 27·4; nasals 23 × 5·6; interorbital breadth 8·2; breadth of brain-case 21·3; interparietal 7 × 16·2; palate length from henselion 26; diastema 17; anterior palatine foramina 10·6 × 4; length of upper molar series 9·1.

Hab. Kuantun, N.W. Fokien.

Type: B.M. no. 97.6.6.2.

This fine rat is evidently very closely allied to *Mus Bowersi*, which is a native of Burma and Tenasserim, and is therefore widely distinct from it geographically. It differs, however, by its rather larger size, especially its longer hind feet, and by the various cranial differences above enumerated.

It is named in honour of Mr. J. de La Touche, of Foochow, to whom, in conjunction with Mr. Rickett, the British Museum is indebted for a considerable number of valuable Chinese mammals. Among these may be specially mentioned examples of the rare *Typhlomys cinereus*, M.-Edw., specimens which have enabled me for the first time to show the proper position of this interesting genus †.

BIBLIOGRAPHICAL NOTICE.

Ueber die Palpen der Rhopaloceren. Ein Beitrag zur Erkenntnis der Verwandtschaftlichen Beziehungen unter den Tagfaltern. Von ENZIO REUTER. (Acta Societatis Scientiarum Fennicæ, tom. xxii. No. 1.) (Helsingfors, 1896.)

THE early writers on insects used to complain that the Order Lepidoptera was one of the most difficult of all to classify, on account of the deficiency of characters. But with the increase of our know-

* The two other specimens have hind feet 57·5 and 58 millim. long. Three spirit-specimens of *M. Bowersi* in the Fea collection have feet respectively 51, 51, and 52 millim. in length.

† P. Z. S. 1896, p. 1016.

ledge we find that characters abound, and it is now rather a question of the real value to be attached to the structure of different organs than a matter of complaint that characters cannot be found. Nor shall we arrive at a really satisfactory system of classification of Lepidoptera until the structure of the principal organs has been worked out in all the various stages of the insects; and this is a lifelong study for a great number of observers.

The author of the present treatise has directed his attention chiefly to the structure of the palpi in butterflies, paying special attention (1) to the outward structure and form, (2) to the hairy or scaly clothing of the palpi, and (3) to the basal spot, which is a bare space on the inner side of the basal joint, which is striated, pitted, and set with numerous conical hair-scales. For the purposes of the present work 3557 palpi have been examined, belonging to 670 species and 302 genera, the result of this long and patient study being embodied in the elaborate treatise before us. It is illustrated by 6 plates, the first five representing structural details and the sixth containing a genealogical tree of the evolution of the Lepidoptera. The *Hesperiidæ* are regarded as a distinct suborder from the Rhopalocera, under the name of Grypocera, which is certainly an improvement on the more usual course of treating them as an aberrant family of the latter.

The first portion of the work consists of a description of the general form and clothing of the palpi under the various genera, and especially of the basal spot; the description of the latter sometimes exceeds in length that of all other structures noticed. Having concluded this, the author generalizes his results, and discusses the comparative relations of the various families and smaller subdivisions which he admits. Here his observations are not confined to the palpi, but extend to the neuration and other morphological characters of the insects; and he shows himself to be thoroughly acquainted with the extensive and not always easily accessible literature of the Order Lepidoptera, and compares his own conclusions with those of other writers to great advantage.

This is followed by general observations on the origin and classification of the Lepidoptera, not without reference to palæontological considerations; and by an extensive Bibliography, filling 11 closely printed pages.

We congratulate the author on the completion of a valuable and meritorious work, which marks an epoch in the study of the particular structures to which it is devoted. Much good work has previously been accomplished in Finland in other orders of insects; and the Finns are fully entitled to claim as high a rank as entomologists as they have long occupied as philologists.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

March 24, 1897.—Dr. Henry Hicks, F.R.S.,
President, in the Chair.

The following communications were read :—

1. 'On the Association of *Sigillaria* and *Glossopteris* in South Africa.' By A. C. Seward, Esq., M.A., F.G.S., University Lecturer in Botany, Cambridge.

In this paper the Author describes in detail several specimens of fossil plants submitted to him by Mr. David Draper of Johannesburg. His conclusions as to the geological age of the plant-bearing beds differ from those arrived at by Mr. Draper from stratigraphical evidence; the plants point to an horizon which may be referred to what is now termed the Permo-Carboniferous age. The difficulty of distinguishing between various forms of *Glossopteris*-leaves is discussed at some length; and the opinion expressed that it is practically impossible to separate the Indian, Australian, and African forms of *G. Browniana*, *G. indica*, and others. The chief interest as regards the plants centres round the specimens of *Sigillaria*; these are fairly well preserved impressions, and are referred to the well-known species, *S. Brardi*. In addition to various forms of the genus *Glossopteris* and the specimens of *Sigillaria*, the following plants are recorded:—*Noeggerathiopsis Hislopi*, *Gangamopteris cyclopteroides*, *Phyllothea*, *Conites* sp., *Cardiocarpus* sp., and *Sphenopteris* sp.

The paper concludes with some general remarks on botanical provinces in the Northern and Southern Hemispheres, and the relation of the *Glossopteris*-flora to the Coal-Measure vegetation of Europe.

2. 'Notes on the Occurrence of *Sigillaria*, *Glossopteris*, and other Plant-remains in the Triassic Rocks of South Africa.' By David Draper, Esq., F.G.S.

The Author gives a brief description of the geology of four localities, within a comparatively short distance from Johannesburg, from which several fossil plants have recently been obtained. He considers the plant-bearing beds to belong to the Lower Stormberg Series of Dunn, and to the horizon known as the Molteno Beds. The most important locality described in these notes is that of Vereeniging, 30 miles south of Johannesburg, where the Author found several specimens of *Sigillaria* associated with *Glossopteris* and other plants in iron-stained sandstones. The significance of this discovery of *Sigillaria* is briefly discussed. The several species of plants have been described by Mr. A. C. Seward in a paper recently sent to the Society.

XXIII.—Description of a new Ceratopterine Eagle-Ray from Jamaica. By G. A. BOULENGER, F.R.S.

AMONG some Fishes brought home from Jamaica by the Rev. J. Seed Roberts, who for many years has been paying special attention to the fish fauna of that colony, there was a Ceratopterine Ray which neither Mr. Roberts nor myself succeeded in identifying. It has much in common with Bancroft's *Cephalopterus hypostomus*, described from Jamaica in 1830, but is at once distinguished by the absence of teeth in the lower jaw, which precludes our referring it to the genus *Dicerobatis*, in which teeth are present in both jaws. The allied genus *Ceratoptera* agrees in this, that teeth are developed in one of the jaws only, but it is the lower instead of the upper that bears them; and, besides, the position of the mouth and the shape of the pectoral fin are entirely different. I therefore find myself compelled to propose a new genus for the reception of the Ray, with which I wish to associate the name of its discoverer.

CERATOBATIS, gen. nov.

Like *Dicerobatis*, Blainv., but teeth restricted to the upper jaw.

Ceratobatis Robertsii, sp. n.

