

# DESCRIPTIONS OF INDIAN MICRO-LEPIDOPTERA.

BY

E. MEYRICK, B.A., F.R.S., F.Z.S.

## III.

(Continued from page 417 of this Volume.)

Besides previously mentioned contributors, I have received material through the kindness of Major C. G. Nurse and Colonel C. Swinhoe, and also some obtained by native collectors in the Khasi Hills, a portion of which is included in the present instalment, as well as some sent by the Calcutta Museum, mostly collected by Mr. G. C. Dudgeon. Sixteen genera and sixty-one species are described as new.

### PTEROPHORIDÆ.

#### *Exelastis*, n. g.

Face smooth. Palpi moderate, slender, ascending, pointed. Tibiæ slender, smooth. Forewings cleft from  $\frac{1}{2}$ — $\frac{3}{5}$ , segments narrow, pointed, sometimes broader in ♀; 2 from near angle, 3 and 4 stalked from angle, 5 and 6 very short, 7 from near upper angle, 8 and 10 stalked, 9 absent, 11 from near angle. Hindwings cleft firstly from  $\frac{1}{3}$ , secondly from near base, segments very narrow, pointed, without scale-tooth in dorsal cilia; 2 remote, 3 and 4 stalked from angle, 5 and 6 absent.

Type *E. atomosa*, Wals. To this genus I also refer *liophanes*, Meyr., hitherto included in *Marasmarcha*.

#### *Exelastis atomosa*, Wals.

(*Aciptilia atomosa*, Wals., Proc. Zool. Soc. Lond. 1885, 885.)

The larva feeds in pods of *Cajanus indicus*, and has been bred freely by Mr. H. Maxwell-Lefroy. In this species the forewings are deeply cleft and the segments shorter and broader in the ♀ than in the ♂—an unusual circumstance.

### ORNEODIDÆ.

#### *Orneodes ochrozona*, n. sp.

♂ ♀. 19-22 mm. Head and thorax whitish-ochreous, sprinkled with dark fuscous. Palpi long, whitish-ochreous, second and terminal joints each with two bands of dark fuscous irroration, second joint with projecting scales above and beneath. Forewings light yellow-ochreous; costa with about twelve short whitish strigulæ edged with dark fuscous; apex suffused with blackish; basal third of wing irrorated with dark fuscous; median and subterminal zigzag bands of dark fuscous irroration, margined by whitish lines edged with dark fuscous, obsolete on costal lobe; apex of each lobe with a black dot. Hindwings as forewings, but costal lobe marked like the rest, median band nearer base.

Bhotan, in June; several specimens in collection of Calcutta Museum, to which I am indebted for examples. Near *sikkima*, Moore, but that is a grey species.

## EPIBLEMIDÆ.

*Chrosis ephippias*, n. sp.

♂ ♀. 11-16 mm. Head and thorax whitish-ochreous, sometimes partially tinged with brownish-ochreous. Abdomen grey, anal tuft whitish-ochreous. Forewings elongate, rather broader in ♀, costa gently arched, apex obtuse, termen straight, somewhat oblique; whitish-ochreous, strewn with brownish-ochreous strigulæ which are finely sprinkled with black; costa more sharply and darkly strigulated throughout; basal patch very obscurely indicated, edge obtusely angulated in middle; upper half of central fascia dark-brown, truncate beneath, posterior edge with a strong acute projection above truncation; rest of central fascia represented by an elongate dark-brown discal mark at  $\frac{2}{3}$ , its anterior end sometimes curved and connected with costal half, and a brown blotch with two upward diverging lobes on dorsum towards tornus; a triangular brown spot in disc towards apex; a small dark brown apical spot: cilia ochreous-whitish, sprinkled with fuscous, with dark fuscous subbasal line. Hindwings with 6 and 7 stalked, rather dark fuscous; cilia as in forewings.

Puttalam and Maskeliya, Ceylon (Pole, de Mowbray, Green, Vaughan); Bombay (Young); from July to April, twenty specimens.

*Proschistis*, n. g.

Palpi moderate, porrected. Antennæ in ♂ strongly fasciculate-ciliated (3). Thorax with small posterior crest. Forewings in ♂ without fold, termen sinuate; 7, 8, 9 approximated at base. Hindwings with 3, 4, 5 approximated at base, 6 and 7 approximated towards base.

Allied to *Eucosma*.

*Proschistis zaleuta*, n. sp.

♂ ♀. 18-25 mm. Head and thorax dark fuscous, irrorated and thorax sometimes partly suffused with whitish. Abdomen fuscous. Forewings elongate, slightly dilated, costa moderately arched, apex obtuse, termen sinuate, little oblique; white, sprinkled with dark fuscous and strewn with dark fuscous strigulæ, veins except posteriorly obscurely suffused with dark purplish-lead; costa spotted with dark fuscous; basal patch indicated by coalescence of dark fuscous strigulæ, but undefined; central fascia dark fuscous, narrow, irregular and undefined on upper half, broad and strongly marked on lower half; a subquadrate dark fuscous spot on costa towards apex, whence proceeds a narrow striga to tornus, sometimes confluent with a narrow transverse spot before middle of termen: cilia fuscous, irrorated with white and indistinctly barred with dark fuscous. Hindwings and cilia fuscous.

Maskeliya, Ceylon (Pole, Alston, de Mowbray, Green); from July to September, twenty specimens.

*Platypeplus tetracona*, n. sp.

♂ ♀. 24-29 mm. Head and thorax brownish-ochreous, sprinkled with dark fuscous. Abdomen light fuscous. Brush of posterior tibiæ whitish in ♂, shorter and ochreous-tinged in ♀. Forewings elongate, considerably dilated,

costa rather strongly arched, apex obtuse, termen hardly rounded, nearly vertical; ochreous-whitish, more or less strigulated variably with ochreous, ferruginous, or dark fuscous; triangular dark fuscous dorsal blotches indicating posterior portions of basal patch and central fascia, respectively; basal patch otherwise indicated by dark striæ, little defined, outer edge irregular; rest of central fascia deep ochreous, dark ferruginous, or dark fuscous, moderately broad, reaching from costa  $\frac{3}{4}$  across wing, then posteriorly with an abrupt upwardly oblique elongate lobe extending above the triangular dorsal blotch, but clearly separated from it; a broad similarly coloured triangular apical patch: cilia ochreous-whitish, suffusedly mixed with fuscous or dark fuscous, except towards tornus. Hindwings and cilia fuscous.

Maskeliya, Ceylon (de Mowbray, Alston, Pole); in February, March, and October, seven specimens.

*Eucosma crophias*, n. sp.

♂ ♀. 21-24 mm. Head and thorax grey, mixed with dark grey and whitish-ochreous, sometimes suffused with ferruginous; crest of thorax strong, bifid. Antennæ and abdomen rather dark grey. Forewings elongate, posteriorly dilated, costa moderately arched, apex obtuse, termen almost straight, somewhat oblique; dark purplish-fuscous, very finely irrorated with whitish, sometimes ferruginous-tinged, costa finely strigulated with dark and pale; dorsal area more or less suffused with whitish, its outline running from costa near base obliquely to fold, then forming a triangular projection upwards before middle, beyond this running upward in a straight line to apex, edged above with darker suffusion posteriorly, terminal area sometimes clearer whitish sometimes suffused with deep ferruginous; dorsum suffused with blackish towards base; a transverse-linear white mark in disc at  $\frac{2}{5}$ ; several minute black dots on termen, and a larger blackish dot before tornus: cilia whitish, ferruginous, or dark grey, variably intermixed, but always with small dark præapical and prætornal spots. Hindwings with 3 and 4 sometimes short-stalked; fuscous, darker towards termen; cilia fuscous-whitish, with two fuscous shades.

Simla (Nurse), Khasi Hills; in August and September, seven specimens.

*Sporocelis*, n. g.

Palpi moderate, porrected. Antennæ in ♂ shortly ciliated. Thorax with posterior crest. Forewings in ♂ without fold, termen subsinuate, surface with raised tufts; 7, 8, 9 approximated at base. Hindwings with 3 and 4 connate, 5 parallel, 6 and 7 closely approximated towards base.

Probably an early form in the line of development of *Eucosma*.

*Sporocelis marmaropa*, n. sp.

♂ ♀. 16-18 mm. Head and thorax dark fuscous, partially finely sprinkled with whitish. Abdomen fuscous, sprinkled with darker. Forewings elongate, dilated, costa gently arched, bent at  $\frac{3}{4}$ , apex obtuse, termen subsinuate, oblique; rather dark fuscous, strewn with blackish strigulæ, costa suffused with blackish; small scattered tufts of raised scales in disc; basal, antemedian, and

subterminal bands of purplish-leadens striæ interspersed with irregular white dots and scattered scales ; a larger white mark in disc beyond middle : cilia purplish-leadens, mixed with dark fuscous. Hindwings rather dark fuscous ; cilia fuscous.

Maskeliya, Ceylon ; in May and August, three specimens (de Mowbray, Pole).

*Epiblema ancyrota*, n. sp.

