MICROLEPIDOPTERA OF NEW GUINEA

RESULTS OF THE THIRD ARCHBOLD EXPEDITION

(AMERICAN—NETHERLANDS INDIAN EXPEDITION 1938—1939)

PART V

BY

A. DIAKONOFF

Rijksmuseum van Natuurlijke Historie, Leiden

(WITH TEXT FIGURES 720—861)

VERHANDELINGEN DER KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN, AFD. NATUURKUNDE

TWEEDE REEKS, DEEL L, No. 3

1955

NORTH-HOLLAND PUBLISHING COMPANY

(N.V. Noord-Hollandsche Uitgevers Mij.)

AMSTERDAM

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Publication of the present paper has been made possible by a grant of the "Nederlandse Organisatie voor Zuiver-Wetenschappelijk Onderzoek" covering a large part of the expenses for printing.

DRUKKERIJ HOLLAND N.V., AMSTERDAM

The present paper is the fifth and the last part of the report on the Mierolepidoptera of the Third Arehbold Expedition to Netherlands New Guinea 1938—1939. The previous parts were published as no. 1, pp. 1—167, 1952, no. 3, pp. 1—166, no. 4, pp. 1—164 of the 49th volume and no. 1, pp. 1—191 of the present volume of these *Verhandelingen.*

In the present part are given descriptions and records of the families listed on the opposite page; 19 genera, 90 species, and 3 subspecies are described as new. The systematie part is followed by a list of the speeies with the eollecting loealities, by a general chapter containing a few considerations on the aspeets of the Mierolepidopterous fauna of Central New Guinea, and by an index of the Latin names of the treated Microlepidoptera.

HELIODINIDAE

This group of narrow-winged species seems to be quite insufficiently studied as to the neuration of the both wings. A careful revision is, therefore, highly desirable; it eertainly will bring many new points to light. Several genera are very inadequately described and are diffieult of reeognition or entirely unreeognisable. In this conneetion we need only to refer to a revision of the Australian representatives of the Heliodinidae by A. J. Turner (*Trans. Roy. Soc. South Austral.*, vol. 65, pp. 14—27, 1941), in whieh paper hardly any referenee to the neuration of hind wings is made in the diagnoses of the genera; in the generic key these eharaeters are left out of consideration altogether.

The relation of the family with the Glyphipterygidae, as pointed out by Meyrick, appears to us rather dubious. The male genitalia might be of a Gelechioid stock; they approach in some points those of Cosmopterygidae (ventrally united valvae) but are less highly developed than in that family.

Key to the Papuan genera of Heliodinidae

1. Labial palpi absent . . . . . *Gymnogelastis* Meyrick
   Labial palpi present 2
2. Scape of antenna with an eyecap . . . . . *Hieromantis* Meyrick
   Scape of antenna without eyecap. 3
3. Labial palpus short . . . . . *Thriambeutis* Meyrick
   Labial palpus moderate or long 4
4. Antenna scaled 5
   Antenna not scaled 8
5. Hind wing with veins 3 and 4 stalked, 6 and 7 stalked, vein 5 absent . . . . . *Diascepsis* Durrant [1])
   Hind wing with all veins present and separate 6

[1]) Probably belongs to the Gelechiidae.

6. Fore wing with vein 7 absent . . . . . *Eretmocera* Zeller
Fore wing with vein 7 present 7
7. Head with a fillet between antennae; labial palpus with terminal segment 1; fore wing with vein 4 present (2 and 3 sometimes partially obsolete), 11 from beyond $^3/_4$ . . . . . *Stathmopoda* Herrich-Schäffer (part)
Head without fillet; labial palpus with terminal segment under 1; fore wing with vein 4 absent, 11 from before $^2/_3$ . . . . . *Adamantoscelis* gen. nov.
8. Antenna longer than fore wing 9
Antenna as long as, or shorter than fore wing. 11
9. Antenna with scape thickened . . . . . *Pteropygme* Speiser [1])
Antenna with scape elongate, slender 10
10. Posterior trochanter thickened but not strongly enlarged. Fore wing with vein 11 present. Hind wing with lower edge of cell not approximated to margin of wing, consequently veins 2—4 of normal length. . *Protanystis* Meyrick
Posterior trochanter strongly enlarged. Fore wing with vein 11 absent. Hind wing with lower edge of cell approximated to margin of wing, consequently veins 2—4 very short . . . . . *Agalmoscelis* gen. nov.
11. Hind wing with vein 4 absent . . . . . *Eudaemoneura* Diakonoff
Hind wing with vein 4 present 12
12. Hind wing with veins 6 and 7 stalked 13
Hind wing with veins 6 and 7 approximated towards base 15
13. Fore wing with veins 8 and 9 out of 7 . . . . . *Craterobathra* Meyrick
Fore wing with vein 9 separate 14
14. Fore wing with veins 7 and 8 stalked, 2 from near angle . . . . . *Xestocasis* Meyrick
Fore wing with veins 7 and 8 separate, 2 from $^4/_5$ . . *Placoptila* Meyrick
15. Fore wing with all veins present or sometimes vein 3 absent or veins 2 and 3 partially obliterate 16
Fore wing with either veins 4, 5 and 7 or veins 4, 5, 6, 7, 8 and 9 absent . 17
16. Anterior and median tibiae with rough expanded hairs . . . . . *Agrioscelis* Meyrick
Anterior and median tibiae normal . *Stathmopoda* Herrich-Schäffer (part)
17. Median segment of palpus roughish towards apex below, terminal segment under 1. Fore wing with five costal veins (7 absent) . . . . . *Hethmoscelis* gen. nov.
Median segment of palpus slender, smooth, terminal segment over 1. Fore wing with only three costal veins (7, 8, 9 absent). . . . . *Sipsa* gen. nov.

Agalmoscelis gen. nov. (fig. 720)

ἄγαλμα = show-piece, *σκέλος* = leg

Head smooth, rounded. Ocellus posterior. Proboscis developed. Antenna over 1, in male filiform, serrulate, simple, scape elongate, clavate, smooth, without pecten. Labial palpus very long, recurved, compressed laterally, slender, smooth, median segment hardly roughish beneath, terminal segment somewhat longer than median, acute. Maxillary palpus minute, scaled, appressed to proboscis. All legs brilliantly coloured, metallic above, apparently displayed when in repose, median and especially posterior trochanter very much enlarged, posterior femur strongly flattened

[1]) This genus is insufficiently described and remains obscure.

laterally, concave below and on inner side, posterior tibia with a median and an apical whorl of rather appressed long bristly scales, median whorl sometimes smoothly appressed and hardly perceptible, apical one sometimes very large, reaching halfway towards median, posterior tarsus with basal segment roughish with short bristly scales above and beneath, slightly thickened. Abdomen narrow, flattened dorso-ventrally. Fore