The band of teeth occupying only half the width of the mouth, its width 10 times in its length; teeth tessellated, hexagonal, 2 to 3 times as broad as long, rugose with numerous obtuse ridges. Mouth inferior, wide. Pupil vertically elliptic. Body smooth; pectoral fins with nearly straight, slightly convex anterior and slightly concave posterior border. Cephalic fins measuring a little less than the width of the mouth; spiracles behind the eyes. The space between the last branchial clefts one fourth that between the first. Dorsal fin between the ventrals. Tail slender, without spine, nearly twice as long as the body.

	millim.
Length of disk, without cephalic appendages.....	350
Width of disk	780
Cephalic fin	90
Width of mouth	105
Diameter of eye	12
Ventral fin	70
Tail	620

Black above, white beneath.

This Ray grows to a very large size; but specimens are almost impossible to obtain, owing to the superstitious fear of the fishermen. The single specimen secured by Mr. Roberts, the dimensions of which are recorded above, is a young one, and is now deposited in the British Museum.

XXIV.—*On Lepidoptera Heterocera from China, Japan, and Corea.* By JOHN HENRY LEECH, B.A., F.L.S., F.Z.S., &c.
—Part II. *Family Geometridæ; Subfamilies CEnochrominæ, Orthostixinæ, Larentiinæ, Acidaliinæ, and Geometrinæ.*

[Continued from p. 110.]

[Plates VII. & VIII.]

Subfamily *GEOMETRINÆ.*

Genus *PSEUDOTERPNA.*

(Hübner, Verz. p. 284; Hampson, Fauna Brit. Ind., Moths, iii. p. 472.)

Pseudoterpna superans.

Hypochroma superans, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 398 (1878); Ill. Typ. Lep. Het. iii. p. 36, pl. xlix. fig. 12 (1879).

There were some specimens from Nikko, Oiwake, and Yesso in Pryer's collection, and I took a few examples at Hakodate in August.

Hab. Japan and Yesso.

Pseudoterpna alba.

Pingasa alba, Swinh. Trans. Ent. Soc. Lond. 1891, p. 491, pl. xix. fig. 6.

Pseudoterpna alba, Hampson, Fauna Brit. Ind., Moths, iii. p. 474 (1895).

Six specimens from Gifu and one from Ningpo, the latter taken by a native collector in July.

Distribution. Khâsis (*Hampson*); Japan; N. China.

Except that the ground-colour is tinged with ochreous, the Japanese and Chinese examples are identical with Indian specimens in the National Collection at South Kensington.

Pseudoterpna pseudoterpnaria.

Hypochroma pseudoterpnaria, Guen. Phal. i. p. 276 (1857).

Hypochroma Pryeri, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 398 (1878); Ill. Typ. Lep. Het. iii. p. 35, pl. xlix. fig. 9 (1879).

There were some fine specimens from Yokohama in Pryer's

collection, and I obtained the species at Nagasaki in June. I have also received it from Chia-kow-ho and the province of Kwei-chow.

Distribution. Japan; Western China.

Pseudoterpna pruinata.

Phalena pruinata, Hufn. Berl. Mag. iv. pp. 5, 520 (1767).

Geometra cytisaria, Esp. Schmett. v. p. 242, pl. xlv. figs. 1-4; Hübn. Geom. pl. i. fig. 2.

Pseudoterpna pruinata, var. *simplex*, Alph. Rom. sur Lép. vi. p. 54 (1892).

Alphéraky records a form of this species from N.W. China under the varietal name *simplex*. He describes it briefly as a large greenish-white form without markings.

Distribution. Europe; Armenia; Western China.

Pseudoterpna sinapiaria.

Hypochroma sinapiaria, Pouj. Ann. Soc. Ent. Fr. 1895, p. 309, pl. vi. fig. 5.

Poujade records a female specimen from Moupin.

Hab. Western China.

Pseudoterpna Davidaria.

Pachyodes Davidaria, Pouj. Ann. Soc. Ent. Fr. 1895, p. 310, pl. vii. figs. 16, 16 a.

One female specimen from Moupin (*Poujade*).

Hab. Western China.

Pseudoterpna arenaria.

Pachyodes arenaria, Leech, Trans. Ent. Soc. Lond. 1889, p. 144, pl. ix. fig. 12.

One female specimen from Kiukiang, taken in June.

Hab. Central China.

Pseudoterpna dorsocristata.

Terpna dorsocristata, Pouj. Ann. Soc. Ent. Fr. 1895, p. 313, pl. vii. figs. 18, 18 a.

Poujade's type (a female) was from Moupin.

I received a male specimen from Chang-yang, taken in July.

Hab. Central and Western China.

The male antennæ are slightly serrated.

Genus ACTENOCHROMA.

(Warren, Proc. Zool. Soc. Lond. 1893, p. 350.)

*Actenochroma virescens.**Bylazora virescens*, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 398 (1878);
Ill. Typ. Lep. Het. iii. p. 35, pl. xlix. fig. 8 (1879).

There was one example of each sex from Gifu in Pryer's collection. Butler's type was from Hakodate.

Hab. Japan and Yesso.

Genus ARCHÆOPSEUSTES.

(Warren, Novit. Zool. i. p. 380 (1894).)

*Archæopseustes amplificata.**Abraxas amplificata*, Walk. Cat. Lep. Het. xxiv. p. 1124 (1862).*Archæopseustes amplificata*, Warr. Novit. Zool. i. p. 380 (1894).

I received two male specimens and a female from Kiukiang, two males from Ichang, and one male from Omei-shan: June and July.

Walker's type was from N. China.

Hab. North, Central, and Western China.*Archæopseustes leucomelanaria.**Pachyodes leucomelanaria*, Pouj. Ann. Soc. Ent. Fr. 1895, p. 311, pl. vii. fig. 17.

Poujade's type was from Moupin. I have a male specimen, taken in July, from the same locality.

Hab. Western China.

Genus LIMBATOCHLAMYS.

(Rothschild, Novit. Zool. i. p. 540 (1894).)

*Limbatochlamys Rosthorni.**Limbatochlamys Rosthorni*, Rothschild, Novit. Zool. i. p. 540, pl. xii. fig. 9 (1894).

I have one male specimen from Chang-yang and one from Moupin: July.

The type is referred to as from "Interior of China (probably districts west of Ichang)."

Hab. Central and Western China.

Genus CHLORODONTOPERA.

(Warren, Proc. Zool. Soc. Lond. 1893, p. 351.)

*Chlorodontopera robustaria.**Hemithea robustaria*, Guen. Phal. i. p. 383 (1857).

Thalassodes macruraria, Walk. Cat. Lep. Het. xxvi. p. 1561 (1862).

Chlorodontopera robustaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 484 (1895).

Specimens in Pryer's collection without locality. I captured examples at Gensan in July and I received a female specimen from Wa-shan, taken in June.

Distribution. Japan; Corea; Western China.

Chlorodontopera mandarinata.

Odontoptera mandarinata, Leech, Trans. Ent. Soc. Lond. 1839, p. 141, pl. ix. fig. 13.

One example from Kiukiang, May.

Hab. Central China.

Genus AGATHIA.

(Guen. Phal. i. p. 380 (1857).)

Agathia lætata.

Agathia carissima, Butl. Ill. Typ. Lep. Het. ii. p. 50, pl. xxxvi. fig. 7 (1878).

Agathia lacunaria, Hedem. Horæ Ent. Ross. xiv. p. 512, pl. iii. fig. 4 (1879).