♂. 22-25 mm. Head and collar light brownish. Thorax grey-whitish, shoulders spotted with black, two dark grey dorsal dots. Abdomen grey. Forewings very elongate, narrow, gradually dilated, costa slightly arched, apex obtuse, termen subsinuate, little oblique, rounded beneath, costal fold strong, reaching from base to middle ; silvery-grey, closely irrorated with white, and strewn with more or less distinct dark fuscous strigulæ ; a broad dark brown suffusion, mixed with purplish-leadens, extending over costal half of wing from near base to  $\frac{2}{3}$ , then suddenly contracted and continued as a narrow and less defined costal suffusion to apex ; posterior half of costa with pairs of short whitish strigulæ ; an irregular dark fuscous spot in disc at  $\frac{1}{3}$ , resting on edge of dark costal suffusion ; a curved black linear mark from angle of costal suffusion at  $\frac{2}{3}$  ; a series of six or seven short black linear marks before termen ; a small dark fuscous apical spot : cilia grey, irrorated with white, suffused with white towards base, on upper part of termen suffused with brown towards tips. Hindwings with 3 and 4 stalked ; fuscous, becoming dark fuscous posteriorly ; cilia fuscous, with pale basal line.

Maskeliya, Ceylon ; in January, March, June, and August, five specimens (Pole, de Mowbray).

*Cydia porpota*, n. sp.

♂ ♀. 13-15 mm. Head and palpi whitish-fuscous, second joint of palpi tufted beneath, terminal very short. Thorax whitish, suffused with pale fuscous, except posteriorly. Abdomen light fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen nearly straight, faintly sinuate in middle, somewhat obliquely rounded beneath ; whitish ; costa suffused with fuscous, and obliquely strigulated with dark ferruginous-brown and whitish ; dorsum suffused with fuscous and strigulated with darker fuscous ; some scattered fuscous or dark fuscous strigulæ in disc anteriorly ; a small dark fuscous spot beneath fold at  $\frac{1}{3}$ , indicating angle of basal patch ; a narrow, undefined, fuscous and brown fascia from  $\frac{3}{5}$  of costa to before tornus, almost interrupted beneath costa, broadest on lower half and somewhat marked with black posteriorly ; a moderate round brown or fuscous spot towards apex, marked with about 6-8 variable black dots ; a ferruginous-brown stria from costa before apex to termen above tornus, preceded and followed by silvery-leadens striæ from costa ; a small ferruginous-brown apical spot : cilia fuscous, irrorated with white, with a white tornal patch. Hindwings with 3 and 4 long-stalked ; grey ; cilia grey-whitish, with two grey shades.

Mhow, in June ; four specimens (Swinhoe).

*Cydia clydonias*, n. sp.

♂ ♀. 22—24 mm. Head and thorax light fuscous, irrorated with fuscous-whitish. Abdomen fuscous. Forewings elongate, posteriorly somewhat dilated, costa gently arched, apex obtuse, termen slightly sinuate, little oblique, rounded beneath; fuscous, all scales finely tipped with whitish, sometimes with faint darker strigulæ; costal edge dark fuscous with pairs of oblique whitish strigulæ; a rather oblique more or less dark fuscous irregular streak from  $\frac{1}{4}$  of dorsum, reaching half across wing, sometimes almost wholly obsolete; a very oblique more or less defined fuscous mark from middle of costa, extremity curved up to near costa at  $\frac{3}{4}$ ; an irregular fuscous spot in middle of disc, partially marked with black and edged with whitish, two upper angles produced into elongate lobes, so as to form a crescent concave above, sometimes partially obsolete; a strongly upcurved fuscous mark, edged with black and then with whitish, from near posterior arm of this spot to middle of termen, always well defined, from anterior extremity of which proceed one or two darker strigæ to tornus; a small blackish-fuscous apical spot: cilia fuscous, towards tornus whitish-fuscous. Hindwings with 3 and 4 connate; fuscous, darker towards termen; cilia fuscous, with darker sub-basal line.

Wellawaya, Ceylon (Green); Muok-lek, Siam (Swinhoe); in November and January, seven specimens.

*Laspeyresia tricentra*, n. sp.

♂ ♀. 11-13 mm. Head and thorax rather dark fuscous, closely irrorated with ochreous-grey-whitish. Abdomen fuscous. Forewings elongate, lightly dilated, costa slightly arched, apex obtuse, termen sinuate, little oblique; rather dark fuscous, finely irrorated with ochreous-grey-whitish, with indistinct darker transverse striæ; a series of short oblique dark fuscous strigæ from costa, alternating with bluish-lead-metallic strigæ which rise from pairs of pale costal strigulæ, becoming longer posteriorly; a very faint hardly paler slightly leaden-tinged subtriangular blotch on middle of dorsum; ocellus laterally margined with leaden-metallic, marked with three somewhat elongate black dots touching posterior edge: cilia fuscous, irrorated with whitish. Hindwings dark fuscous, lighter towards base; cilia pale fuscous, with dark fuscous basal line.

Maskeliya, Peradeniya, and Puttalam, Ceylon; Travancore, Mhow, Bombay, Poona (Pole, Green, Swinhoe); ten specimens. Larva feeds in stems of *Crotalaria* ("Dekkan hemp") (Green). This is the insect recorded in Swinhoe's Catalogue (No. 4768) as *Dichrorampha subsequana*, Haw., an erroneous identification. I have seen Swinhoe's original specimens; there is no reason to suppose that the true *subsequana* occurs in India, and it should be removed from the list.

## TORTRICIDÆ.

*Oxygrapha dictyodes*, n. sp.

♂ ♀. 16-18 mm. Head, thorax, and abdomen grey. Forewings elongate, oblong, costa strongly arched towards base, slightly roughened with

scales towards  $\frac{1}{3}$ , faintly sinuate in middle, apex round-pointed, termen sinuate, oblique; fuscous, finely and densely irrorated with white, appearing pale grey; veins and numerous transverse strigulae fuscous, forming an irregular network; five slender transverse fuscous striae mixed with black slightly raised scales, first marking edge of basal patch, angulated in middle, second and third marking edges of central fascia, second slightly curved, third irregular, fourth from  $\frac{2}{3}$  of costa to tornus, fifth from costa near apex to near middle of termen; costa sometimes with a triangular grey or fuscous suffusion, extending from second stria to fifth: cilia grey, sprinkled with whitish, with blackish-grey subbasal line. Hindwings light grey, faintly strigulated with darker; cilia as in forewings.

Maskeliya, Ceylon, in August, January, and February; five specimens (Pole, de Mowbray, Alston).

*Oxygrapha loxoscia*, n. sp.

♂ ♀. 14-16 mm. Head and thorax reddish-ochreous, tinged with purplish. Abdomen whitish-ochreous-grey. Forewings elongate, rather narrow, hardly dilated, costa anteriorly moderately, posteriorly slightly arched, apex round-pointed, termen slightly sinuate, oblique; ochreous or ferruginous, in lighter specimens obscurely strigulated with fuscous, in darker specimens with indistinct purplish-leadene transverse strigae; scattered minute black dots of raised scales; an oblique undefined fuscous shade from  $\frac{3}{5}$  of costa to middle of dorsum: cilia ochreous, between apex and tornus light ochreous-yellowish, on tornus suffused with grey. Hindwings ochreous-grey-whitish, in ♀ suffused with pale grey posteriorly; cilia ochreous-whitish, in ♀ greyish-tinged.

Maskeliya, Ceylon, in October; six specimens (Pole, Alston).

*Tortrix encausta*, n. sp.

♂ 23-25 mm. ♀ 32-34 mm. Head and thorax light brownish-ochreous. Palpi very short, with appressed scales, subascending. Abdomen in ♂ greyish-ochreous, in ♀ yellow-ochreous. Forewings moderately broad, in ♂ narrowed anteriorly, in ♀ sub-oblong, costa towards base in ♂ gently, in ♀ strongly arched, thence in ♂ nearly straight, in ♀ sinuate, apex obtuse, termen in ♂ hardly sinuate, little oblique, in ♀ strongly sinuate beneath apex, bowed beneath, vertical; brownish-ochreous, with fine scattered grey or dark grey strigulae, chiefly towards margins, often more or less suffused with light purplish-fuscous; basal patch represented in ♂ by a very dark green trapezoidal blotch resting on dorsum towards base, reaching half across wing, in ♀ by a small irregular dark green transverse mark beneath costa at  $\frac{1}{6}$ ; in ♂ upper half of central fascia very dark green, irregular, becoming brown on costa, in ♀ this mark is broken up and much reduced, rising on costa nearer base at  $\frac{1}{3}$ ; three small semi-oval dark brown marks on posterior half of costa: cilia pale brownish-ochreous, tips brown, except towards tornus. Hindwings in ♂ fuscous, towards costa posteriorly sometimes slightly tinged with orange, and strigulated with darker; in ♀ light ochreous-orange, towards dorsum sometimes slightly infuscated, posteriorly strigulated with fuscous, terminal edge

sometimes fuscous ; cilia in ♂ fuscous, in ♀ light fuscous.

Peradeniya, Maskeliya, Gampola, Ceylon, from May to January ; fourteen specimens (Pole, Green, Alston).

*Ulodemis*, n. g.

Antennæ in ♂ shortly ciliated, with dorsal notch in stalk near base. Palpi rather long, porrected. Thorax without crest. Forewings with 7 and 8 stalked, 7 to termen. Hindwings with 3 and 4 connate, 5 closely approximated at base, 6 and 7 connate or short-stalked.

Apparently allied to *Pandemis*.

*Ulodemis trigrapha*, n. sp.