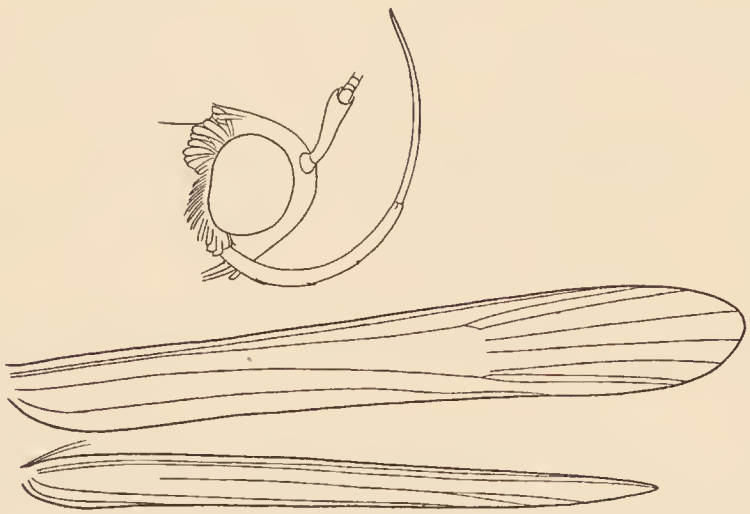


Fig. 720: *Agalmoscelis resplendens* gen. nov., spec. nov., male, head and wing neuration.

wing very narrow, elongate, dilated, broadest before $^4/_5$, apex rounded, termen rounded, very oblique. 1b simple, long, 2 reduced to a minute basal trunk, mostly entirely absent, 3 and 4 closely approximated from angle, sometimes almost parallel, 5 rather near to 4, 5—9 tolerably distant, little diverging, 7 and 8 coincident, to costa, seldom stalked, 9 from angle, 10 from before angle, 11 absent, discoidal between 5—9 vertical, weak; expansible cilia of long very fine hairs just below costa on under side, mostly folded and not perceptible. Hind wing $^1/_2$ or slightly over $^1/_2$, narrowly lanceolate, cilia somewhat over 1; cubital branch running very near to margin, 2—4 very short, sometimes obliterate towards margin, 3 and 4 appearing stalked from base, 2 from beyond middle of the stalk, or 3 absent; discoidal absent, 5 and 6 long-stalked from base, 7 remote, parallel.

Genotype *Agalmoscelis resplendens* spec. nov., male.

Closely allied to *Protanystis* MEYRICK, 1921, but differing by the strongly enlarged posterior trochanter, by the absence of the vein 11 in the fore wing and by a narrower hind wing; in *Protanystis* the cubital stem is remote from the margin and veins 2—4 consequently are of a considerable length. Also related to *Lamproteucha* MEYRICK which has

shorter antennae and labial palpi, and has vein 7 in the hind wing closely approximated to 6 at the base.

Key to the species of *Agalmoscelis*

1. Abdomen orange with black markings 2
   Abdomen black 3
2. Hind tibia black . . . . . *xanthochares* Meyrick
   Hind tibia metallic-green with large orange whorls of scales . . . . . *resplendens* spec. nov.
3. Abdomen with white markings . . . . . *deceptoria* Meyrick
   Abdomen with blue-metallic markings . . . . . *peridoxa* Meyrick

Agalmoscelis resplendens spec. nov. (figs. 720, 724)

♂ 15—17 mm. Head and thorax brilliant deep metallic-green. Antenna blackish becoming bronze posteriorly, about third-fourth white, apex greyish. Palpus orange, apex of median and entire terminal segment suffused with blackish. Abdomen deep orange, a small basal spot, a suffused patch on second tergite and two anal tergites black, valvae suffused with blackish along edge, venter yellow, anterior half slightly infuscated. Legs deep orange (anterior legs missing); median femur dark above, tibia and tarsus with a narrow dorsal black line, apex of tibia also suffused with blackish, outer spurs black externally; posterior leg in male: femur with a narrow dorsal brownish stripe, tibia with a moderate median and a large apical whorl of bristly deep orange scales, ultimate whorl occupying apical third of tibia, tip suffused with blackish, dorsum of tibia between whorls metallic green-blue, spurs pale ochreous, towards base becoming metallic green-blue; tarsus with first, second, and base of third segment black, elsewhere snow-white; posterior leg in female with small median and apical whorls of scales, pale orange mixed with bluish; otherwise as in male. Fore wing with veins 7 and 8 coincident, 2 almost obliterate; narrowly lanceolate, gradually dilated, broadest at $^5/_6$, apex rounded. Blackish-brown, apical area dark fuscous. A rather narrow costal orange streak from beyond base to $^4/_5$, posterior extremity dilated so as to form a slightly outwards-oblique transverse dark orange band occupying fourth fifth of wing, with edges somewhat serrate; a narrow blackish brown subcostal streak penetrating to the middle of band from basal area and enclosing a pale blue metallic dot; dark basal area with a subcostal and a subdorsal brilliant emerald-green metallic streaks, lower one narrowed anteriorly and not reaching base; dark fuscous apical area with a median longitudinal ill-defined irroration of pale violet-blue metallic scales. Cilia dark fuscous, on dorsum opposite orange band tinged orange. Hind wing golden-orange, posterior $^3/_5$ bronze-black. Cilia black, along dorsum towards base becoming orange.

Tegumen rather short, broad. Uncus membraneous, large, erect-ovate. Gnathos large, paired, each half forming a rounded knob with wreaths of

closely set short bristles. Valva cardinate, elongate, with two blunt apical projections, ventral one longest; sacculi short, triangular, united with each other and with vinculum. Vinculum indent in middle, anteriorly fused with sacculi, so as to form a large ventral plate; the edges of the above mentioned parts are indefinite. Anellus lobes large, erect-ovate, weakly bristled. Aedoeagus moderate, straight, base and apex somewhat dilated. (Slides no. 1107 D, holotype, no. 1108 D, paratype.)

Bernhard Camp, 50 m, September 14, 1938 (holotype, male), July 27, 1938. Two specimens. Mist Camp, 1500 m, January 28, 1939. Hollandia, sea level, July,, 1938. One male, three females. Closely allied to *A. xanthochares* (MEYRICK) from Papua, distinct by two black spots on dorsum of abdomen and posterior leg of male. The damaged female specimen from the Mist Camp possesses paler antennae and deep reddish-orange basal two-thirds of hind wing, and may be distinct but it is too worn to allow a closer study.

Agalmoscelis xanthochares (MEYRICK, 1938)

Protanystis xanthochares MEYRICK, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 521, 1938.

Distribution: Papua, Kokoda, 1200 feet.

Bernhard Camp, 50 m, November 7, 1938. Rattan Camp, 1200 m, February 14, 1939. One male, one female. The male from the Bernhard Camp has the hind wings entirely infuscated and the abdomen bright orange, with segments 7 and 8 entirely black, segment 6 with a median dorsal spot and smaller lateral black spots, segment 5 with a small median dorsal spot.

Agalmoscelis deceptoria (MEYRICK, 1938)

Protanystis deceptoria MEYRICK, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 521—522, 1938.

Distribution: Papua, Kokoda, 1200 feet.

Araucaria Camp, 800 m, March 6, 1939. One female.

Protanystis MEYRICK, 1921 (fig. 721)

Protanystis MEYRICK, 1921, Zoöl. Meded. Mus. Leiden, vol. 6, p. 177. Trans. Ent. Soc. Lond., vol. 87, p. 521, 1938. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 186, 1929.