Agathia lætata, Fabr., Hampson, Fauna Brit. Ind., Moths, iii. p. 487 (1895).

There was a specimen from Yokohama in Pryer's collection, and my native collector obtained one in the island of Kiushiu. I took the species at Gensan in July, at Sakata and Hakodate in August, and I have received examples from Ichang, Moupin, Ni-tou, Huang-mu-chang, and Chia-kouho, all taken in July.

Distribution. Askold; Siberia; throughout India, Ceylon, and Burma; Borneo; New Guinea; Australia (*Hampson*); Corea; Japan; Yesso; Kiushiu; Central and Western China.

Agathia lycænaria.

Geometra lycænaria, Koll. Kasch. iv. p. 486 (1848).

Agathia lycænaria, Guen. Phal. i. p. 380 (1857); Hampson, Fauna Brit. Ind., Moths, iii. p. 485 (1895).

One specimen from Huang-mu-chang, July.

Distribution. Throughout India, Ceylon, and Borneo; Penang; Java (*Hampson*); Western China.

Genus ULIOCNEMIS.

(Warr. Proc. Zool. Soc. Lond. 1893, p. 355.)

Uliocnemis cassidara.

Phorodesma cassidara, Guen. Phal. i. p. 370 (1857).

Comibæna biplagiata, Moore, Lep. Ceyl. iii. p. 435 (1887); Hampson, Ill. Het. ix. p. 145, pl. clxxvi. fig. 18 (larva).
Uliocnemis cassidara, Hampson, Fauna Brit. Ind., Moths, iii. p. 488 (1895).

One specimen from Huang-mu-chang, July.

Distribution. Ceylon (*Hampson*); Western China.

Uliocnemis albimarginata.

Uliocnemis albimarginata, Warren, Proc. Zool. Soc. Lond. 1893, p. 353
 Hampson, Fauna Brit. Ind., Moths, iii. p. 489 (1895).

Distribution. Sikhim; Japan (*Hampson*).

Warren described this species from Sikhim. I do not know the Japanese form of it.

Uliocnemis venata.

Thalera venata, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 437 (1879).

There were three specimens from Yokohama in Pryer's collection.

Hab. Japan.

Genus HEMITHEA.

(Dup.; Hampson Fauna Brit. Ind., Moths, iii. p. 490 (1895).)

Hemithea strigata.

Geometra strigata, Müll. Fauna Ins. Friedr. p. 51 (1864).

Geometra æstivaria, Esp. v. pl. ii. figs. 1-3; Hübn. Geom. fig. 9; Treit. Schmett. v. 1, 117.

Hemithea æstivaria, Dup. Lép. vii. pl. cli. fig. 6.

Hemithea thymiaris, Guen. Phal. i. p. 384.

Nemoria strigata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 94.

I took specimens in Satsuma in May, at Fusan and Gensan in July, and my native collector at Hakodate in August.

Distribution. Europe; Amur; Corea; Japan; Yesso; Kiushiu.

Hemithea unilinearia, sp. n.

Bluish green, costa of primaries marked with blackish. All the wings have a fine whitish transverse line beyond the middle; this line is more wavy on the secondaries than on primaries: primaries have a black discal dot. Fringes greyish green. Under surface whitish green.

Expanse 38 millim.

One male specimen from Pu-tsu-fong, July.

Hab. Western China.

Hemithea obliterata.

Nemoria obliterata, Walk. Cat. Lep. Het. xxvi. p. 1558 (1862).

Iodis ussuriaria, Brem. Lep. Ost-Sib. p. 77, pl. vi. fig. 24 (1864).

Nemoria ussuriaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 94.

One male specimen from Oiwake in Pryer's collection. Walker's type was from Shanghai.

Distribution. E. Siberia; Amur; Japan; Eastern China.

Hemithea mundaria, sp. n.

Light yellowish green. Primaries have two whitish transverse lines on the central area of the wing, the first outwardly edged with green of a darker shade than the ground-colour and curved below costa, the second inwardly edged with the darker colour and more or less undulated. Secondaries have a discal mark agreeing in colour with the edgings of the transverse lines and a continuation of the second line of primaries. Under surface greenish white.

Expanse 26 millim.

Two male specimens and one female from Ta-chien-lu, June.

Hab. Western China.

Hemithea marina.

Thalassodes marina, Butl. Ann. & Mag. Nat. Hist. (5) i. p. 399 (1878);

Ill. Typ. Lep. Het. iii. p. 37, pl. 1. fig. 1 (1879).

Euchloris putata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

A series from Yokohama in Pryer's collection.

I obtained specimens at Tsuruga and Gensan in July.

Pryer considered this species to be identical with *Iodis lactearia* from Europe.

Distribution. Corea; Japan.

Genus TANAORRHINUS.

(Butl. Ill. Typ. Lep. Het. iii. p. 38 (1879).)

Tanaorrhinus reciprocatus.

Geometra reciprocata, Walk. Cat. Lep. Het. xxii. p. 515 (1861).

Geometra confuciarum, Walk. l. c. p. 522.

Tanaorrhinus confuciarum, Butl. Ill. Typ. Lep. Het. iii. p. 38, pl. 1. fig. 4 (1879).

Tanaorrhinus reciprocatus, Hampson, Fauna Brit. Ind., Moths, iii. p. 493 (1895).

A few specimens from Tokio and Kanosan in Pryer's collection.

I captured the species at Nagasaki in May, and Mr. Smith obtained it at Hakone in August.

I have also received examples from Chang-yang, Kiu-kiang, and the Province of Kwei-chow, taken in July.

Distribution. Simla; Dharmsala; Sikhim; Khásis (*Hampson*); North, Central, and Western China; Japan.

Tanaorrhinus vittatus.

Geometra vittata, Moore, Proc. Zool. Soc. Lond. 1867, p. 636; Waterhouse, Aid, pl. cli. fig. 5 (1884).

Tanaorrhinus prasinus, Butl. Ann. & Mag. Nat. Hist. (5) iv. p. 438 (1879).

Tanaorrhinus vittatus, Hampson, Fauna Brit. Ind., Moths, iii. p. 494 (1895).

Some specimens from Yokohama in Pryer's collection.

I met with the species at Nagasaki in May, and Mr. Smith obtained it at Hakone in August.

I have received examples from Omei-shan and the Province of Kwei-chow.

Distribution. N.W. Himalayas; Sikhim; Khásis (*Hampson*); Japan; Kiushiu; Western China.

GENUS GEOMETRA.

(Linn. Syst. Nat.; Hampson, Fauna Brit. Ind., Moths, iii. p. 495 (1895).)

Geometra papilionaria.

Phal. Geometra papilionaria, Linn. Syst. Nat. x. p. 522.

Geometra papilionaria, Esp. v. pl. vi. figs. 1-4; Hübn. Geom. fig. 6.

Holothalassis papilionaria, Hübn. Verz. Schmett. p. 285.

Some fine specimens from Oiwake and Yesso in Pryer's collection. I took the species at Hakodate in July.

Distribution. Europe; Siberia; Amur; Japan; Yesso.

Geometra flavifrontaria.

Nemoria flavifrontaria, Guen. Phal. i. p. 346 (1857).

Loxochila mutans, Butl. Proc. Zool. Soc. Lond. 1881, p. 615.