♂ ♀. 20-23 mm. Head, palpi, and thorax brown, forehead in ♂ with blackish spot. Abdomen bronzy-grey. Forewings elongate-oblong, costa anteriorly moderately arched, posteriorly slightly sinuate, apex obtuse, termen in ♂ almost straight, somewhat oblique, in ♀ somewhat sinuate, hardly oblique, rounded beneath ; brown, more or less strewn with blackish-grey strigulæ, in ♀ sometimes hardly perceptible ; three obscure slender whitish oblique transverse lines, nearly straight and tolerably parallel, indicating edge of basal patch and margins of moderate central fascia, which are hardly darker than ground colour : cilia brown, tips pale. Hindwings in ♂ with subdorsal groove containing expansible hair-pencil ; grey ; cilia light grey, with darker basal line.

Bhotan (3,000 feet) in April, May and August ; three specimens (Dudgeon).

#### GELECHIADÆ.

*Thyrsostoma*, n. g.

Head smooth ; tongue developed. Antennæ  $\frac{3}{4}$ , in ♂ moderately ciliated (1), basal joint very long, without pecten, second joint also elongate, about half basal, its apex angularly prominent above. Labial palpi long, recurved, second joint with very long fine expansible fringe of hairs beneath, terminal joint as long as second, thick, tolerably pointed. Maxillary palpi rudimentary. Posterior tibiæ with three tufts of scales above. Forewings with 4 absent, 7 and 8 stalked, 7 to costa, 9 absent, 11 from beyond middle. Hindwings  $\frac{1}{2}$ , very narrowly elongate-trapezoidal, acutely pointed from  $\frac{3}{4}$ , cilia 4 ; 2-5 parallel, 6 and 7 approximated towards base.

Apparently related to *Aristotelia*.

*Thyrsostoma glaucitis*, n. sp.

♂. 12-13 mm. Head and thorax shining white. Palpi white, apex greyish. Antennæ white, stalk grey above. Abdomen pale shining silvery-grey, basal half dorsally greyish-ochreous. Forewings linear-lanceolate, widest near base, gradually attenuated to acute apex ; grey with pale metallic-blue reflections ; a narrow inwardly oblique whitish fascia at  $\frac{1}{3}$  ; an ill-defined irregular whitish discal spot at  $\frac{2}{5}$  : cilia light grey. Hindwings and cilia grey, towards base paler and ochreous-tinged.

Peradeniya, Ceylon, in June ; two specimens bred "from mango leaf" (Green).

*Pachnistis*, n. g.

Head with appressed scales ; tongue developed. Antennæ  $\frac{3}{4}$ , in ♂ rather thick, serrate, basal joint moderate, without pecten. Labial palpi long, recurved, second joint considerably thickened with appressed scales, terminal joint rather longer than second, stout, compressed, acute. Maxillary palpi rudimentary. Posterior tibiae clothed with rather short rough scales. Forewings with 1b furcate, 2 and 3 stalked from angle, 7 and 8 stalked, 7 to costa, 9 absent, 11 from middle. Hindwings 1, trapezoidal, apex obtuse, termen slightly sinuate, cilia  $\frac{2}{3}$ ; 3 and 4 connate, 5 tolerably parallel, 6 and 7 stalked.

Allied to *Protolechia*.

*Pachnistis cephalochra*, n. sp.

♂. 15 mm. Head pale whitish-ochreous. Palpi whitish-ochreous, second joint dark fuscous except towards apex, terminal joint with two or three dark fuscous scales. Antennæ dark fuscous. Thorax and abdomen rather dark fuscous, paler-mixed. Forewings elongate, costa gently arched, apex obtuse, termen slightly rounded, rather oblique ; rather dark fuscous, sprinkled with light greyish-ochreous : cilia light fuscous, sprinkled with darker. Hindwings fuscous, paler towards base ; cilia light greyish-ochreous, sprinkled with fuscous.

Bhotan (4,500 feet), in July ; two specimens (Dudgeon).

*Tiriza*, Walk.

This name supersedes *Macrotona*, Meyr.; I have recently obtained the type-species from Borneo.

*Tiriza trigonopsis*, n. sp.

♂. 21-24 mm. Head and thorax glossy whitish-ochreous, shoulders fuscous. Palpi ochreous-whitish, second joint fuscous except at apex, terminal longer than second. Antennæ ochreous-whitish, thinly ciliated ( $1\frac{1}{2}$ ). Abdomen pale greyish, apex whitish-ochreous. Forewings elongate, narrow, costa slightly arched, subsinuate in middle, apex obtuse, termen sinuate, oblique ; light fuscous or brownish, suffusedly mixed with whitish-ochreous ; a suffused dark fuscous spot on base of costa ; an elongate-triangular dark fuscous patch extending in disc from near base to  $\frac{1}{3}$  ; an undefined dark fuscous dot beneath costa just beyond this ; a small triangular dark fuscous spot in disc at  $\frac{3}{5}$  ; a pale line, preceded by darker suffusion, from  $\frac{3}{4}$  of costa to  $\frac{4}{5}$  of dorsum, slightly indented above middle : cilia whitish-ochreous, with a pale fuscous antemedian shade. Hindwings whitish-grey ; cilia whitish-ochreous.

Simla, in May ; two specimens (Nurse).

*Lecithocera plocamandra*, n. sp.

♂ ♀. 15-16 mm. Head and thorax fuscous, face paler, frontal fillet white. Palpi whitish-fuscous, terminal joint anteriorly dark fuscous. Antennæ white. Abdomen greyish-ochreous, anal tuft yellowish-ochreous. Posterior tibiae in ♂ with large expansible tuft of very long pale ochreous-yellowish hairs from base above. Forewings elongate, narrow ; costa gently arched, apex round-

pointed, termen nearly straight, oblique ; 8 and 9 out of 7, 7 to termen ; light fuscous : cilia pale fuscous, tips more whitish. Hindwings in ♂ beneath with large expansible tuft of very long pale ochreous-yellowish hairs from base of dorsum ; light fuscous, somewhat lighter towards base ; cilia as in forewings.

Sikkim (1,800 feet), Bhotan ; in May and July, three specimens (Dudgeon).

*Brachmia arcifera*, n. sp.

♂ ♀. 14-15 mm. Head and thorax dark bronzy-fuscous, sides of crown with a whitish-ochreous line. Palpi dark fuscous, terminal joint longer than second, ochreous-whitish in front. Antennæ ochreous-whitish, spotted with fuscous beneath. Abdomen grey. Forewings elongate, rather narrow, costal gently arched, apex round-pointed, termen concave, oblique ; 2 and 3 long-stalked, 8 and 9 out of 7, 7 to termen ; dark purplish-bronzy-fuscous ; stigmata blackish, plical and first discal confluent, edged posteriorly by a slightly curved ochreous-whitish line from  $\frac{2}{5}$  of costa to middle of dorsum, second discal obscurely edged with whitish and with an additional similar dot beneath it ; an ochreous-whitish dot on costa at  $\frac{4}{5}$  : cilia fuscous, base obscurely paler. Hindwings and cilia fuscous.

Bhotan, in June ; two specimens (Dudgeon).

*Thymiatris*, n. g.

Head with loosely appressed hairs ; tongue obsolete. Antennæ  $\frac{3}{5}$ , in ♂ moderately ciliated (1), basal joint elongate, stout, without pecten. Labial palpi rather long, recurved, second joint with rough projecting scales beneath, terminal joint shorter than second, rather loosely scaled, pointed. Maxillary palpi rudimentary. Anterior tarsi thickened with rough projecting scales throughout ; posterior tibiae rough-haired above and beneath. Forewings with 1b long-furcate, 2 from  $\frac{4}{5}$ , 8 and 9 out of 7, 7 to apex, 10 remote, 11 from before middle. Hindwings considerably over 1, trapezoidal-ovate, termen not sinuate, cilia  $\frac{1}{6}$  ; 3 and 4 short-stalked, 5 parallel, 6 and 7 stalked.

Allied to *Brachmia*.

*Thymiatris melitacma*, n. sp.

♂. 42-44 mm. Head and palpi pale ochreous, palpi suffused with dark fuscous towards base. Antennæ dark fuscous towards base, pale ochreous above. Thorax whitish, irrorated with fuscous. Abdomen pale greyish-ochreous. Forewings very elongate, narrow, gradually slightly dilated, costa almost straight, apex rounded-obtuse, termen slightly rounded, hardly oblique ; ochreous-whitish, irrorated with fuscous and dark fuscous, costa and subcostal veins suffused with dark fuscous ; two cloudy dark fuscous dots placed transversely in disc beyond  $\frac{2}{5}$  ; traces of a cloudy darker angulated subterminal line ; an ochreous-yellowish streak mixed with fuscous round apex and termen to near tornus : cilia whitish-ochreous, tips and an antemedian line ochreous-fuscous mixed with dark fuscous. Hindwings and cilia whitish-ochreous, cilia with an interrupted fuscous subbasal line.

Khasi Hills ; two specimens.

## XYLORYCTIDÆ.

*Æolanthès*, n. g.

Head with appressed scales, side-tufts erect and meeting above crown; tongue developed. Antennæ  $\frac{4}{5}$ , stout, flattened, in ♂ simple, basal joint short, without pecten. Labial palpi long, curved, ascending, second joint thickened with scales, somewhat rough towards apex beneath, terminal joint much shorter than second, thick, pointed. Maxillary palpi rudimentary. Thorax with posterior crest. Posterior tibiæ rough-haired above. Forewings with anterior costal scale-projection; 1 b furcate, 2 and 3 stalked from angle, 7 and 8 stalked, 7 to termen, 9 closely approximated to 7, 11 from middle. Hindwings, 1, trapezoidal, apex obtuse, termen hardly sinuate, cilia  $\frac{1}{2}$ ; cell shorter in ♂, less than half wing, 3 and 4 stalked, 5 somewhat approximated, 6 and 7 stalked, upper margin of cell curved upwards, but not connected with 8.