This genus may be redescribed as follows, in order to lay stress on its differences with *Agalmoscelis*. Head smooth, rounded. Ocellus posterior. Proboscis developed. Antenna over 1, in male filiform, serrulate, simple, scape smooth, elongate, clavate, without pecten. Labial palpus very long, recurved, slightly compressed laterally, slender, smooth, terminal segment over 1, acute. Maxillary palpus minute, appressed. Legs metallic above,

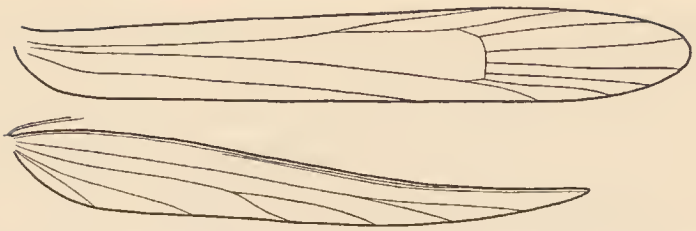


Fig. 721: *Protanystis familiaris* spec. nov., female, wing neuration.

apparently displayed when the insect is in repose, posterior trochanter normal, posterior tibia with moderate whorls of fine bristly scales at middle and apex, tarsus slightly thickened with smooth scales. Fore wing narrow, elongate, dilated, broadest at $^3/_4$, apex rounded, termen rounded, very oblique. 1b simple, 2 from well before angle, curved, sometimes weak or absent, 3 and 4 connate or approximated from angle or 3 absent, 7 and 8 stalked or coincident, to costa, 9 (according to MEYRICK) sometimes absent ?, 11 from somewhat beyond middle. Hind wing 1 or hardly under 1, lanceolate, slightly sinuate, cilia over 1; 2—4 of moderate length, 2 from about $^3/_5$, 3 and 4 appearing stalked from top of cubital stem originating from base, or 3 absent, discoidal vein between 4—7 absent, 5 and 6 long-stalked from base, 7 remote, parallel.

Genotype *Protanystis chalybastra* MEYRICK, 1921, male, female, from Java.

Protanystis familiaris spec. nov. (figs. 721, 730)

♀ 13 mm. Head and thorax deep metallic-blue-green, face deep or light metallic-bronze. Antenna blackish, about its apical fifth white except tip. Abdomen black above, sometimes becoming bronzy towards base, sometimes an ill-defined yellowish dorsal dot on third tergite, venter and sides yellow. Legs yellow, tibiae and tarsi above dark fuscous with faint bluish-green shine. Fore wing with 3 absent, 7 and 8 coincident; narrow lanceolate, gradually dilated to before apex. Black. A deep ochreous-yellow streak along basal $^6/_7$ of costa, terminated below by upper edge of cell except along posterior $^2/_5$ of its length where it is triangularly dilated and reaches $^4/_5$ across wing, posterior edge rather well-defined, serrulate, inwardly oblique, straight; anterior edge of dilatation strongly outwards-oblique, with an acute projection in cell; this projection sometimes narrowly extended as a longitudinal streak of yellowish irroration to base of wing; a longitudinal narrow blackish streak, suffused with metallic bluish-green, running from base of wing above middle of disc to middle of wing; sometimes this streak narrowly connected with an elongate-ovate longitudinal mark in $^1/_3$ of disc at $^2/_3$ of wing length, and centred by a pale blue ovate dot; anterior extremity of this mark connected by a transverse ill-defined blackish suffusion with costa; a deep metallic-green dot in

middle of disc at $^1/_6$ of wing length; two ill-defined purple-blue dots in fold at $^3/_5$ and beyond middle of wing; dark apical area of wing with a purple-bronze longitudinal streak in tornus and along lower part of termen. Cilia fuscous-black, around apex light yellow. Hind wing with vein 3 absent; blackish-bronze with brassy or purplish gloss, cilia blackish.

Seventh sternite emarginate below, a group of strong bristles in middle. Limen, a broad lobe, bristled along edge. (Slide no. 1109 D, holotype.)

Rattan Camp, 1200 m, March 6, 1939 (holotype). Lower Mist Camp, 1400—1600 m, January 31, 1939. Three specimens. Very near to *P. chalybastra* MEYRICK, from Java, differing in the following points: dorsum not suffused with yellow; supramedian metallic streak continuous; no continuous black basal patch; posterior edge of yellow colour straight, not extended below as a narrow projection: instead of this, the purplish-bronze mark is present; apical cilia yellow (in *chalybastra* cilia entirely black).

Agrioscelis MEYRICK, 1913

Agrioscelis MEYRICK, 1913, Exot. Microl., vol. 1, p. 96. Gener. Ins., fasc. 165, p. 14, 1915. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 9, 1929.

Agrioscelis erythracra spec. nov. (fig. 733)

ἐρυθρος = red, ἀκρόν = margin

♂ 18 mm. Head pale ochreous-golden with a suffused fuscous median spot on vertex, face whitish-golden, collar tinged pale pink. Antenna pale golden-ochreous, scape with an apical fulvous suffusion. Palpus golden-whitish, basal segment and base of upper edge of median infuscated. Thorax shining pale orange-brassy-golden, medianly duller, pale greyish-fuscous, tegula with a pale ochreous median transverse band. Abdomen whitish-ochreous. Legs golden-whitish, anterior leg narrowly blackish above, except the tarsus, tarsal segments with narrow dark apical rings; posterior tibia with brassy reflections, a thick fringe of light fuscous bristly scales from base to $^2/_3$, a violet-purple whorl of bristles at apex, basal segment of tarsus with a fulvous-violet basal and an apical ring. Fore wing with vein 3 absent, 7 and 8 stalked; narrowly lanceolate, base of dorsum rounded and prominent. Pale ochreous-greyish, becoming brighter ochreous towards apex, finely irrorated with dark wine-red, this irroration becoming denser towards dorsum, so as to form dark irregular edges to dorsal markings; these are white with golden gloss: a narrow marginal streak along base of dorsum; an outwardly oblique broad wedge-shaped spot with base on dorsum before $^1/_4$, terminated above by fold, and a semiovate spot on dorsum at middle of wing, reaching halfway across disc; both dorsal white spots suffused on base with orange; a faint orange suffusion from middle of base of wing, edging first basal white mark above; apex of wing tinged fulvous. Cilia whitish-fuscous, becoming

pale brownish on basal half. Hind wing whitish-yellow, becoming paler towards base. Cilia fuscous along costa, whitish-ochreous elsewhere.

Tegumen elongate, base somewhat rounded. Uncus moderate, rising, erect-triangular, strongly bristled at the sides, apex truncate. Gnathos strong, rising, shorter than uncus, cuspidate, pointed. Valva with a short, triangular disc and a separate, rising, narrowed cucullus which has a densely bristled knob at its base, sacculus ill-defined anteriorly, with an obtuse top. Vinculum small. Anellus lobes moderate, sclerotized, weakly bristled along edge. Aedoeagus cylindrical, very broad, short, with a large subapical spine. Cornutus, a strong transverse bar with curved ends. (Slide no. 1106 D, holotype.)

Top Camp, 2100 m, January 25, 1939. Two specimens.

Sipsa gen. nov. (fig. 722)

Head smooth, rounded, face strongly retreating. Ocellus small, inferior-subanterior. Proboscis developed. Antenna $^3/_4$, minutely ciliate in female, scape elongate, compressed dorso-ventrally. Labial palpus long, recurved, compressed laterally, slender, smooth, terminal segment over 1, acute.

Fig. 722: *Sipsa tritoma* gen. nov., spec. nov., female wing neuration.