Geometra flavifrontaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 496 (1895).

One example from Ichang, June.

Distribution. N.W. Himalayas; Central China.

GENUS ARACIMA.

(Butl. Ill. Typ. Lep. Het. ii. p. 50 (1878).)

Aracima muscosa.

Aracima muscosa, Butl. Ill. Typ. Lep. Het. ii. p. 51, pl. xxxvi. fig. 8 (1878).

Geometra (?) *vestita*, Hedem. Horæ Ross. xiv. p. 508, pl. iii. fig. 3 (1879).

Geometra muscosa, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 96.

Several specimens from Yokohama in Pryer's collection.

Mr. Smith took the species at Hakone in August, and I captured some examples at Tsuruga in July and at Nikko in September.

A fairly constant species, but the discal markings of all the wings and the marginal border of secondaries are subject to modification.

Distribution. Amur; Japan.

Genus MEGALOCHLORA.

(Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.)

Megalochlora sponsaria.

Chlorochroma sponsaria, Brem. Lep. Ost-Sib. p. 77, pl. vi. fig. 25 (1864).

Megalochlora sponsaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

Specimens from Yokohama and Oiwake in Pryer's collection.

Distribution. E. Siberia; Amur; Japan.

Geometra viridescens, Motsch., is probably identical with this species.

Megalochlora albovenaria.

Geometra albovenaria, Brem. Lep. Ost-Sib. p. 75, pl. vi. fig. 21 (1864).

Megalochlora albovenaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

Geometra valida, Feld. Reise Nov. v. pl. cxxvii. fig. 37 (1875).

Geometra dioptasaria, Christ. Bull. Mosc. 1880, p. 9.

There were some examples from Yokohama in Pryer's collection. I obtained specimens at Gensan in June and July; and have received specimens from Omei-shan, Wa-shan, and Che-tou, taken in June and July.

Distribution. E. Siberia; Amur; Japan; Corea; Western China.

Megalochlora mandarinaria, sp. n.

Pale bluish green. Primaries, which are slightly concave below apex, have two transverse whitish lines, the first curved below costa and the second broad and slightly oblique; there is a whitish line at end of the cell. Secondaries, which are angled in middle of outer margin, have a broad oblique whitish line. Fringes whitish. Under surface whitish, strongly tinged with green on primaries; the broad transverse lines of upper surface are reproduced.

Expanse 54 millim.

One male specimen from Chow-pin-sa, taken in June.

Hab. Western China.

This species is somewhat similar to *M. albovenaria*, Brem., but the outer margins are not crenulate.

Megalochlora glaucaria.

Geometra glaucaria, Mén. Bull. de l'Acad. xvii. p. 220; Schrk. Amur-Reis. p. 65, pl. v. fig. 8 (1859).

Geometra usitata, Butl. Ill. Typ. Lep. Het. ii. p. 49, pl. xxxvi. fig. 3 (1878).

Megalochlora glaucaria, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

Some specimens from Yokohama and Oiwake in Pryer's collection.

Distribution. Amur; Japan.

Genus EUCHLORIS.

(Hübner; Meyrick, Trans. Ent. Soc. Lond. 1892, p. 94.)

Euchloris insolitaria, sp. n.

Male.—Bluish green; all the wings have a whitish transverse line beyond the middle, that on primaries is almost straight and that on secondaries slightly angled about the middle. Fringes whitish chequered with brown. Under surface whitish tinged with green.

Expanse 43 millim.

One male specimen taken by myself in the Province of Satsuma in May, and a female from Chang-yang, Central China, captured in June.

The female has plain fringes, but otherwise agrees with the male.

Distribution. Kiushiu; Central China.

Euchloris difficta.

Comibena difficta, Walk. Cat. Lep. Het. xxii. p. 576 (1861); Butl. Ill. Typ. Lep. Het. iii. p. 37, pl. l. fig. 3 (1879).

Ochrognesia difficta, Warren, Novit. Zool. i. p. 391 (1894).

There were specimens from Ohoyama and Nikko in Pryer's collection, and my native collector took a few examples at Gensan in July; I have two from Chang-yang and one from Ichang, taken in July.

Warren considers "*Phorodesma*" *gratiosaria*, Brem., from East Siberia to be identical with *E. difficta*.

Distribution. North and Central China; Japan; Corea; East Siberia.

Euchloris albocostaria.

Euchloris albocostaria, Brem. Lep. Ost-Sib. p. 76, pl. vi. fig. 22 (1864).

There were specimens from Nikko in Pryer's collection.

I obtained the species at Gensan in July and have received it from Ichang.

Distribution. E. Siberia; Amur; Japan; Corea; Central China.

Euchloris procumbaria.

Euchloris procumbaria, Pryer (W. B.), Cist. Ent. ii. p. 232, pl. iv. fig. 2 (1877).

Comibæna vaga, Butl. Trans. Ent. Soc. Lond. 1881, p. 410.

One female specimen from Nikko in Pryer's collection; and a male from Omei-shan, taken in June. Butler's type was from Tokio and that of Pryer from Shanghai.

Distribution. Japan; Western China.

Euchloris argentataria, sp. n.

Bright green. Primaries have two silvery-white lines, the first forming a double curve, the second dentate towards costa and expanding into a broad dentate mark above inner margin; the marginal area is washed with silvery white and there is a patch of purplish grey enclosing two black dots on the inner marginal portion; discal dot encircled with white. Secondaries have an elongate purplish discal mark and a silvery-white marginal line, this latter is inwardly dentate above the middle, arcuate towards the purplish-grey outer angle, and expands into a purplish-grey marked blotch at anal angle. Fringes silvery white, mixed with purplish grey on the secondaries. Under surface: primaries green as above, marked with silvery white on inner marginal area and on the outer margin; outer line and discal dot as above: secondaries silvery white, with a blackish patch at outer angle, a blackish discal dot, and a fuscous wavy line beyond. Expanse 28 millim.

Two male specimens were taken by my native collector at Gensan in July, and he also obtained one example in the island of Kiushiu. Mr. Smith captured a male at Hakone in August, and I have received one from Chang-yang that was taken in May.

Distribution. Corea; Kiushiu; Central China.

Euchloris nigromacularia, sp. n.

Bright green. Primaries have the costa white and two white angulated transverse lines; the second line is followed on the inner margin by a ferruginous more or less quadrate patch; submarginal line white, interrupted. Secondaries have a blackish patch at outer angle extending along margin to third median nervule, this is limited by a white line which becomes broader below third median nervule and expands

into a pale ferruginous tinged patch at anal angle. Fringes pale greyish preceded by a series of black dots, these dots are largest on the secondaries and at inner angle of primaries; all the wings have a black discal dot. Under surface white, tinged with green on the primaries: secondaries have a black patch on outer margin interrupted by the nervules; discal dots as above.

Expanse 40 millim.

One female specimen from Chow-pin-sa, taken in June; and there was an example of the same sex in Pryer's collection, probably from Yokohama.

Distribution. Western China; Japan.

Euchloris ornataria, sp. n.