Type *Æ. callidora*.

*Æolanthès callidora*, n. sp.

♂ ♀. 21-24 mm. Head and thorax brown, mixed with ochreous and whitish. Palpi ochreous-brown, terminal joint fuscous, somewhat sprinkled with whitish. Antennæ and abdomen fuscous. Forewings elongate, moderately broad, costa gently arched, with broad scale-projection before middle, apex obtuse, termen rather oblique, in ♂ nearly straight, in ♀ more rounded; deep orange-ochreous, more orange towards costa; a narrow white median longitudinal streak from near base to middle, edged with grey; space between this and costa broadly suffused with white, towards costal scale-protuberance white mixed with leaden-grey; a dark red-brown streak along dorsum from near base to  $\frac{3}{4}$ , edged with purplish-grey suffusion, and posteriorly dilated into a triangular spot edged with white; a transverse discal mark at  $\frac{3}{5}$  and some irregular suffused spots between veins beyond and above this pale yellow; an oblique white mark beneath costa towards apex and two or three dots beneath it, preceded by some red-brown suffusion; between this and apex some leaden-grey suffusion beneath costa; an irregular interrupted white streak along termen: cilia ochreous, mixed with darker and whitish. Hindwings pale greyish-ochreous, with fine scattered dark fuscous hair-scales, especially towards tornus; cilia ochreous-whitish, towards tornus with fuscous subbasal shade.

Khasi Hills; three specimens (Swinhoe).

*Æolanthès rhodochrysa*, n. sp.

♂. 18-19 mm. Head pale ochreous. Palpi deep ochreous mixed with fuscous; subapical ring of second joint and basal, median, and apical rings of terminal joint whitish-ochreous. Antennæ ochreous-fuscous. Thorax deep orange-ochreous. Abdomen grey. Forewings elongate, moderate, costa anteriorly moderately, posteriorly gently arched, with broad scale-projection before middle, apex obtuse, termen nearly straight, oblique; deep orange-ochreous suffused with yellow, and partially tinged with crimson; an oblique spot of crimson suffusion in disc towards base; a broad curved oblique whitish fascia from costa before middle, suffused with yellowish posteriorly, becoming broken

up in disc and not reaching dorsum ; beyond this a narrower fascia of purplish-crimson suffusion, edges irregularly dentate and marked with dark fuscous, obsolete towards dorsum, an acute median projection of posterior edge followed by some whitish suffusion ; a pale crimson streak mixed with white round apex and tornus : cilia deep yellow, obscurely barred with yellow-whitish, above apex suffused with orange on basal half. Hindwings pale grey, darker towards tornus ; cilia whitish-yellowish.

Khasi Hills ; two specimens.

*Paradoris*, n. n.

I propose this name for the genus described by Heinemann under the name of *Euteles*, which is preoccupied in *Coleoptera* (1834).

*Paradoris anaphracta*, n. sp.

♂. 12-13 mm. Head ochreous-whitish, slightly sprinkled with fuscous. Palpi fuscous irrorated with blackish, apex of second joint white, terminal joint whitish with a few dark fuscous specks. Antennæ fuscous. Thorax ochreous-whitish sprinkled with fuscous, shoulders narrowly dark fuscous. Abdomen pale ochreous, more or less suffused with fuscous. Forewings elongate, rather narrow, costa gently arched, apex obtuse, termen very obliquely rounded ; ochreous-whitish or pale whitish-ochreous, thinly sprinkled with fuscous ; a small blackish spot on base of costa ; stigmata blackish, plical somewhat beyond first discal, second discal connected by a slightly incurved blackish streak with dorsum before tornus, followed by an undefined band of darker irroration from  $\frac{3}{4}$  of costa to tornus ; undefined spots of blackish irroration round apex and termen : cilia ochreous-whitish. Hindwings grey ; cilia pale whitish-ochreous.

Bhotan (4,500 feet), from May to July ; three specimens (Dudgeon).

*Ptochoryctis rosaria*, n. sp.

♂ ♀. 23-24 mm. Head, thorax, and abdomen snow-white. Palpi and antennæ grey. Forewings elongate, moderately broad, costa moderately arched, apex rounded-obtuse, termen obliquely rounded, shining snow-white ; a sub-marginal series of seven black dots round apex and termen : cilia white. Hindwings and cilia white.

Bhotan, in April and May ; two specimens (Dudgeon).

*Trypherantis*, n. g.

Head with appressed scales, side-tufts loosely raised ; tongue obsolete. Antennæ  $\frac{3}{4}$ , in ♂ moderately ciliated, basal joint moderate, without pecten. Labial palpi long, recurved, with appressed scales, terminal joint somewhat shorter than second, acute. Maxillary palpi rudimentary. Posterior tibiae clothed with rough hairs above. Forewings with 16 furcate, 2 from  $\frac{4}{5}$ , 4 and 5 approximated, 7 and 8 stalked, 7 to termen, 9 absent, 11 from about middle. Hindwings over 1, ovate, cilia  $\frac{1}{4}$  ; 3 and 4 stalked, 5 parallel, 6 and 7 short stalked.

Apparently allied to *Ptochoryctis*.

*Trypherantis atelogramma*, n. sp.

♂. 24-26 mm. Head, palpi, and antennæ ochreous-whitish, base of palpi fuscous. Thorax and abdomen whitish-ochreous. Forewings elongate, pos-

teriorly dilated, costa gently arched, apex rounded-obtuse, termen rather obliquely rounded; whitish-ochreous; all veins marked by rather irregular lines of blackish irroration, broadly obsolete towards base and ceasing abruptly near other margins, streak of transverse vein more or less dilated; an interrupted blackish line round apex and termen: cilia whitish-ochreous, with an obscure interrupted fuscous antemedian line. Hindwings whitish-ochreous; a terminal series of fuscous marks; cilia whitish-ochreous.

Bhotan, Sikkim, in May and June; three specimens (Dudgeon).

*Epimactis*, n. g.

Head loosely haired; tongue developed. Antennæ  $\frac{4}{5}$ , in ♂ strongly ciliated (2), basal joint moderate, without pecten. Labial palpi long, recurved, second joint with appressed scales, terminal joint shorter than second, slender, acute. Maxillary palpi rudimentary. Posterior tibiæ clothed with long hairs above. Forewings with 1b furcate, 2 from towards angle, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, trapezoidal-ovate, cilia  $\frac{1}{3}$ ; 4 absent, 3 and 5 approximated at base, 6 and 7 stalked.

Allied to *Myriopleura* and *Trichernis*.

*Epimactis monodoxa*, n. sp.

♂ ♀. 19-23 mm. Head, palpi, antennæ, thorax, and abdomen whitish-ochreous, slightly yellowish-tinged. Forewings elongate, costa moderately arched, apex rounded-obtuse, termen obliquely rounded; whitish-ochreous, yellowish-tinged, towards dorsum slightly tinged with brownish; discal stigmat fuscous, first minute, second moderate, round: cilia whitish-ochreous. Hindwings in ♂ light grey, in ♀ whitish-ochreous; cilia whitish-ochreous.

Bhotan, in June; four specimens (Dudgeon).

#### CECOPHORIDÆ.

*Lactistica*, n. g.

Head with loosely appressed hairs; tongue obsolete. Antennæ  $\frac{3}{4}$ , in ♂ strongly ciliated with fascicles (3), basal joint stout, without pecten (?). Labial palpi moderately long, recurved, second joint much thickened with dense rough projecting scales beneath, almost tufted anteriorly, terminal joint shorter than second, moderate, acute. Maxillary palpi rudimentary. Abdomen rather elongate. Anterior tibiæ and tarsi thickened with dense hair-scales, posterior tibiæ and tarsi sometimes greatly elongated. Forewings with tufts of raised scales in disc; 1b furcate, 2, 3, 4 closely approximated from angle, 7 and 8 stalked, 7 to apex, 11 from before middle. Hindwings, elongate-ovate, cilia  $\frac{1}{4}$ ; 3 and 4 connate, 5-7 parallel.

Type *L. geranodes*. This curious genus is perhaps related to *Chimabache*.

*Lactistica geranodes*, n. sp.

♂. 47 mm. Head, palpi, antennæ, thorax, and abdomen grey mixed with dark fuscous. Legs dark grey, anterior pair mixed with whitish and blackish, posterior tibiæ very elongate, tufted with scales towards apex above and externally, posterior tarsi greatly elongate, half as long again as tibiæ, at apex with tuft of scales above. Forewings elongate, narrow, costa almost straight,

apex obtuse, termen somewhat sinuate, oblique; rather dark fuscous, sprinkled with white and irrorated with black; posterior edge of cell marked by an oblique white line; a submarginal series of white interneural marks round posterior third of costa and termen, followed by terminal spots of blackish suffusion, extremities of veins between these light reddish: cilia dark fuscous, with a white spot beneath tornus. Hindwings rather dark fuscous, with traces of a submarginal whitish line round apex and upper part of termen; cilia white, with dark fuscous subbasal line.

Khasi Hills; one specimen. The great development of the posterior tibiae and tarsi is a very singular feature.

*Lactistica demotarcha*, n. sp.