Maxillary palpus minute, appressed. Posterior tibia clothed with long rough bristly scales above, tarsal segments with whorls of apical bristles, whorl on basal segment rather large, on other segments small. Fore wing with 1b simple, 1c developed, 2 short, 3 separate, 4—9 absent, 10 and 11 approximated from towards end of cell; cell very narrow, open between 3 and 10. Hind wing narrowly lanceolate, over $^1/_4$, cilia 7, 2—5 remote, tolerably parallel, 6 and 7 approximated towards base, cell open between 5 and 6.

Genotype *Sipsa tritoma* spec. nov., female.

Possibly a derivative of *Agrioscelis* Meyrick.

Sipsa tritoma spec. nov. (figs. 722, 727, 728)

τρί = three, *τέμνω* = to cut

♀ 14 mm. Head pale golden-ochreous. Antenna pale ochreous, scape and posterior half slightly infuscated. Palpus pale ochreous, posterior half of

terminal segment infuscated. Thorax pale ochreous. Abdomen pale ochreous, suffused above with fuscous-grey, venter, sides, and anal tuft ochreous-whitish. Legs pale ochreous, posterior leg ochreous, apex of tibia, basal segment of tarsus throughout, and narrow apical rings on other tarsal segments greyish-fuscous. Fore wing narrowly lanceolate, costa straight, basal fourth of dorsum strongly rounded and prominent. Golden-ochreous-yellow, towards apex becoming light orange-golden, markings somewhat suffused, purple-fuscous. A broad direct transverse band beyond base, an outwardly oblique rather broad transverse band before middle, gradually narrowed below, to dorsum at middle of wing, these bands connected by a somewhat suffused moderate streak along costa; a suffused inwardly oblique somewhat narrower transverse band at $^3/_4$, triangularly dilated below, anterior edge more oblique than posterior. Cilia ochreous-whitish, slightly tinged fuscous, becoming paler towards tips. Hind wing very pale fuscous with golden gloss becoming whitish towards base, cilia pale fuscous.

Ostium wide. Lamen, a transverse finely scobinate band with secondary folds laterally. Ductus bursae simple. Bursa copulatrix large, forming a central ovoid chamber with a very long tubular appendix. Signa in central part: one slender spike-like signum and a patch of strong dentations; in appendix: a small group of dentations. (Slide no. 1104 D, type.)

Araucaria Camp, 800 m, March 19, 1939. One specimen.

Hethmoscelis gen. nov. (fig. 723)

ἡθμός = a funnel, *σκέλος* = leg

Head smooth, rounded, frons with small pencils of scales over eyes anteriorly. Ocellus inferior. Eye slightly emarginate around base of

Fig. 723: *Hethmoscelis chalcothysana* gen. nov., spec. nov., female, head and wing neuration.

antenna. Proboscis developed, base scaled. Antenna (tips broken) simple in female, scape rather long, dilated, flattened dorso-ventrally, not narrowed. Labial palpi long, recurved, ascending, diverging, median segment slightly thickened, somewhat roughish towards apex below, terminal segment under 1, very slender, smooth. Maxillary palpus small, elongate, slender, appressed. Median leg small, tibia with a moderate median and a large apical whorl of bristly scales, posterior tibia dilated with long roughly projecting scales and bristles above and beneath, forming two ill-defined whorls: before and beyond middle; posterior tarsus with strong whorls of bristles at apices of segments, quickly becoming smaller apically, that of basal segment very large, giving a funnel-like appearance to the entire segment. Fore wing with 1b weak, simple, 1c strong, from cell beyond base, 2 from angle, 3, 5 and 7 absent, 6 and 8 obliterate towards base, 8 to costa, 9 and 10, separate, 11 from beyond $^6/_7$, closing vein obliterate between 4 and 9. Hind wing narrow-lanceolate, $2^1/_2$, cilia 5, 2—5 remote, tolerably parallel, 6 and 7 approximated towards base, cell open between 5 and 6.

Genotype *Hethmoscelis chalcothysana* spec. nov., female

Perhaps a decadent representative of the *Stathmopoda*-group.

Hethmoscelis chalcothysana spec. nov. (figs. 723, 726)

χαλκός = copper, *θύσανος* = fringe

♀ 17 mm. Head ochreous-whitish. Antenna ochreous-whitish, ringed with fuscous. Palpus ochreous-whitish, median segment with a dark fuscous streak along basal half of upper edge. Thorax ochreous-whitish, suffused with dark fuscous anteriorly, tegula and patagium ochreous-whitish, the former tipped, the latter edged with ochreous-whitish. Abdomen ochreous-whitish, each segment with fuscous-black lateral spots and transverse median bands of ferruginous setae. Legs whitish, whorls of scales and bristles fuscous. Fore wing lanceolate, costa gently curved anteriorly, dorsum rounded and projecting beyond base. Ochreous-whitish, irrorated with brown. A short dark brown streak along base of costal edge; other markings ferruginous-brown: a suffused streak along dorsum; indication of suffused transverse bands: at $^1/_5$, $^2/_3$ and two before apex; an ill-defined elongate spot in disc on end of cell, another on termen at $^3/_4$ of wing length; apical $^1/_5$ of wing edged with cloudy dark brown; an irregular dot of pale ground colour before apex. Cilia pale golden-brown. Hind wing whitish, slightly infuscated towards apex. Cilia pale brown becoming ochreous-whitish towards dorsum.

Ostium indefinite. Signum, a small concave plate, denticulate on its outer surface. (Slide no. 1102 D, type.)

Sigi Camp, 1500 m, March 26, 1939. One specimen.

Xestocasis Meyrick, 1914

Xestocasis Meyrick, 1914, Entom. Mitteil., Suppl., vol. 3, p. 54. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 237, 1929.

Xestocasis antirrhopa spec. nov. (fig. 725)

ἀντίῤῥοπος = of equal worth

♂ 15 mm. Head and face pale yellow, back of vertex suffused dark fuscous. Antenna whitish-ochreous, flagellum with basal fifth and apex infuscated. Palpus pale ochreous, median segment along posterior half with dark brown lower edge, posterior segment with anterior edge blackish, apical half entirely blackish. Thorax dull dark coffee-brown. Abdomen orange, three anal tergites infuscated, other segments each with two slender longitudinal pleural streaks not reaching posterior edge. Legs ochreous-orange, anterior femur infuscated, all knees infuscated, all tibiae with broad subapical brownish-black bands, median tarsus with an antemedian band on basal segment, posterior tarsus with a similar band and also basal bands on all other segments. Fore wing lanceolate, strongly narrowed at base, costa being straight, but dorsum strongly rounded towards base; base of costal edge is split lengthwise, so as to form a narrow open fold. Dull dark brown, towards base becoming darker; inside of costal slit pale yellow; a large subovate-rectangular elongate yellow-orange patch suffused on lower half with somewhat brighter orange; this patch extends on dorsum from well before middle of wing to its $^4/_5$, and is separated from the costal edge by a narrow streak of ground colour, vertical edges of patch parallel, somewhat inwardly oblique, anterior edge rather irregular, upper edge gently convex; a few yellowish scales in middle of disc beyond patch. Cilia light brownish, on termen becoming paler anteriorly. Hind wing fuscous with bronze gloss. Cilia light fuscous, along dorsal half of wing becoming yellow, fuscous colour extending anteriorly along apex of cilia, shaped like an attenuated streak.