Bright green, striated with silvery white. Primaries have two silvery-white transverse lines, the first is slightly curved and the second is oblique and slightly undulated; there is a short upright violet bar on inner margin before angle, and a patch of the same colour at anal angle of secondaries; all the wings have a black discal dot. Fringes: of primaries whitish tinged with greenish, except at inner angle where they are violet; of secondaries violet, preceded by a blackish line below outer angle, thence by black dots on the nervules. Under surface whitish, tinged with green, especially on primaries; discal dots as above; violet markings faintly reproduced.

Expanse 32 millim.

Six male specimens from Pu-tsu-fong, taken in June.

Hab. Western China.

Euchloris obsoletaria, sp. n.

Green. Primaries have the costa white and two obscure whitish transverse lines, the first slightly curved and the second elbowed below the costa and indented above inner margin; all the wings have a blackish discal dot. Fringes whitish grey, preceded by a violet-brown line. Under surface: of primaries green, washed with whitish on the inner marginal area, with black discal dot and pale central line; of secondaries whitish, with a black discal dot and dusky greenish central line.

Expanse 32 millim.

One female specimen from the island of Kiushiu, and one taken by myself at Nagasaki in June.

Hab. Kiushiu.

Euchloris incomptaria, sp. n.

Pale bluish green without transverse lines. Primaries whitish on costa; there is a short upright violet-grey bar at inner angle and a patch of the same colour on outer angle of secondaries; outer marginal line of all the wings violet-grey. Under surface whitish with a faint greenish tinge; violet-grey markings faintly reproduced.

Expanse 33 millim.

One male specimen, without fringes to the wings, from Wa-shan, taken in July.

Hab. Western China.

Euchloris chlorophyllaria.

Phorodesma chlorophyllaria, Hedem. Horæ Soc. Ent. Ross. xiv. p. 510, pl. iii. fig. 7 (1878); Alph. Rom. sur Lép. vi. p. 53 (1892).

Phorodesma jankowskiaria, Mill.; Oberth. Etud. d'Entom. v. p. 47, pl. iv. fig. 7 (1880).

Alphéraky records this species from the Province of Kansou, July.

I received a male specimen from Pu-tsu-fong, taken in June or July.

Distribution. Amur; Askold; Western China.

Euchloris simpliciaris, sp. n.

Pale bluish green, with whitish fringes and a dusky discal dot on all the wings; the fringes are preceded by a dark line. Under surface whitish tinged with greenish, discal dots as above.

Expanse 30 millim.

One female specimen from Chang-yang, taken in August.

Hab. Central China.

Euchloris striataria, sp. n.

Pale green, striated with silvery white; costa of primaries whitish. Fringes whitish. Under surface whitish, slightly tinged with fuliginous on basal portion of costa.

Expanse 31 millim.

One female specimen from Che-tou, taken in July.

Hab. Western China.

Euchloris subtiliaris.

Euchloris subtiliaris, Brem. Lep. Ost-Sib. p. 76, pl. vi. fig. 23 (1864).

Racheospila nympha, Butl. Trans. Ent. Soc. Lond. 1881, p. 411.

Several specimens from Yokohama, Gifu, and Yesso in Pryer's collection.

I met with this species at Nikko in September, and my native collector obtained it in June at Ningpo and also in the island of Kiushiu.

I received examples from Moupin, Wa-ssu-kow, Chow-pin-sa, Wa-shan, and Che-tou, taken in June and July.

Distribution. Dharmśála ; Sikhim ; Nilgiris ; Ceylon ; Australia (*Hampson*) ; Amur (*Græser*) ; E. Siberia ; Japan ; Yesso ; Kiushiu ; Western China.

Euchloris radiata.

Thetidea (?) *radiata*, Walk. Cat. Lep. Het. xxvi. p. 1567 (1862).

Euchloris radiata, Hampson, Fauna Brit. Ind., Moths, iii. p. 498 (1895).

One female specimen from Huang-mu-chang, taken in July.

Distribution. Kulu ; Dharmśála (*Hampson*) ; Western China.

Genus COLUTOCERAS.

(Warren, Novit. Zool. ii. p. 88 (1895).)

Colutoceras diluta.

Colutoceras diluta, Warren, Novit. Zool. ii. p. 88 (1895).

Warren describes one male specimen from Kiushiu.

The insect I have described as *Euchloris obsoletaria* may possibly be the female of this.

Genus NEMORIA.

(Hüb. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 501 (1895).)

Nemoria viridaria.

Phal. Geometra viridata, Linn. Fauna Suec. 330.

Geometra viridata, Hüb. Geom. fig. 11 ; Treit. Schmett. vi. 1, 107 ;

Dup. Léop. vii. pl. cli. fig. 4.

Nemoria viridaria, Hüb. Verz. Schmett. p. 285 ; Guen. Phal. i. p. 346 ;

Meyrick, Trans. Ent. Soc. Lond. 1892, p. 94.

I took one specimen at Gensan in July, and I have received specimens from Chang-yang and Moupin which appear referable to this species.

Distribution. Europe ; Altai ; Amur ; Corea ; Central and Western China.

Nemoria gelida.

Nemoria gelida, Ill. Typ. Lep. Het. vii. p. 104, pl. cxxxvi. fig. 5 (1889).

One specimen from Huang-mu-chang, July.

Distribution. Dalhousie ; Kulu ; Dharmśála (*Hampson*) ; Western China.

Nemoria rectilinearis, sp. n.

Whitish green. Primaries have an almost straight whitish transverse line before the middle and an oblique one beyond the middle; the latter is continued on the secondaries. Fringes whitish, tinged with greenish. Under surface whitish, tinged with green; area beyond the whitish transverse line paler.

Expanse 24 millim.

Several examples of each sex from Huang-mu-chang, July.

Hab. Western China.

Allied to *N. indecretata*, Walk., but the line on secondaries is straighter and terminates nearer the anal angle, and the costa of primaries is pale brown.

Genus THALASSODES.

(Guen. Phal. i. p. 359; Meyrick, Fauna Brit. Ind., Moths, p. 507 (1895).)

Thalassodes gavissima.

Comibæna gavissima, Walk, Cat. Lep. Het. xxii. p. 575 (1861).

Berta gavissima, Moore, Lep. Ceyl. iii. p. 435, pl. cxvii. fig. 6 ♂ (1887).

Thalassodes gavissima, Hampson, Fauna Brit. Ind., Moths, iii. p. 510 (1895).

One specimen from Wa-shan, June.

Distribution. Simla; Sikhim; Ceylon (*Hampson*); Western China.

Thalassodes vallata.

Thalassodes vallata, Butl. Ill. Typ. Lep. Het. ii. p. 50, pl. xxxvi. fig. 9 (1878); Hampson, Fauna Brit. Ind., Moths, iii. p. 514 (1895).

Several specimens from Yokohama in Pryer's collection.

I met with this species at Nagasaki in May, Fushiki and Gensan in July, and at Hakodate in August.

Distribution. Sikhim; Khásis (*Hampson*); Japan; Kiushiu; Yesso; Corea.

Thalassodes parallelaria, sp. n.

Similar to *T. vallata*, Butl., but rather lighter green in colour. The first line of primaries approaches the second on the inner margin, and the latter is parallel with outer margin; both lines are white and without inward shading; the costa is narrowly whitish and immaculate. The transverse line of secondaries is also white and terminates nearer the middle of abdominal margin than the anal angle. Fringes white,

marked with rufous brown at angle of secondaries, and not preceded by a brown line.

Expanse 36 millim.