♂ ♀. 59-60 mm. Head whitish-ochreous, with a blackish mark on middle of crown. Palpi ochreous-whitish, second joint mixed with dark fuscous, terminal joint with dark fuscous median band. Antennae whitish ochreous, rounded-dentate. Thorax whitish-ochreous, with a dorsal stripe mixed with brown and blackish. Abdomen dark fuscous, segmental margins whitish-ochreous, preceded by ferruginous rings, and tuft whitish-ochreous. Anterior and middle tibiae ochreous mixed with reddish, black, and whitish, with expansible tuft of black scales towards apex, anterior tarsi roughened with whorls of scales, all coxae with patches of black scales, posterior legs normal, ochreous-whitish spotted with blackish, tibiae long-haired above. Forewings elongate, narrow, costa gently arched, apex rounded, termen very obliquely rounded; whitish-ochreous, partially faintly pinkish-tinged, irregularly irrorated with ochreous-brown, especially towards termen; a blackish dot on base of costa; stigmata raised, mixed with black, plical and first discal small, plical beneath first discal, second discal large, roundish, a similar spot on fold obliquely before second discal; a submarginal series of white dots or marks preceded by black irroration or suffusion round posterior part of costa and termen: cilia whitish-ochreous mixed with blackish. Hind-wings and cilia whitish-ochreous.

Khasi Hills; two specimens.

*Eulechria phabas*, n. sp.

♀. 15-16 mm. Head, palpi, and thorax ochreous-yellow. Antennae pale yellowish, towards apex ringed with dark fuscous. Abdomen grey, apex yellowish. Forewings elongate, rather narrow, costa gently arched, apex roundpointed, termen nearly straight, very oblique; rather deep ochreous-yellow, posteriorly slightly brownish-tinged; base of costa narrowly dark fuscous; stigmata black, plical obliquely beyond first discal, a small additional black dot beneath second discal: cilia yellow. Hindwings grey; cilia whitish-ochreous.

Bhotan (4,500 feet), in June; four specimens (Dudgeon).

*Mylothra*, n. g.

Head loosely haired, sidetufts raised; tongue apparently rudimentary. Antennae  $\frac{4}{5}$ , in ♂ filiform, simple, basal joint moderate, without pecten. Labial palpi long, recurved, second joint thickened with dense scales, somewhat rough

beneath towards apex, terminal joint as long as second, moderate, acute. Maxillary palpi rudimentary. Posterior tibiae clothed with long hairs. Forewings with 1b furcate, 2 and 3 stalked from angle, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, elongate-ovate, cilia almost 1; 3 and 4 connate, 5-7 tolerably parallel.

Allied to *Phaeosaces*.

*Mylothra creseritis*, n. sp.

♂ ♀. 19-20 mm. Head and thorax whitish-ochreous, edge of shoulders infuscated. Palpi ochreous-whitish, second joint irrorated with dark fuscous. Antennæ fuscous. Abdomen whitish-ochreous, sprinkled with fuscous. Forewings elongate, rather narrow, costa gently arched, apex rounded-obtuse, termen obliquely rounded, whitish-ochreous, very finely and thinly sprinkled with fuscous; stigmata and a prætornal dot very faintly indicated by similar irroration, plical beneath first discal: cilia whitish-ochreous. Hindwings pale grey irrorated with dark grey; cilia pale greyish-ochreous, with two faint fuscous shades.

Quetta, in June and July; two specimens (Nurse).

#### STENOMIDÆ.

*Agriophara argoplaca*, n. sp.

♂. 25-23 mm. Head whitish-ochreous, sides of face more or less infuscated, crown posteriorly brownish. Palpi whitish-ochreous, second joint infuscated, towards base dark fuscous. Antennæ fuscous, ciliations 7. Thorax pale fuscous. Abdomen light greyish-ochreous. Forewings elongate, posteriorly dilated, costa gently arched, apex obtuse, termen rather obliquely rounded; 2 from angle of cell; dark bronzy-brown, becoming whitish-fuscous towards dorsum and termen; a broad white patch extending along costa from near base to  $\frac{3}{4}$ , and reaching nearly half across wing, posterior edge inwardly oblique and somewhat concave; an interrupted dark fuscous terminal line: cilia pale fuscous. Hindwings and cilia whitish-fuscous.

Maskeliya, Ceylon, in March, June, and October; three specimens (de Mowbray, Pole).

*Agriophara encryphas*, n. sp.

♂ ♀. 23-24 mm. Head ochreous-whitish, crown fuscous-tinged. Palpi whitish, second joint fuscous except towards apex. Antennæ grey. Thorax fuscous mixed with whitish. Abdomen grey. Forewings elongate, moderately broad, costa anteriorly moderately, posteriorly slightly arched, apex obtuse, termen somewhat oblique, slightly rounded; 7 to termen; white, with some scattered fuscous scales, costa ochreous-tinged, dorsal half suffused with light fuscous; very small fuscous spots on costa at  $\frac{2}{5}$  and  $\frac{2}{3}$ , giving rise to indistinct oblique series of fuscous dots on costal half of wing; cloudy subtriangular spots of dark fuscous suffusion on dorsum before middle and at  $\frac{3}{4}$ ; a terminal series of minute dark fuscous dots: cilia whitish, tinged with fuscous towards tornus. Hindwings pale grey; cilia whitish with grey subbasal line.

Khasi Hills; two specimens (Swinhoe).

## ELACHISTIDAE.

*Stathmopoda hexatyla*, n. sp.

♂ ♀. 18-20 mm. Head yellow-ochreous, face paler. Palpi whitish-ochreous, base dull bronzy-grey. Antennæ pale ochreous, ciliations in ♂ 6. Thorax yellow-ochreous, with three anterior leaden-grey spots. Abdomen whitish-grey. Posterior tibiae and tarsi at apex of joints with grey spots and expanded whorls of yellow-ochreous scales. Forewings linear-lanceolate, widest near base, attenuated to acute and slightly curved apex; deep ochreous-yellow; three round metallic leaden-grey spots in disc, first almost basal, second at  $\frac{1}{3}$ , third at  $\frac{2}{3}$ : cilia pale greyish-ochreous to grey. Hindwings linear, cilia 8; pale grey; cilia pale greyish-ochreous or greyish.

Maskeliya and Madulsima, Ceylon, in April, July, and October; four specimens (Pole, Vaughan).

*Stagmatophora arachnitis*, n. sp.

♂ ♀. 14-17 mm. Head and thorax ferruginous-ochreous, face whitish, sides of crown slenderly white. Palpi whitish, second joint ferruginous except apex, terminal joint longer than second, with base and two bands blackish. Antennæ white, with blackish annulations connected by a blackish line. Abdomen grey, basal half golden-ochreous. Forewings lanceolate, apex slightly curved; 7 and 8 out of 6; ferruginous-brown; very slender white lines finely edged with black as follows, *viz.*, an irregular line from beneath base of costa to  $\frac{1}{3}$  of disc, nearly meeting at an acute angle an oblique white mark beneath fold, a line along fold from base to beyond middle, a line along costa from near base to  $\frac{2}{3}$ , where it forms a transverse white posteriorly black-edged mark reaching nearly half across wing, and an irregular angulated line from beneath costa at  $2$  through disc almost to apex of this mark; a subtriangular leaden-grey-metallic laterally black-edged spot beneath this mark, separated from it by a light ferruginous-ochreous spot; some irregular marks between this and apex, and an elongate apical spot light ferruginous-ochreous, surrounded with fuscous suffusion; a transverse black mark from costa at  $\frac{3}{4}$ , edged posteriorly with whitish: cilia ochreous sprinkled with dark fuscous towards base, beneath tornus greyer. Hindwings grey; cilia light grey.

Maskeliya, Ceylon, in January, February, May, and July; six specimens (Pole).

*Stagmatophora notochorda*, n. sp.

♂ ♀. 10-13 mm. Head, palpi and antennæ ochreous-whitish, terminal joint of palpi with dark fuscous anterior line except towards base. Thorax light reddish-brown, with broad ochreous-whitish dorsal stripe. Abdomen pale ochreous. Forewings narrow-lanceolate, 7 and 8 out of 6; light brown, slightly reddish-tinged; a fine costal streak from near base to  $\frac{2}{3}$ , a fine median line from base to  $\frac{2}{3}$ , a broad dorsal streak (sometimes partially broken up with ground colour) from base to tornus, and fine streaks on veins posteriorly ochreous-whitish; undefined marks of black irroration on upper edge of dorsal streak at  $\frac{1}{3}$  and beyond middle, first sometimes strong, oblique, and sometimes

other scattered variable short marks of blackish irroration between veins: cilia pale ochreous-grey. Hindwings grey; cilia light grey.

Puttalam, Ceylon, from November to February; six specimens (Pole).

*Limnæcia proclina*, n. sp.

♀. 14-15 mm. Head dark bronzy-fuscous, face more or less mixed with whitish ochreous. Palpi whitish, second joint with four, terminal joint with three longitudinal blackish lines. Antennæ whitish, ringed and lined with blackish. Thorax dark bronzy-fuscous, more or less mixed with whitish. Abdomen rather dark grey mixed with whitish-ochreous and whitish. Forewings lanceolate; dark bronzy-fuscous or blackish; a moderate oblique whitish fascia partly suffused with ochreous-yellowish about  $\frac{1}{4}$ , dilated on dorsum; an ochreous-whitish dot on middle of costa, a small spot on dorsum a little beyond it, and a small spot on costa at  $\frac{4}{5}$ , more yellowish on margin; some minute white marginal dots round apex: cilia light grey sprinkled with blackish, with a large whitish-ochreous tornal patch. Hindwings rather dark grey; cilia grey.