Tegumen strong, narrowed. Uncus bilobed, lobes asymmetrical, concave, bluntly pointed, erect. Gnathos absent. Valva elongate, costa forming a submembraneous prominence, sacculus strong, cucullus densely bristled. Right valva with a very strong, long, rising projection, top dilated and bristled. Vinculum soldered with sacculi. Anellus forming a tubular sheath around aedoeagus. Aedoeagus with bulbate base. (Slide no. 1105 D, type.)

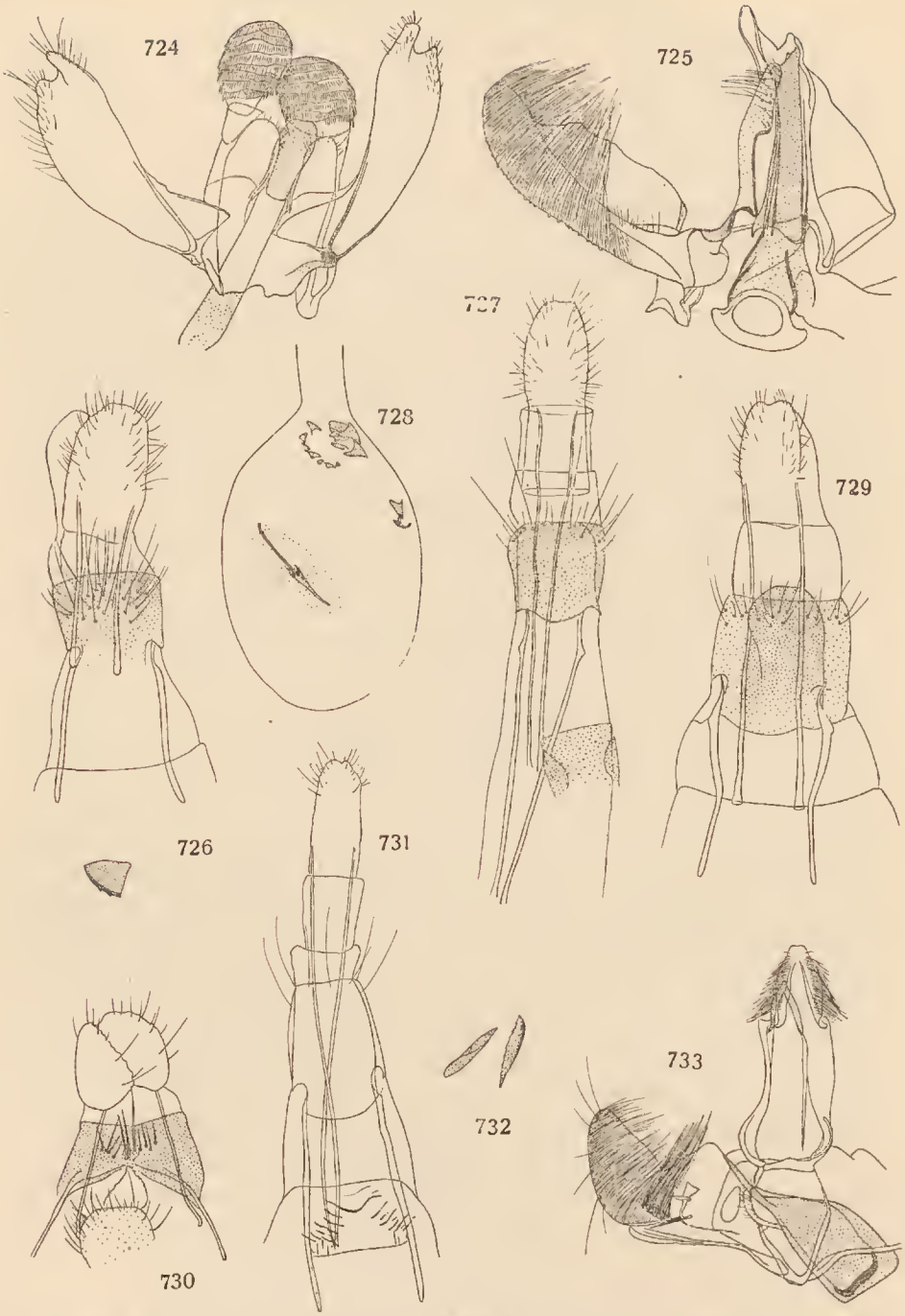
Bernhard Camp, 50 m, July 30, 1938. One specimen.

Eudaemoneura Diakonoff, 1948

Eudaemoneura Diakonoff, 1948, Treubia, vol. 19, pp. 194—195, fig. 4.

Key to the species of *Eudaemoneura*

1. A large ovate yellow spot at $^3/_4$ of wing . . . . . *lecithochra* Diakonoff
   Three white spots on dorsum edged with wine-red . *haematosema* spec. nov.



Genitalia of Heliodinidae. Fig. 724: *Agalmoscelis resplendens* spec. nov., male. Fig. 725: *Xestocasis antirrhopa* spec. nov., male. Fig. 726: *Hethmoscelis chalcothysana* spec. nov., female, ovipositor and signum. Fig. 727: *Sipsa tritoma* spec nov., female. Fig. 728: *idem*, bursa copulatrix. Fig. 729: *Adamantoscelis cucyanca* spec. nov., female. Fig. 730: *Protanystis familiaris* spec. nov., female. Fig. 731: *Eudaemoneura haematosema* spec. nov., female. Fig. 732: *idem*, signa. Fig. 733: *Agrioscelis erythracra* spec. nov., male.

Eudaemoneura haematosema spec. nov. (figs. 731, 732)

αἷμα = blood, *σῆμα* = mark

♀ 11—12 mm. Head shining white, vertex suffused with crimson-orange. Antenna pale golden-ochreous. Palpus glossy ochreous-white. Thorax white, posterior half suffused with pale ferruginous, sometimes suffused throughout with pale ferruginous; shoulder infuscated, pectus white. Abdomen leaden-grey or pale ochreous-greyish, venter glossy white. Legs: anterior and median white, tibiae and tarsi light ochreous, tarsi finely dark-ringed, posterior leg ochreous, tibia and basal segment of tarsus suffused with crimson-fulvous above, whorls of bristles and apices of tarsal segments ferruginous. Fore wing with vein 2 sometimes weak, lanceolate, costa straight, base much constricted. Ochreous-golden. A suffused dark brown narrow streak along basal half of costa, sometimes becoming pale basally; a small white spot in middle of disc beyond base, sometimes indefinite; three large snow-white erect-ovate spots on dorsum: before $^1/_4$, in middle, and at $^3/_4$ of wing, outwards, inwards, and outwards oblique, respectively, posterior one smallest, rather narrow, sometimes ill-defined and suffused with ground colour; a thick rather irregular deep ferruginous line edging white spots except below and connecting them along dorsal edge with each other, and the first one also with base of wing. Cilia whitish-fuscous. Hind wing fuscous-whitish, slightly more infuscated towards apex. Cilia whitish-fuscous.

Ostium indefinite, indicated by a broad limen which forms a small semiovate selerotisation above, with two series of small folds diverging from it. Bursa copulatrix very long, apparently with one or more diverticles. Signum a small concave plate, denticulate on the outer surface. (Slide no. 1101 D, holotype.)

Mist Camp, 1800 m, January 10, 1939 (holotype), January 23, 1939. Two specimens.