One male specimen from Moupin and one from Ni-tou, July.

Hab. Western China.

Thalassodes inconcinnaria, sp. n.

Green; all the wings have two obscure, wavy, whitish transverse lines, that on primaries beyond the middle is rather oblique. Fringes whitish tinged with green. Under surface paler than above and without transverse lines.

Expanse 33 millim.

One male specimen from Ta-chien-lu and one from Pu-tsu-fong, both taken in June.

Hab. Western China.

Thalassodes submacularia, sp. n.

Darkish olive-green, costa of primaries brownish marked with darker. All the wings have a darker, wavy, transverse line beyond the middle, and a dusky discal mark; the line on secondaries has a bidentate projection below the middle. Fringes of primaries brown, and those of secondaries pale brown dotted with darker above the angle, which is strongly produced. Under surface greenish white, with a large blackish patch at inner angle of primaries and outer angle of secondaries.

Expanse 41 millim.

One male specimen from Moupin and a female from Omei-shan, both taken in June.

Hab. Western China.

Thalassodes thetydaria.

Iodis thetydaria, Guen. Phal. i. p. 358 (1857).

Thalassodes bifasciata, Walk. Cat. Lep. Het. xxvi. p. 1562 (1862).

Thalassodes thetydaria, Hampson, Fauna Brit. Ind., Moths, iii. p. 509 (1895).

One male specimen from Che-tou and a female from Moupin, June and July.

Distribution. Sikhim; Sylhet (*Hampson*); Western China.

Thalassodes albistrigata.

Gelasma albistrigata, Warren, Novit. Zool. ii. p. 89 (1895).

Warren describes this species from Japan. I have not obtained any specimens of it.

Hab. Japan.

Genus THALERA.

(Hüb. ; Hampson, Fauna Brit. Ind., Moths, iii. p. 514 (1895).)

Thalera fimbrialis.

Phalæna fimbrialis, Scop. Ent. Carn. p. 216 (1763).

Geometra bupleuraria, Hüb. Geom. fig. 8.

Thalera bupleuraria, Hüb. Verz. Schmett. p. 285.

I took one male specimen at Gensan in July.

Distribution. Europe ; Asia Minor ; Amur ; Corea.

Thalera rufolimbaria.

Thalera rufolimbaria, Hedem. Horæ Ross. xiv. p. 512, pl. iii. fig. 5 (1878).

Thalera crenulata, Butl. Ill. Typ. Lep. Het. iii. p. 37, pl. 1. fig. 2 (1879).

There was a nice series in Pryer's collection from Yokohama and Yesso. I obtained the species in Satsuma in May, at Nagasaki and Fusan in June, and at Shimonoseki and Tsuruga in July. My native collector took it in the island of Kiushiu in July. I have also received specimens from Chang-yang, Ichang, Moupin, Pu-tsu-fong, and Huang-muchang.

The Japanese examples range in expanse from 22 millim. (♂) to 30 millim. (♀). A series taken at Chang-yang, Central China, in June, average 25 millim. in expanse, whilst the specimens taken at Ichang, Central China, in August, measure 2 millim. less in expanse.

Distribution. Amur ; Japan ; Yesso ; Kiushiu ; Central and Western China.

Thalera putata.

Phal. Geometra putata, Linn. Syst. Nat. x. p. 523 ; Clerck, Icon. pl. iii. fig. 9.

Geometra putataria, Hüb. Geom. fig. 10.

Iodis putataria, Hüb. Verz. Schmett. p. 286 ; Guen. Phal. i. p. 557.

Euchloris putata, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

This species seems to be generally distributed throughout Japan from May to August. I have also taken specimens at Gensan and in the island of Kiushiu. All are rather darker in colour than European examples.

Distribution. Europe ; Japan ; Corea ; Kiushiu.

Thalera prærupta.

Thalassodes prærupta, Butl. Ill. Typ. Lep. Het. ii. p. 49, pl. xxxvi fig. 5 (1878).

The type of this species was taken at Yokohama by Mr. Jonas.

Hab. Japan.

Thalera lactearia.

Phal. Geometra lactearia, Linn. Syst. Nat. x. p. 519; Clerck, Icon. pl. iii. fig. 12.

Iodis lactearia, Guen. Phal. i. p. 355.

Euchloris lactearia, Meyrick, Trans. Ent. Soc. Lond. 1892, p. 95.

There was one example from Yesso in Pryer's collection mixed up with *Hemitea marina*, Butl., and I took a specimen at Gensan in June and at Ningpo in April. My native collector obtained the species at Ningpo in June.

Distribution. Europe; Amur; Corea; Yesso; Eastern China.

Thalera ambigua.

Thalassodes ambigua, Butl. Ill. Typ. Lep. Het. ii. p. 49, pl. xxxvi. fig. 6

(1878). *Trans. Ent. Soc. Lond.* p. 262 (1892), see. *ibid.* p. 625

Specimens from Oiwake in Pryer's collection. I obtained specimens at Nagahama in July, and my native collector at Gensan also in July.

Distribution. Corea; Japan; Kiushiu; Ningpo.

Thalera sinuosaria, sp. n.

Green, each wing with two sinuous darker lines, the first edged inwardly with whitish, the second edged outwardly, expanding about the middle and above inner margin on primaries and before abdominal margin on secondaries; all the wings have a dark discal ring centred with white. Fringes slightly paler than the ground-colour and preceded on the secondaries by a darker line. Under surface silky white, the primaries tinged with greenish.

Expanse 28–34 millim.

Four examples of each sex.

Ta-chien-lu, Moupin, Pu-tsu-fong, Wa-shan, Omei-shan, and Ni-tou: June.

Hab. Western China.

Thalera flagellaria.

Hemitea flagellaria, Pouj. Ann. Soc. Ent. Fr. 1895, p. 310, pl. vi. fig. 8.

Two male specimens from Moupin (*Poujade*). I have received specimens from Ta-chien-lu, Ni-tou, Moupin, and Chang-yang: June, July, and August.

Hab. Central and Western China.

Thalera protrusa.

Thalera protrusa, Butl. Ill. Typ. Lep. Het. ii. p. 50, pl. xxxvi. fig. 10 (1878).

Four examples from Yokohama? in Pryer's collection. I captured a specimen at Fusan in June.

Hab. Japan and Corea.

Thalera colataria, sp. n.

Pale olive-green. Primaries have two wavy, whitish, transverse lines, the outer continued on the secondaries; there is an elongate discal mark on each wing. Under surface whitish, tinged with green. Fringes whitish, chequered with fuscous and preceded by a fuscous line. Outer margin of the wings crenulate, especially of secondaries, which are also angled at the extremity of the third median nervule.

Expanse 30-52 millim.

Specimens from Yokohama in Pryer's collection. I took the species in Satsuma in May and at Fusan in June, and I have received it from Gensan, Ningpo, the island of Kiushiu, Ichang, Chang-yang, and Moupin: taken in June in the three last-named localities.

Distribution. Japan; Kiushiu; Corea; Central, Western, and North-eastern China.

Similar to *T. protusa*, Butl., but easily separated by the chequered fringes, which are preceded by a dark line. In the Japanese specimen the outer margin of primaries is straighter than in the Chinese examples.

ADDENDA ET CORRIGENDA.

Synegia purpurascens.