Maskeliya, Ceylon, in February, March, June and October; five specimens (Pole).

#### PLUTELLIDAE.

I propose to transfer the groups of *Gracilaria* and *Zelleria* to this family, reserving discussion for the present.

*Gracilaria thriambica*, n. sp.

♂. 13 mm. Crown of head yellow, face white, each with a transverse crimson band. Palpi crimson, terminal joint of labial white, becoming ochreous-yellow towards apex. Antennæ ochreous-grey, basal joint yellow, above it a crimson ring. Thorax crimson, posterior half white. Abdomen light grey, beneath white with dark grey rings. Legs ochreous-whitish ringed with dark grey, anterior and middle femora and tibiæ yellow banded with crimson. Forewings elongate, very narrow, parallel-sided, short-pointed; crimson; markings bright yellow, partially edged with black; an oblique fascia near base, a curved oblique mark from costa before  $\frac{1}{3}$ , four approximated oblique wedge-shaped marks from costa between  $\frac{2}{5}$  and  $\frac{3}{4}$ , a rounded spot on dorsum about middle, and another more trapezoidal on tornus; a black longitudinal streak in disc from beyond middle to  $\frac{5}{6}$ ; a transverse series of three yellow-ochreous dots towards apex, costal preceded and followed by white marks, median followed by a round black præapical spot: cilia pale grey, round apex yellow with basal third crimson. Hindwing grey; cilia light grey.

Maskeliya, Ceylon, in January; one specimen (Pole).

*Coriscium hieranthes*, n. sp.

♂ ♀. 10-11 mm. Head white, crown yellowish-tinged, collar pale crimson. Palpi pale crimson, terminal joint of labial yellowish-white. Antennæ light ochreous, basal joint yellowish-white. Thorax crimson, posterior third white. Abdomen grey. Legs yellowish ringed with dark grey. Forewings sublinear, slightly narrowed posteriorly, shortly round-pointed; crimson; markings pale yellow, finely edged with blackish; a dot on costa near base, a curved

oblique mark from costa at  $\frac{1}{3}$ , four approximated oblique parallel-sided marks from costa between  $\frac{2}{3}$  and  $\frac{3}{4}$ , and four semi-oval equidistant dorsal spots; a round almost apical fuscous spot, centred with black, and edged beneath by a white mark: cilia grey, at apex yellow with basal third crimson, above apex with a dark grey hook. Hindwings and cilia rather dark grey.

Maskeliya, Ceylon, in August; two specimens (de Mowbray).

*Conopomorpha isochorda*, n. sp.

♂ ♀. 6-7 mm. Head and thorax greyish-bronze, face white. Palpi white. Antennæ grey ringed with white, beneath white. Abdomen grey. Forewings linear, pointed; bronzy-grey; costal edge whitish; a series of oblique cloudy pale ochreous strigæ from dorsum, becoming obsolete towards costa; a fine whitish line from tornus to near apex; a dark grey præapical dot, extreme apex ferruginous-orange: cilia ochreous-whitish, basal third light shining rosy-purple, edged by a deep violet line. Hindwings grey; cilia ochreous-grey-whitish.

Peradeniya, Ceylon; twenty specimens (Green). Larva mines in young leaves of ebony, *Diospyros emblyopteris* (Green). Owing to the extreme slenderness and delicacy of the wings the neuration proved very difficult to ascertain, but in a denuded specimen the forewing appeared to be as follows: 1b simple, 2 from  $\frac{4}{5}$ , 4 and 5 approximated from angle, 6 and 8 long-stalked, 6 to termen, 7 absent, 9 and 10 from near 8, 11 absent.

*Zelleria petrias*, n. sp.

♂ ♀. 20-21 mm. Head and thorax pale whitish-ochreous, more or less mixed with fuscous. Palpi fuscous, mixed with whitish-ochreous towards apex of joints. Antennæ grey. Abdomen grey, apex ochreous-whitish. Forewings elongate, very narrow, costa gently arched, apex acute, somewhat produced, termen sinuate, extremely oblique; 4 and 5 separate; light grey; four longitudinal series of minute black dots, first subcostal, not reaching beyond middle, others fairly complete; an oblique spot of blackish-grey suffusion above dorsum at  $\frac{2}{3}$ , and some undefined dark fuscous scales in disc at middle and  $\frac{3}{4}$ : cilia pale greyish-ochreous, on costa mixed with dark grey, at apex with a blackish basal dot. Hindwings light grey, with a small transparent basal patch; cilia whitish-ochreous-grey.

Simla, in April and May; two specimens (Nurse).

*Yponomeuta melanaster*, n. sp.

♂ ♀. 20-24 mm. Head, palpi, antennæ, and thorax grey; thorax with two black dots on shoulders, four on back, and one on posterior extremity. Abdomen dark grey. Forewings elongate, narrow, costa gently arched, apex obtuse, termen nearly straight, oblique; ochreous-grey; 17-21 moderate round black dots scattered throughout disc, viz., two near base, four in a subdorsal series, three or four in a subcostal series, three approximated in a curved transverse series above fold at  $\frac{1}{3}$ , one or two on fold posteriorly, and a group of from three to six towards apex: cilia ochreous-grey. Hindwings with lanceolate transparent basal patch; dark fuscous; cilia fuscous, with darker basal shade.

Puttalam, Ceylon, in December and January; two specimens (Pole).

*Pyrozela casta*, n. sp.

♂. 17-18 mm. Head, palpi, antennæ, and thorax shining white. Abdomen grey-whitish. Forewings elongate, costa moderately arched, apex obtuse, termen nearly straight, oblique, shining white; extreme base of costa blackish; a transparent patch and longitudinal groove beneath between cell and vein 12 near base, 11 bent at base to make room for this: cilia white. Hindwings and cilia whitish-grey.

Bhotan, in September; two specimens (Dudgeon).

*Pyrozela argophanes*, n. sp.

♂ ♀. 15-18 mm. Head, antennæ, and thorax white. Palpi white, apex of second joint sometimes tinged with fuscous. Abdomen light grey. Forewings elongate, moderate, costa gently arched, apex obtuse, termen rather obliquely rounded; shining white; an oblique streak of dark fuscous irroration from middle of dorsum, reaching nearly half across wing; a short fuscous mark along dorsum before tornus; sometimes a few scattered fuscous scales in disc, and on costa towards apex: cilia light brown, outer third dark fuscous. Hindwings grey, paler towards base; cilia grey-whitish, with grey basal line.

Khasi Hills; five specimens.

*Pyrozela tridelta*, n. sp.

♂ ♀. 20-24 mm. Head yellow, back of crown red. Palpi yellow, second joint mixed with red. Antennæ pale yellowish, towards base reddish-tinged, thorax yellow, anterior margin and posterior half except extremity crimson. Abdomen pale crimson. Forewings elongate, somewhat dilated, anteriorly gently, posteriorly strongly arched, apex obtuse, termen obliquely rounded; 2 and 3 stalked; crimson-fuscous, becoming bright crimson on margins of wing or of markings; markings clear yellow; a triangular blotch extending on costa from  $\frac{1}{4}$  to  $\frac{3}{5}$ , and reaching nearly half across wing; a bent streak from near dorsum towards base to near apex of costal blotch; two small spots near dorsum towards middle, first sometimes obsolete; an oblique streak from lower angle of cell to dorsum just before tornus; an irregular marginal streak round posterior fourth of costa and apex to below middle of termen: cilia yellow, on lower part of termen crimson-fuscous. Hindwings pale crimson; cilia pale crimson, at apex pale yellowish.

Khasi Hills; twelve specimens.

*Pyrozela anticlina*, n. sp.

♂ ♀. 18-19 mm. Head yellow, lower part of face and a dot on crown red. Palpi red, apex pale yellowish. Antennæ yellow. Thorax yellow, collar and posterior margin crimson-red. Abdomen light ochreous-rosy. Forewings elongate, costa moderately arched towards base and apex, nearly straight towards middle, apex rounded-obtuse, termen oblique, slightly rounded; rather light crimson, deeper on margins, dorsum more or less orange; costa narrowly yellow from about  $\frac{1}{4}$  to  $\frac{3}{4}$ ; an outwardly oblique yellow bar from  $\frac{1}{4}$  of dorsum, reaching nearly half across wing, and a similar inwardly oblique bar from before tornus; a yellow dot above middle of dorsum: cilia yellow, on lower

half of termen crimson. Hindwings and cilia light ochreous-rosy, costal cilia pale yellowish.

Sikkim and Bhotan (1,800 feet), in May ; two specimens (Dudgeon).

*Cerace sardias*, n. sp.

♀. 33-40 mm. Head and palpi blackish. Antennæ black, spotted with white. Thorax purple-blackish with scattered yellow scales. Abdomen purple-blackish with lateral series of thick yellow bars. Forewings elongate, costa strongly arched, apex obtuse, termen nearly straight, very oblique ; 6 to costa ; bright yellow ; extreme base purple-blackish ; a narrow irregular-edged deep purplish fascia, mixed with black and strewn with small bluish-lead-metallic spots, from beyond middle of costa to dorsum before tornus, including a yellow dot on costa and dorsum ; apical area beyond this fascia wholly deep red, strewn with bluish-lead-metallic dots : cilia purple-blackish. Hindwings bright yellow ; apical third purple-blackish, anterior edge straight ; cilia purple-blackish, round tornus and dorsum yellow.