Adamantoscelis gen. nov. (fig. 734)

ἀδάμας = steel, *σκέλος* = leg

Head smooth, rounded, face retreating. Ocellus inferior-subanterior. Proboscis moderate. Antennae 1, in female with scape elongate, dilated, flattened, flagellum thickened with scales and with a fringe of very long subappressed scales (2—$3^1/_2$) above from base to $^5/_6$, this fringe triangularly dilated before middle, gradually becoming shorter towards apex, apical sixth of flagellum slender, filiform. Labial palpus moderately long, recurved, ascending, somewhat compressed laterally, median segment thickened with short scales, roughly projecting anteriorly, terminal segment under 1, thickened, smooth, acute. Maxillary palpus rudimentary. Anterior and median tibia smooth, thickened, with an apical whorl of bristly scales, posterior tibia thickened, smooth, with a median and an apical whorl of very long bristles, spurs thickened, bristly along posterior edge, outer

Fig. 734: *Adamantoscelis eucyanea* gen. nov., spec. nov., female, head and wing neuration.

spurs shorter than inner, much thickened, with long rough bristly scales along posterior edge, all tarsi considerably thickened, posterior tarsus with strong whorls of bristles at apices of segments. Fore wing with 1b very weak, simple, 1c strong, 2 weak, from near angle, 3 from angle, 4 absent, 3—6 remote and parallel, 7 and 8 stalked, 7 to costa, 11 from beyond $^3/_4$. Hind wing narrowly lanceolate, under $^1/_2$, cilia 2; veins 2—4 separate, tolerably parallel, 5 approximated to 4 at base, 6 and 7 closely approximated towards base, cell open between 5 and 6.

Genotype *Adamantoscelis eucyanea* spec. nov., female.

Nearest to *Oedematopoda* Zeller, 1852, differing by longer antennae, thickened roughish palpi, vein 4 in fore wing being absent and veins 4 and 5 in hind wing being approximated at base.

Adamantoscelis eucyanea spec. nov. (figs. 729, 734)

ευ = true, *κυάνεος* = blue

♀ 16 mm. Head, palpus, thorax, abdomen black with metallic indigo-green shine. Antenna with flagellum black, fringe of scales deep indigo-blue. Legs deep indigo-blue, shining. Fore wing lanceolate, slightly sinuate: costa straight anteriorly, slightly curved posteriorly, apex pointed, dorsum and termen sinuate, tornus indefinite. Brightly shining, indigo-blue. Cilia dull blackish-fuscous, along base suffused with indigo-blue. Hind wing violet-purple, in apex and along terminal and dorsal margin suffused with indigo-blue. Cilia dull blackish-fuscous.

Ostium membraneous, a simple transverse opening; limen, a membraneous thick fold ventrally. Ductus bursae and bursa copulatrix simple. (Slide no. 1103 D, type.)

Araucaria Camp, 800 m, March 10, 1939. One specimen.

Thriambeutis Meyrick, 1910

Thriambeutis Meyrick, 1910, Trans. Ent. Soc. Lond., 1910, p. 470. Gener. Ins., fasc. 165, p. 23. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 221, 1929.

Thriambeutis deuterarcha Meyrick, 1937

Thriambeutis deuterarcha Meyrick, 1937, Trans. Ent. Soc. Lond., vol. 87, p. 522.

Distribution: British New Guinea, Papua, Mafulu, 4000 feet. Araucaria Camp, 800 m, March 7, 1939. One female.

GLYPHIPTERYGIDAE

This family is rather scantily represented in the present collection which is strange, as a considerable number of species has been described already from New Guinea, especially of the genus *Imma*, and one would expect a larger number of new forms. These insects may be more numerous along the coast and in low country and many species are of diurnal habits; perhaps these are the reasons that only a moderate number of species have been collected by the Expedition which explored more elevated regions and collected moths chiefly with lamps.

Hilarographa Zeller, 1877

Hilarographa Zeller, 1877, Horae Soc. Ent. Ross., vol. 13, p. 187. Meyrick, Proc. Linn. Soc. N.S. Wales, vol. 32, p. 91, 1907. Gener. Ins., fasc. 164, p. 6, 1915. Fletcher, Mem. Agr. Ind., Ent., vol. 11, p. 109, 1929.

Idiothauma Walsingham, 1897, Trans. Ent. Soc. Lond., 1897, p. 49.

Thaumatographa Walsingham, 1897, *ibidem*, p. 52.

Key to the Papuan species

1. Thorax orange with two leaden-blue stripes . . . . . *pyranthis* Meyrick
   Thorax not thus 2
2. Hind wing deep brown-bronze . . . . . *spermatodesma* spec. nov.
   Hind wing yellow 3
3. Hind wing with five black dots along upper part of termen . . . . . *excellens* Pagenstecher
   Such dots absent . . . . . *zapyra* Meyrick

Hilarographa spermatodesma spec. nov. (fig. 735)

σπέρμα = seed, *δεσμός* = band

♂ 10 mm. Head, palpus, thorax and abdomen dark fuscous, face, side-tufts laterally and basal third of palpus pale ochreous. Antenna serrulate, ciliations 2; dark fuscous, indistinctly pale-ringed, scape yellowish. Legs ochreous, banded with fuscous. Fore wing ovate-triangular, dilated, costa little curved at base, rounded before apex, apex rounded, termen moderately rounded, rather oblique. Deep golden-ochreous, brighter and tinged

orange posteriorly, becoming pale yellow towards middle of costa and towards dorsum before tornus; costal edge suffused with dark fuscous to $^4/_5$; basal fifth of wing irregularly suffused with fuscous, which colour tends to form moderate spots; five transverse moderate fasciae from about $^1/_5$ of wing to well before apex, leaden-metallic, edged with dark fuscous, these edges well-defined but rather irregular; three anterior fasciae outwardly oblique and tolerably parallel along upper half, first one very faint, angulate in middle, thence running inwardly oblique to $^1/_3$ of dorsum; second fascia angulate above middle, thence vertical, slightly outwards-convex, to $^3/_5$ of dorsum; third fascia moderately bent above middle, from middle of costa to tornus, its posterior dark edge triangularly dilated towards costa; fourth fascia tolerably straight, from $^3/_4$ of costa towards tornus, its extremity reaching vein 3 and almost touching preceding fascia, its anterior dark edge triangularly dilated towards costa; fifth fascia tolerably parallel and rather approximated to the preceding as far as vein 5, thence converging and touching fourth line on vein 3; dorsal half of wing between first and second fasciae suffusedly retinate with fuscous; a terminal series of rather black dots on veins 8—2 and one above tornus, those on veins 7 and 6 largest, elongate, on vein 8 a small elongate one, other moderate, rounded. Cilia shining iridescent rather light fuscous, a broad antemedian dark fuscous fascia. Hind wing deep brown-bronze, glossy. Cilia paler brown-bronze, anterior half deep lilac-ferruginous.

Tegumen broad, very short. Uncus a laterally compressed blunt hook. Socii projecting, digitoid. Gnathos arms porrect, compressed laterally, top rounded. Vinculum short, with a small saccus. Valva simple, elongate, cucullus rounded. Aedocagus rather broad, straight, weak. Cornuti absent. (Slide no. 1045 D, type.)

Top Camp, 2100 m, January 22, 1939. One specimen. Very distinct by the series of terminal black dots.