Parasynegia purpurascens, Warren, Novit. Zool. i. p. 410 (1894).

Synegia rosearia, Leech, Ann. & Mag. Nat. Hist. (6) xix. p. 204 (1897).

Stegania hyriaria.

Heterostegane hyriaria, Warren, Novit. Zool. i. p. 406 (1894).

Stegania irroraria, Leech, Ann. & Mag. Nat. Hist. (6) xix. p. 203 (1897).

Genus PSEUDOTHALERA.

(Warren, Novit. Zool. ii. p. 153 (1895).)

*Pseudothalera stigmatica.**Pseudothalera stigmatica*, Warren, Novit. Zool. ii. p. 154 (1895).

Warren describes this species from Western China, and records two male specimens.

*Opisthograptis discriminaria.**Aspilatis discriminaria*, Walk. Cat. Lep. Het. xxiv. p. 1073 (1862); Butl. Ill. Typ. Lep. Het. iii. pl. lii. fig. 9 (1879).Also described by Walker from Shanghai. It appears to be a form of *Opisthograptis semilutata*, Led.*Tephрина irradiata.**Aspilatis irradiata*, Walk. Cat. Lep. Het. xxiv. p. 1072 (1862); Butl. Ill. Typ. Lep. Het. iii. pl. lii. fig. 8 (1879).Described by Walker from Shanghai. It is probably specifically identical with *Tephрина arenacearia*, Hübn.*Percnia albinigrata.**Percnia albinigrata*, Warren, Novit. Zool. iii. p. 395 (1896).Warren describes a female specimen from Nippon, Japan. I think it is not specifically distinct from *P. foraria*, Guen.

Genus SEBASTOSEMA.

(Warren, Novit. Zool. iii. p. 100 (1896).)

*Sebastosema bubonaria.**Sebastosema bubonaria*, Warren, Novit. Zool. iii. p. 100 (1896).

Warren describes one male specimen from Japan.

Tosaura (?) *pallida*, Warren, Novit. Zool. i. p. 380 (1894); *Aspilatis pallida* LeechWarren describes this species from Japan, and places it in *Orthostixinae*. I have not been able to see the type.*Anaitis perelegans.**Carsia perelegans*, Warren, Novit. Zool. i. p. 398 (1894).Closely allied to *A. plagiata*, Linn., and possibly only a Japanese form of that species.

Anaitis affinis.

Docirava affinis, Warren, Novit. Zool. i. p. 398 (1894).

I think this is not specifically distinct from *A. pudicata*, Guen. ~~and near *sinuata* group~~

Distribution. China and Japan (Warren).

Genus ATOMOPHORA.

(Alph. Rom. sur Léop. vi. p. 66 (1892).)

Atomophora falsaria.

Atomophora falsaria, Alph. Rom. sur Léop. vi. p. 66 (1892).

Alphéraky records one male specimen and three females from the province of Kan-sou, June and July.

Hab. Western China.

Rhodostrophia bisinuata.

Rhodostrophia bisinuata, Warren, Novit. Zool. ii. p. 98 (1895).

Warren describes one female specimen from Japan.

EXPLANATION OF THE PLATES.

[The descriptions of figs. 1, 6, 12, and 18 in Plate VIII. appear in the present volume (xx.); the remaining descriptions to Plates VII. and VIII. were published in vol. xix.]

PLATE VII.

- Fig. 1. *Cryptoloba rivularia*, sp. n., ♂, p. 550.
- Fig. 2. *Eubolia similaria*, sp. n., ♂, p. 554.
- Fig. 3. *Anaitis brunnearia*, sp. n., ♂, p. 553.
- Fig. 4. *Scotosia bipunctularia*, sp. n., ♂, p. 555.
- Fig. 5. *Eustroma fractifasciaria*, sp. n., ♀, p. 563.
- Fig. 6. *Plemyria parvularia*, sp. n., ♂, p. 571.
- Fig. 7. *Scotosia multilineararia*, sp. n., ♂, p. 555.
- Fig. 8. *Naxa margaritaria*, sp. n., ♂, p. 545.
- Fig. 9. *Scotosia latifasciaria*, Leech, ♂, p. 560.
- Fig. 10. — *interruptaria*, sp. n., ♂, p. 560.
- Fig. 11. *Plemyria hastata*, var. *chinensis*, nov., ♂, p. 570.
- Fig. 12. *Eustroma pulchraria*, sp. n., ♂, p. 566.
- Fig. 13. *Lobogonia conspicuaria*, sp. n., ♂, p. 551.
- Fig. 14. *Caripe cruciplaga*, var. *extremaria*, nov., ♂, p. 552.
- Fig. 15. *Lygranoa grisearia*, sp. n., ♀, p. 549.
- Fig. 16. *Emmesomia parallelaria*, sp. n., ♀, p. 546.
- Fig. 17. *Eustroma propriaria*, sp. n., ♂, p. 564.
- Fig. 18. *Plemyria bellaria*, sp. n., ♂, p. 573.

PLATE VIII.

- Fig. 1. *Rhodostrophia* (?) *sinuosaria*, sp. n., ♂, p. 108.
- Fig. 2. *Larentia fractifasciaria*, sp. n., ♂, p. 658.
- Fig. 3. *Plemyria castaria*, sp. n., ♂, p. 572.

- Fig. 4. *Cidaria albipunctaria*, sp. n., ♂, p. 642.
 Fig. 5. *Larentia nitidaria*, sp. n., ♂, p. 657.
 Fig. 6. *Hydrelia distinctaria*, sp. n., ♂, p. 80.
 Fig. 7. *Larentia grataria*, Leech, ♂, p. 656.
 Fig. 8. *Larentia* (?) *intersectaria*, sp. n., ♂, p. 667.
 Fig. 9. *Photoscotosia fasciaria*, sp. n., ♂, p. 672.
 Fig. 10. *Cidaria fervidaria*, sp. n., ♂, p. 646.
 Fig. 11. *Larentia tripunctaria*, sp. n., ♂, p. 666.
 Fig. 12. *Hydrelia electaria*, sp. n., ♂, p. 81.
 Fig. 13. *Cidaria postalbaria*, sp. n., ♂, p. 645.
 Fig. 14. *Larentia costinotaria*, sp. n., ♂, p. 670.
 Fig. 15. *Cidaria ochracearia*, sp. n., ♂, p. 643.
 Fig. 16. — *fulgidaria*, sp. n., ♂, p. 641.
 Fig. 17. — *subochraria*, sp. n., ♂, p. 647.
 Fig. 18. *Hydrelia angularia*, sp. n., ♂, p. 82.

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GEOLOGICAL SOCIETY.

May 12, 1897.—Dr. Henry Hicks, F.R.S.,
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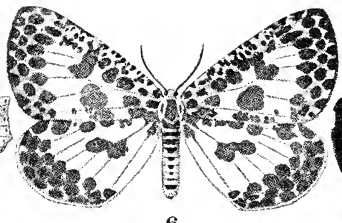
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Finally, by a study of the present distribution of the genera—particularly of those which form the predominating element in the fauna,—taken in conjunction with the other characters of the zone, the Author arrives at the conclusion that in England the *Reussianum*-zone was probably formed between the depths of 100 and 500 fathoms.