Khasi Hills ; three specimens (Swinhoe).

*Simæthis sandaracina*, n. sp.

♂. 16-18 mm. Head dark grey, irrorated with white. Palpi white, sprinkled with dark grey. Antennæ white, ringed with black. Thorax dark grey, suffused with red-brown and sprinkled with white. Abdomen dark fuscous, sprinkled with whitish, apex ferruginous. Forewings elongate-triangular, costa moderately arched, apex obtuse, termen bowed, rather oblique ; red-brown, posterior  $\frac{2}{3}$  of costa broadly suffused with ferruginous-ochreous ; exterior half of dorsum broadly suffused with dark grey ; a short fine white line from costa near base ; an irregular fine white line from  $\frac{1}{3}$  of costa to before middle of dorsum, irrorated with dark grey except on costa ; a very indistinct fine irregular line of grey irroration from a white spot on costa beyond middle to  $\frac{3}{4}$  of dorsum, followed on costa by a patch of dark grey irroration ; a subterminal line of grey irroration from beneath apex to tornus : cilia dark red-brown, tips white on subapical and submedian patches. Hindwings orange-ochreous, partially suffused with ferruginous ; costa rather broadly dark fuscous, dorsum rather broadly suffused with grey ; cilia grey, suffused with white round apex and with red-brown on termen.

Simla, in August and September ; two specimens (Nurse).

*Brenthia catenata*, n. sp.

♀. 8-9 mm. Head, antennæ, thorax, and abdomen dark fuscous. Palpi whitish, second and terminal joints with basal and subapical dark fuscous rings. Forewings elongate-triangular, costa moderately arched, apex obtuse, termen little rounded, slightly oblique ; dark fuscous ; four (subbasal, first, median, and second) irregular curved transverse shades of fine whitish irroration, median forming part of a transverse-oval discal spot outlined with whitish irroration ; a small blue-green-metallic spot on costa at  $\frac{1}{4}$  ; a slender partially interrupted whitish subterminal line, curved parallel to apical part of costa and termen ; a series of black spots round apex and termen, centred with violet-silvery-metallic

dots: cilia fuscous, with two dark fuscous shades, between which is a whitish shade. Hindwings dark fuscous; an oblique oval spot in middle of disc outlined with whitish; a subterminal whitish line, more or less interrupted below middle; a violet-metallic line between this and termen; cilia as in forewings.

Poona, in December; four specimens (Swinhoe).

*Glyphipteryx tetrachrysa*, n. sp.

♂ ♀. 9-12 mm. Head and thorax ochreous-bronzy. Palpi ochreous-whitish second joint with two oblique black bars, scales projecting beneath towards apex, terminal joint with a black lateral line. Antennæ dark fuscous. Abdomen grey. Forewings elongate, rather dilated posteriorly, costa gently arched, apex obtuse, termen somewhat sinuate, oblique; light ochreous-bronze; markings silvery-white edged with dark fuscous, viz., a streak from base to near dorsum before middle, an oblique streak from  $\frac{1}{5}$  of costa reaching to fold, a slightly bent transverse streak from  $\frac{2}{5}$  of costa to beyond middle of dorsum, a slightly inwards oblique streak from costa beyond middle reaching nearly half across wing, a slightly incurved transverse streak from beyond  $\frac{2}{3}$  of costa to before tornus, a sometimes interrupted streak from  $\frac{5}{8}$  of costa to termen beneath apex, and a short streak across apex; between the last two streaks and the preceding transverse streak a black tornal patch extending nearly to costa, upper portion crossed and obscured by several longitudinal irregular pale ochreous streaks, lower portion marked with four small round golden-metallic dots, of which three are marginal and one above and between the two anterior of these: cilia whitish, basal half ochreous-bronze edged with dark fuscous, with a whitish indentation on termination of metallic streak. Hindwings dark grey, lighter anteriorly; cilia grey.

Maskeliya, Ceylon, in January and February; six specimens (Pole).

*Automachæris*, n. g.

Head loosely hairy on crown, face smooth; tongue developed. Antennæ  $\frac{3}{5}$ , in ♂ simple-basal joint elongate, somewhat dilated, with pecten of scales. Labial palpi long, recurved, second joint with appressed scales somewhat angularly dilated beneath at apex, terminal joint as long as second, with appressed scales, acute. Maxillary palpi obsolete. Anterior tibiae and tarsi dilated with rough scales, posterior tibiae with appressed scales. Forewings with tufts of scales on surface; 2 from towards angle, 2-10 approximated, parallel, 7 to apex, 7 and 8 closely approximated, 11 from before middle. Hindwings 1, elongate-lanceolate, cilia  $1\frac{1}{2}$ ; 2 remote, 3 and 4 connate, 5-7 nearly parallel.

Allied to *Cerostoma*.

*Automachæris epichlora*, n. sp.

♂ ♀. 20-22 mm. Head and thorax whitish, sprinkled with pale ochreous. Palpi, antennæ, and abdomen ochreous-whitish, palpi with a few fuscous specks. Forewings elongate-lanceolate, apex caudate, subfalcate; ochreous-whitish, sprinkled with pale ochreous scales, sometimes tipped with fuscous, especially posteriorly, with a few minute black specks; three transversely placed pairs of small black dots, at about  $\frac{1}{5}$ , before middle, and at  $\frac{2}{3}$ , lower dot of each pair

subdorsal, preceded by a tuft of scales, upper dot of first two pairs discal, of third costal: cilia whitish, more or less speckled with dark fuscous round apex, with some minute black dots at base, a median dark line round apex, and sometimes a median series of undefined dark dots. Hindwings and cilia whitish.

Khasi Hills; five specimens.

#### TINEIDÆ.

*Opogona amphicausta*, n. sp.

♂. 11-12 mm. Head dark purplish-fuscous on crown; face, fillet, antennæ, and palpi whitish-ochreous. Thorax dark purplish-fuscous. Abdomen light bronzy-grey. Posterior tarsi with whorls of projecting bristles at joints. Forewings lanceolate; bright brassy-yellow; base and apex rather narrowly dark purplish-fuscous; a small dark bronzy-fuscous dorsal spot before tornus, sometimes almost obsolete: cilia fuscous. Hindwings dark grey; cilia fuscous.

Maskeliya, Ceylon, in January and February; two specimens (Pole).

*Agriothera*, n. g.

Head densely tufted on crown, face smooth; tongue developed. Antennæ over 1, basal joint rather large, dilated with scales. Labial palpi rather long, slender, smooth-scaled, slightly curved, porrected, terminal joint shorter than second, pointed. Maxillary palpi obsolete. Posterior tibiæ clothed with long hairs above and beneath. Forewings with 1 b furcate, 2 from angle, 7 to costa, 8 absent, 11 from beyond middle. Hindwings 1, subtrapezoidal, apex pointed, produced, termen sinuate, cilia  $\frac{4}{5}$ ; 4 absent, 5-7 parallel, transverse vein very oblique inwards.

*Agriothera melanacma*, n. sp.

♂. 13 mm. Hairs of crown white, posteriorly greyish-tinged, in centre dark grey, face whitish, sprinkled with grey. Palpi dark grey, terminal joint white. Antennæ and thorax grey. Abdomen pale grey. Forewings elongate, narrow, costa gently arched, apex pointed, produced, termen concave, very oblique; bronzy-fuscous, irrorated with dark fuscous, towards costa mixed with grey-whitish; an irregular white streak beneath middle from base almost to termen; lower edge with an abrupt indentation before middle; margin of apex and upper half of termen black, preceded by a curved white mark in apex, and some irregularly arranged white scales before this: cilia whitish, with dark fuscous antemedian shade, and subapical shade round apex. Hindwings grey, thinly scaled, except towards termen; cilia pale grey, tips whitish.

Maskeliya, Ceylon, in July; one specimen (Pole).

*Endophthora pepsalias*, n. sp.

♂. 9 mm. Head yellow-ochreous. Palpi dark fuscous, base and apex of terminal joint whitish. Antennæ 1, grey. Thorax golden. Abdomen grey. Forewings elongate, very narrow, costa gently arched, apex round-pointed, termen extremely obliquely rounded, 6 and 7 stalked; bright golden, toward costa suffused with dark bronzy fuscous; six short white oblique strigulæ on posterior half of costa; about twenty-five small white dots irregularly strewn in disc; about twelve small white dots along dorsum and termen, mostly

accompanied by small raised or projecting black dots : cilia pale whitish-golden. Hindwings and cilia grey.

Maskeliya, Ceylon, in February and May ; two specimens (Pole).

*Decadarchis*, Meyr.

Head densely rough-haired, tongue obsolete. Antennæ  $\frac{5}{6}$ , in ♂ simple, sometimes with subbasal notch, basal joint moderate, thickened with scales. Labial palpi moderate, slightly curved, subascending, second and terminal joints with dense tufted fringe of very long projecting scales beneath, terminal joint short. Maxillary palpi long, filiform, folded. Posterior tibiae clothed with long hairs above and beneath. Forewings with 1 b furcate, 2 from about  $\frac{4}{5}$ , 3 from angle, 6 absent, 7 to costa, 8 absent, 11 from before middle, apex turned up in repose. Hindwings 1, ovate-lanceolate, cilia 1 ; 2-4 parallel, 5 and 6 stalked, 6 to costa, 7 parallel.

I am now able to re-constitute this genus as a good and natural one, well characterised by the peculiar palpi. Besides the type *D. simulans*, I refer to it the Australian *mystacinella*, Walk., and the three following species.