Imma Walker, 1864 (*sensu* Meyrick, 1906)

Imma Walker, 1864, List Lep. Het. Brit. Mus., vol. 16, p. 195. Meyrick, Trans. Ent. Soc. Lond., 1906, pp. 170—171, 1906. Gener. Ins., fasc. 164, p. 89, 1915. Fletcher, Mem. Dept. Agr. Ind., Ent., vol. 11, pp. 117—118, 1929.

Pingrasa Walker, 1858, List Lep. Het. Brit. Mus., vol. 16, p. 226.

Tortricomorpha Felder, 1861, Sitz. Akad. Wiss. Wien, 1861, p. 43.

Moca Walker, 1863, List Lep. Het. Brit. Mus., vol. 27, p. 102.

Adricara Walker, 1863, *ibidem*, p. 114.

Topaza Walker, 1864, *ibidem*, vol. 29, p. 808.

Birthana Walker, 1864, *ibidem*, vol. 31, p. 145.

Alicadra Walker, 1865, *ibidem*, vol. 34, p. 1192.

Vinzela Walker, 1865, *ibidem*, p. 1260.

Jobula Walker, 1866, *ibidem*, vol. 35, p. 1888.

Methypsa Butler, 1875, Trans. Ent. Soc. Lond., 1875, p. 324.

Bursadella Snellen, 1880, Midd. Sum. Exp., vol. 4, part 1, 8, p. 83.

Thylacopleura Meyrick, 1886, Trans. Ent. Soc. Lond., 1886, p. 284.

Davendra Moore, 1887, Lep. Ceylon, vol. 3, p. 520.

Callartona HAMPSON, 1893, Fauna Brit. India, Moths, vol. 1, p. 233.
Scaptesylix HAMPSON, 1895, Trans. Ent. Soc. Lond., 1895, p. 283
Sthenistis HAMPSON, 1896, Fauna Brit. India, Moths, vol. 4, p. 541.
Hyperperissa WALSINGHAM, 1900, Cat. Lep. Het. Mus. Oxon., vol. 2, p. 546.
Pseudotortrix TURNER, 1900, Trans. Roy. Soc. S. Austral., vol. 24, p. 15.

When regarded in the sense of MEYRICK this genus consists of numerous heterogeneous species from many regions. Dr. CLARKE, who recently undertook a revision of MEYRICK's types in the British Museum, informed us that the conception of that author is no longer tenable and that *Imma* will have to be split in several distinct genera. Awaiting the opportunity of a revision of this group we put the following species, however heterogeneous, in the genus *Imma*, *sensu* MEYRICK, for the time being.

For the same reason we prefer to postpone giving a key to the Papuan species till a following opportunity.

Imma niphopelta MEYRICK, 1930

Imma niphopelta MEYRICK, 1930, Exot. Microl., vol. 4, p. 4.

Imma niphopelta lutescens subsp. nov.

♀ 22.5 mm. Palpus yellow with dorsal half of median segment and terminal segment entirely dark greyish-fuscous. Fore wing dark purplish-fuscous, with costal edge indistinctly greyish anteriorly; the collar and a submedian longitudinal streak yellow; shining metallic markings above the latter streak consisting of a narrow interrupted subcostal streak from base to before middle, of a moderately broad streak from above middle of base, somewhat dilated, curved upward posteriorly and merging in the former before its apex, and of a small spot halfway between middle of submedian yellow streak and dorsum; cilia greyish-tawny tinged lilac, basal third dark purplish-fuscous. Hind wing with costal band of black scaling dilated as far as the parting vein, posteriorly reaching to the closing vein; vein 4 with thicker scaling, which is triangularly dilated towards closing vein and marginal band.

Araucaria Camp, 800 m, March 19, 1939. One specimen. Differs from the nominate form by a yellow, instead of a white median streak, by the greyish-tawny, instead of white cilia, and a paler ground colour in the fore wing.

Imma aristogiton spec. nov. (fig. 736)

ἄριστος = noble, γείτων = neighbour

♂ 16 mm. Head, vertex fuscous-grey with lilac gloss, face pale yellowish-ochreous. Antenna fuscous, scape and base of flagellum yellow below. Palpus ascending, densely scaled with smoothly appressed scales, con-

siderably compressed laterally, anterior margin flattened, terminal segment under $^1/_2$, subobtuse; yellow, median segment with lower half below and terminal segment, except its upper edge, light dove-grey with lilac gloss. Thorax and abdomen fuscous-grey with lilac gloss, venter pale yellowish, anal tuft yellow. Legs whitish, anterior tibia and tarsus suffused with yellow above, median with grey edged with yellow, posterior with grey only. Fore wing elongate-triangular, dilated, costa little curved at base, straight posteriorly, apex rounded, termen gently rounded, hardly oblique. Fuscous-violet with bluish gloss, more so towards base, markings bright ochreous-yellow. Two-thirds of costa narrowly suffused with pale grey, tinged yellowish; a wedge-shaped transverse streak beyond $^2/_5$ of costa, strongly narrowed along its lower half, not reaching lower edge of cell, edges suffused: anterior gently sinuate, posterior edge concave; a less oblique erect-ovate moderate spot from slightly above lower edge of cell halfway towards $^3/_4$ of dorsum; a streak from termen well above tornus to apex, narrow along its lower half, more than twice as broad along its upper half, top rounded; a branch from middle of this streak to $^4/_5$ of costa, strongly dilated triangularly above, anterior edge gradually concave throughout; cilia fuscous-grey, paler towards apex, basal third fuscous-violet. Hind wing fuscous, basal half hyaline, veins dark fuscous, narrowed streaks of scales: subcellular, along vein 1c and halfway between veins 1a and 1b, the last one broadest, scaling extended between the two former streaks over posterior third of wing, in cell 2 to its middle, in cells 3—4—5 scaling continuous but sparse. Cilia pale fuscous-grey, basal third dark fuscous.

Tegumen weak, submembraneous, erect, top triangular. Uncus, gnathos, transtilla absent. Vinculum strong, ellipsoid. Valva subtriangular with narrowed base, cucullus obtusely projecting, sacculus simple, very broad at base, little sclerotized; harpe, a subapical sinuate spike. Anellus, a strong rising plate with two diverging apical projections, bristled at the top. Aedoeagus long, attenuated, with a series of short blunt thorns posteriorly, its base bulbate. Cornuti, a dense patch of short spines. Seventh abdominal segment with two pairs of strong coremata. (Slide no. 1042 D, type.)

Araucaria Camp, 800 m, March 6, 1939. One specimen. Nearest to *I. lyrifera* MEYRICK, 1910, from Kei Islands and Woodlark Island, differing by absence of longitudinal markings in the fore wing.