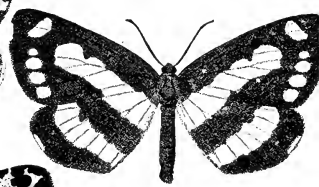
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Heterocallis truncaria (p. 212)



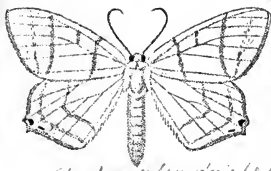
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Parabarro nigromaculata (p. 119)



11

Psychotropsia incaria (p. 119)



2

Grapha rubruncaria (p. 112)



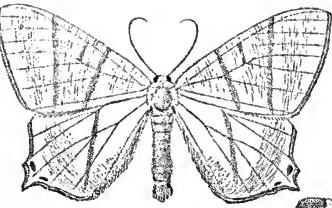
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Parabarro leucomyzaria (p. 119)



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Melipotis ciliaris (p. 221)



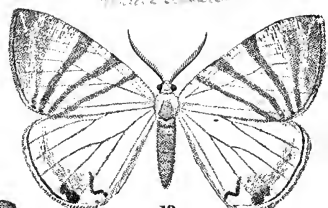
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Grapha similis (p. 112)



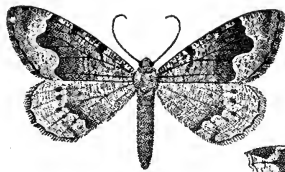
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Leucocera eudiposa (p. 211)



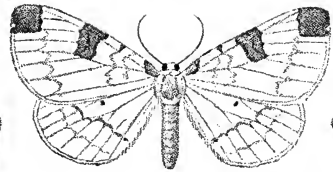
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Myrtila venosaria (p. 115)



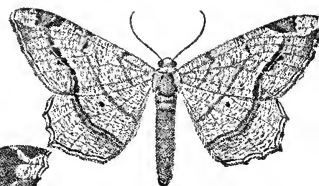
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Tranygchia pascuaria (p. 226)



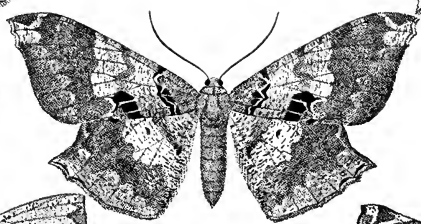
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Rumia trimaculata (p. 114)



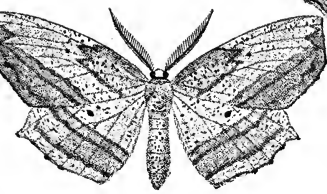
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Picaria longica (p. 111)

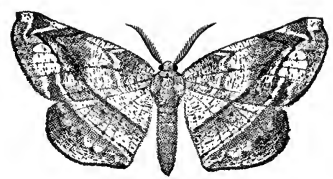


10

Tranygchia lucidaria (p. 205)



5



15

- Fig. 4. *Cidaria albipunctaria*, sp. n., ♂, p. 642.
 Fig. 5. *Larentia nitidaria*, sp. n., ♂, p. 657.
 Fig. 6. *Hydrelia distinctaria*, sp. n., ♂, p. 80.
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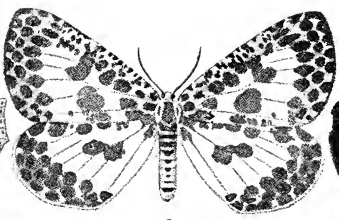
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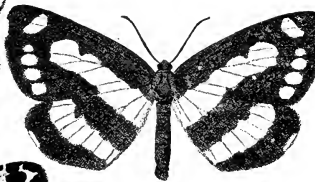
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Holorossia truncata (p. 212)



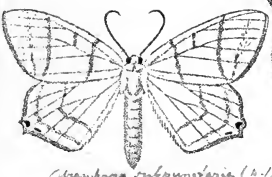
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Parabassar nigromaculata (p. 187)



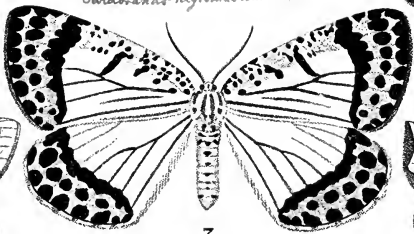
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Psychotrophia sicaria (p. 109)



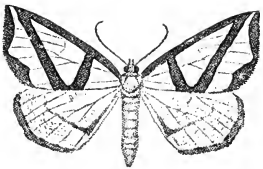
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Crotophaga subumbonaria (p. 112)



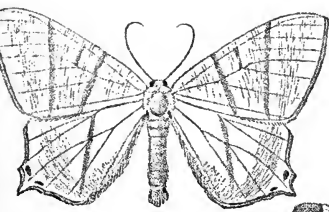
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Parabassar avomarginaria (p. 188)



12

Ventria silvatica (p. 181)



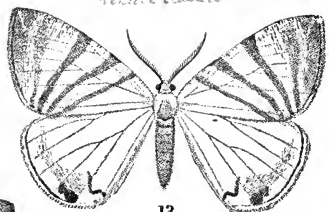
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Anaploperla similis (p. 192)



8

Z. scabra scabra (p. 251)



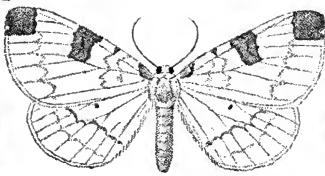
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Myrtila omenaria (p. 175)



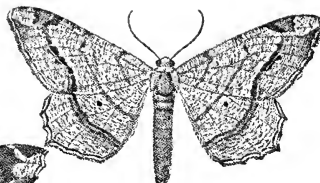
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Amnogypha praevaria (p. 226)



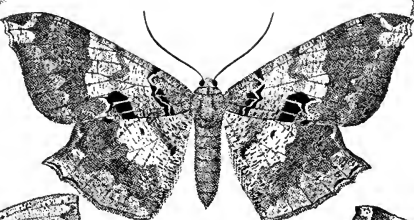
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Sumia trimaculata (p. 174)



14

Micane & nigra (p. 168)



10

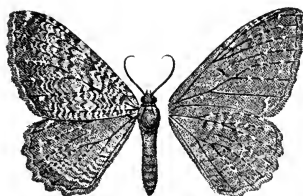
Francina unidaria (p. 205)







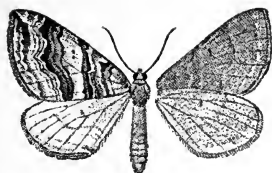
1
Crypsoloba similaris (p. 558)



7
Scotia multilinearis (p. 575)



13
Lebogone confusaria (551)



2
Scotia similaris (p. 554)



8
Naxa megariaria (p. 575)



14
Conige cruciatae v. extremaria (p. 551)



3
Anaitis brunnearia (p. 552)



9
Scotia (L.) laosaria (560)



15
Agranae grisearia (549)



4
Scotia bipunctularia (p. 555)



10
Scotia intermixta (p. 556)



16
Emmeonia parallelaria (546)



5
Eustoma leucilacaria (p. 553)



11
Pempria henea v. chinensis (570)



17
Eustoma propriaria (p. 564)



6

Pempria parvularia (p. 571)



12

Eustoma pulcherraria (566)



18

Pempria bellaria (p. 553)