*Decadarchis platydelta*, n. sp.

♂ ♀. 18-27 mm. Head white. Palpi white, externally somewhat mixed with dark fuscous. Antennæ whitish-grey. Thorax white, with a fuscous curved mark near posterior extremity. Abdomen whitish or pale grey. Forewings elongate, narrow, costa moderately arched, apex acute, termen sinuate, extremely oblique ; white, with a few scattered ochreous and brown scales ; two flattened-triangular dark fuscous dorsal blotches, not reaching half across wing, first extending from near base to before middle, second larger, extending from beyond middle to tornus, enclosing a spot of whitish suffusion ; an irregular dark fuscous apical dash, sometimes incomplete : cilia white, with two dark fuscous lines more or less obsolete except round apex, tips suffused with brownish. Hindwings grey, paler towards base ; cilia whitish-grey, more or less suffused with white round apex.

Ceylon (North Central Province), in November ; four specimens (Pole).

*Decadarchis antimicras*, n. sp.

♀. 14-22 mm. Head white. Palpi white, externally somewhat mixed with dark fuscous. Antennæ whitish, sometimes tinged with dark fuscous. Thorax white, with a curved fuscous mark before posterior extremity. Abdomen whitish. Forewings elongate, narrow, costa moderately arched, apex acute, termen sinuate, extremely oblique ; white with scattered dark fuscous scales ; two triangular dark fuscous spots on dorsum before middle and before tornus, not reaching half across wing ; small oblique dark fuscous spots on costa at  $\frac{1}{4}$ ,  $\frac{1}{2}$ , and  $\frac{3}{4}$  ; a small dark fuscous spot in disc at  $\frac{1}{3}$ , sometimes connected with apex of first-dorsal spot ; an elongate dark fuscous spot before middle of termen, and another at apex ; dorsal and posterior area sometimes much suffused with fuscous : cilia white, sprinkled with dark fuscous, above apex with two dark fuscous lines. Hindwings grey, lighter towards base ; cilia whitish-grey, more or less suffused with white round apex.

Peradeniya, Udagama, and Matale, Ceylon, from October to February ; four specimens (Pole).

*Decadarchis gephyrias*, n. sp.

♂♀. 12-18 mm. Head and thorax ochreous-whitish, shoulders dark fuscous. Palpi dark fuscous, apex of second and terminal joints whitish. Antennæ ochreous-whitish, ringed with dark fuscous. Abdomen ochreous-whitish. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen hardly rounded, extremely oblique ; pale whitish-ochreous, with a few scattered dark fuscous scales ; a broad dark purplish-fuscous streak mixed with black from base of costa through middle of disc to apex, connected by broad bars with costa about  $\frac{1}{4}$  and  $\frac{3}{4}$ , so as to enclose three semi-oval costal blotches of ground colour, central much largest and containing a small undefined blackish spot on middle of costa : cilia ochreous-whitish, sprinkled with dark fuscous, round apex with dark fuscous basal line. Hindwings grey, darker towards apex ; cilia grey or whitish-grey.

Maskeliya, Ceylon, in May ; two specimens (Pole).

*Pylætis*, n. g.

Head rough-haired ; tongue developed. Antennæ 6, basal joint moderate thickened with scales. Labial palpi moderate, porrected, second and terminal joints clothed with long rough projecting scales beneath, terminal joint short. Maxillary palpi moderate, porrected, loosely rough-scaled. Posterior tibiae clothed with long hairs above. Forewings with 1 b furcate, 2 from  $\frac{4}{5}$ , 3 from angle, 7 to costa, 8 absent, 11 from before middle. Hindwings  $\frac{3}{2}$ , linear-lanceolate, cilia 2 ; 2-4 parallel, 5 and 6 stalked, 6 to termen, 7 parallel.

*Pylætis ophionota*, n. sp.

♀. 13-19 mm. Head and palpi blackish-fuscous, hairs of crown whitish-ochreous above. Antennæ whitish-ochreous, basal joint blackish. Thorax dark fuscous, with broad whitish-ochreous dorsal stripe. Abdomen pale ochreous. Forewings elongate, very narrow, costa gently arched, apex acute, termen slightly sinuate, extremely oblique ; blackish-bronze ; a fine whitish ochreous streak along dorsum and termen throughout, upper edge five or six times irregularly sinuate : cilia whitish-ochreous with some scattered blackish points, on costa blackish-bronze except extreme base. Hindwings rather dark fuscous ; cilia fuscous, becoming paler and sometimes whitish-ochreous towards upper half of termen.

Matale and Puttalam, Ceylon, in April and October ; five specimens (Pole).

*Crypsithyris*, n. g.

Head densely rough-haired ; tongue obsolete. Antennæ 1 or over 1, in ♂ simple, basal joint moderate, with pecten. Labial palpi moderately long, porrected, second joint beneath somewhat roughly scaled towards apex, with several long bristles, terminal joint shorter than second, pointed. Maxillary palpi long, filiform, folded. Posterior tibiae clothed with long fine hairs. Forewings with round discal impression in cell ; 1 b simple, 2 from angle, 4 and 5 stalked, 7 and 8 stalked, 7 to costa, 9 absent, 11 from beyond middle, on discal impression. Hindwings  $\frac{3}{2}$ , lanceolate, cilia 2 ; 2-7 parallel, or 5 and 6 stalked,

upper margin of cell mostly obsolete, sometimes transverse vein absent between 3 and 7, then 4 and stalk of 5 and 6 also becoming obsolete anteriorly.

Type *C. mesodyas*. Allied to *Monopis*, of which it has the discal impression of forewings, but not the characteristic stalking of veins 3 and 4; the long antennæ are also a distinguishing point. Besides the following, *amandatella*, Walk., and *fissella*, Walk., described under *Tinea*, are referable here.

*Crypsithyris orchas*, n. sp.

♀. 12-14 mm. Head pale yellow-ochreous. Palpi whitish-ochreous, suffused with dark fuscous except towards apex. Antennæ light fuscous. Thorax whitish-ochreous, sprinkled with dark fuscous. Abdomen whitish-ochreous. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen very oblique; pale ochreous-yellowish, sprinkled with dark fuscous; an oblique cloudy dark fuscous mark from base of costa; discal impression semitransparent; a transverse cloudy dark fuscous spot from dorsum beneath discal impression, not quite reaching it; a similar larger spot from middle of costa, passing just behind discal impression and reaching its lower edge; some undefined small cloudy dark fuscous spots round apex and termen: cilia ochreous-yellow, at base with a few dark fuscous scales. Hindwings with transverse vein absent between 3 and 7, 5 and 6 stalked; light grey, apex yellowish-tinged; cilia pale yellowish.

Maskeliya and Peradeniya, Ceylon, in February, May, and July; seven specimens (Pole, Green).

*Crypsithyris mesodyas*, n. sp.

♂ ♀. 9-10 mm. Head whitish. Palpi white, externally dark fuscous except towards apex. Antennæ pale fuscous. Thorax whitish, irrorated with fuscous. Abdomen grey. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen very obliquely rounded; whitish, variably irrorated with ochreous-brown and towards costa with dark fuscous; an oblique cloudy brown subbasal fascia; discal impression semitransparent; two round cloudy spots of ochreous-brown suffusion, irrorated with dark fuscous beneath and beyond discal impression: cilia whitish, with rows of brown and dark fuscous points. Hindwings with transverse vein entire; dark grey; cilia ochreous-whitish, sometimes suffused with grey towards base.

Peradeniya, Ceylon, from March to May; twelve specimens (Green). Larva in a portable case, feeding on lichens under rock-ledges and on tree-trunks (Green); case consisting of a broad elliptic-oblong arched upper roof (12 mm. long, 5 mm. broad), with four neat round holes arranged midway between corners and centre, and a slighter and less extensive floor beneath this, constructed of silk covered with lichen-grains and refuse, colour varying from grey-whitish to greyish-ochreous; the lateral connections outside the perforations are often worn away.

*Crypsithyris hypnota*, n. sp.

♀. 13 mm. Head whitish-ochreous, sides of face mixed with fuscous. Palpi whitish-ochreous, irrorated with fuscous, except towards apex.

Antennæ whitish-ochreous, ringed with fuscous. Thorax whitish-ochreous, irrorated with fuscous, shoulders with a dark fuscous spot. Abdomen grey. Forewings elongate, narrow, costa moderately arched, apex round-pointed, termen very obliquely rounded; whitish-ochreous, irrorated with fuscous and dark fuscous; base suffused with dark fuscous; a streak of dark fuscous suffusion along fold from base to beneath discal impression; discal impression semi-transparent, followed by a round cloudy spot of dark fuscous suffusion: cilia whitish-ochreous, sprinkled with dark fuscous. Hindwings with transverse vein entire; grey; cilia pale whitish-ochreous, mixed with pale grey towards base.

Peradeniya, Ceylon, in February; one specimen (Green). Larva case-bearing, feeding on lichens under rock-ledges (Green); case tortoise-shaped, consisting of a broad oval arched upper roof (13 mm. long, 10 mm. broad) of silk covered with sand and refuse, whitish-grey mixed with brown and black, and a less extensive lower floor of whitish silk.



Meyrick, Edward. 1907. "Descriptions of Indian Micro-lepidoptera." *The journal of the Bombay Natural History Society* 17, 730–754.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/95250>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/244333>

**Holding Institution**

Smithsonian Libraries and Archives

**Sponsored by**

Smithsonian

**Copyright & Reuse**

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.