Imma selenaea spec. nov. (figs. 737, 738)

σεληναῖος = lighted by moon

♀ 22 mm. Head dark fuscous tinged lilac, side tufts laterally, orbits and sides of face pale ochreous. Palpus ascending, moderate; grey, basal segment and base of median segment above and beneath suffused with pale ochreous; terminal segment under $^1/_4$, acute. Thorax dark fuscous

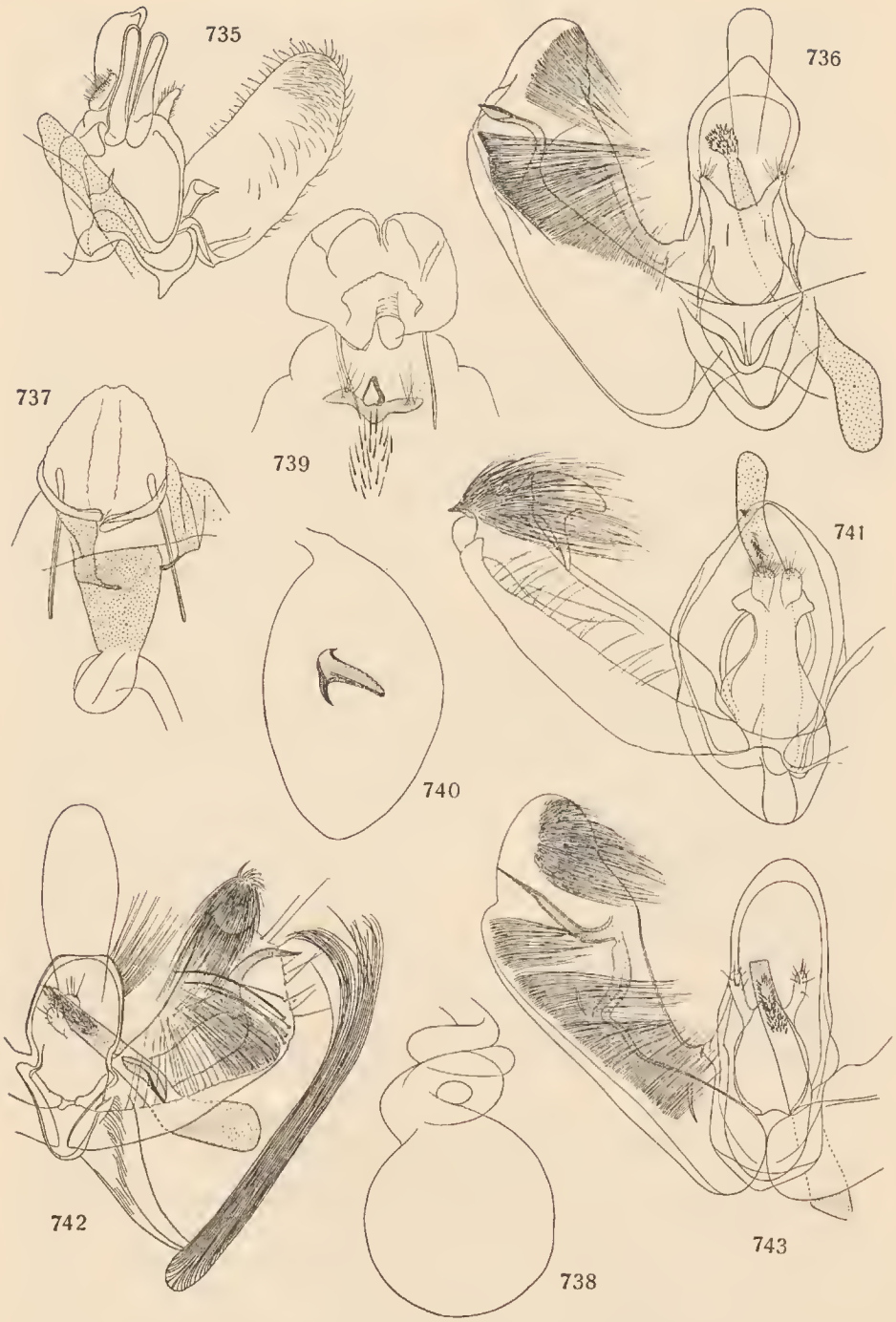
tinged lilac, pectus light grey. Abdomen blackish-fuscous, venter pale ochreous. Legs pale ochreous, tibiae and tarsi suffused with greyish-fuscous above. Fore wing subovate, considerably dilated, broadest at $^3/_4$, costa gently curved at base, straight in middle, curved along posterior fourth, apex rather rounded, termen rounded, little oblique. Dark fuscous-lilac; base suffused with rather light lilac-grey; a broad moderately inwards-oblique transverse greyish-lilac fascia, rather paler than ground colour, edges ill-defined: from below $^1/_3$ of costa to $^1/_3$ of dorsum, gradually narrowed below, interrupted by fold, just below fold with a moderate pointed streak reaching base, edge below this streak concave, posterior edge of fascia gradually slightly concave; a rather broad vertical zigzag transverse whitish-blue fascia from upper edge of cell to well above dorsum, edge well-defined except below, irregular; space between this and preceding fascia suffused with fuscous-violet, partially obscured anteriorly with blackish-fuscous; a moderate transverse fuscous-violet spot beyond the upper part of whitish-blue streak; a moderate rounded patch of fuscous-lilac suffusion on $^3/_4$ of costa, rather paler than ground colour, slightly irrorated with some tawny scales. Cilia deep lilac-fuscous, posterior half pale ochreous-fuscous. Hind wing hyaline from dorsum as far as upper edge of cell and vein 6, above this fuscous, becoming dark fuscous towards apex; a dark fuscous fascia extending from apex along termen to base of fold between veins 1a and 1b; this band reaching about halfway towards cell on vein 6, strongly narrowed towards base of vein 2, thence forming a narrowed terminal line and also forming triangular projections: on fold between vein 2 and 1c, on vein 1c and on fold between 1b and 1a, along this fold almost reaching base; veins 4 and 1c thicker scaled; dark fuscous scales sparsely but gradually scattered over cells between 2 and 6, except along their edges, on both sides of vein 1c and along dorsum. Cilia fuscous, posterior half pale ochreous-fuscous.

Ovipositor compressed dorso-ventrally, oval. Ostium simple, broad. Ductus bursae moderately long, coiled, a broad funnel-shaped colliculum indicated. Bursa copulatrix subspheroid, simple. (Slide no. 1043 D, type.)

Sigi Camp, 1500 m, March 20, 1939. One specimen.

Imma inclinata spec. nov. (fig. 741)

♂ 15 mm. Head, palpus, thorax rather dark fuscous-grey, terminal segment of palpus paler grey. Antenna dark fuscous, a narrow white longitudinal line towards base above. Abdomen grey. Legs dark fuscous, tarsi with pale ochreous bands on articulations of segments. Fore wing rather broad, dilated, costa moderately curved, apex obtuse, termen straight above, rounded below, little oblique; veins 7 and 8 stalked. Dark fuscous, markings whitish tinged pale ochreous. A suffused roundish dot below costa before apex; a narrow, slightly inwards-oblique transverse streak before $^2/_3$, reaching from dorsum before tornus to above middle of



Genitalia of Glyphipterygidae. Fig. 735: *Hilarographa spermatodesma* spec. nov., male. Fig. 736: *Imma aristogiton* spec. nov., Fig. 737: *I. selenaea* spec. nov., female. Fig. 738: *idem*, bursa copulatrix. Fig. 739: *Polygiton pachypus* spec. nov., female. Fig. 740: *idem*, bursa copulatrix. Fig. 741: *Imma inclinata* spec. nov., male. Fig. 742: *I. arenaria* spec. nov., male. Fig. 743: *I. atrotacta* spec. nov., male.

disc, rather ill-defined, narrowed and twice interrupted above, broadest above dorsum, lower extremity curved outwards; a very faint indication of pale interneural dots in a straight row before termen. Cilia blackish-fuscous with a narrow pale basal line and a blackish antemedian fascia. Hind wing greyish-fuscous, becoming paler anteriorly, darker suffused along margins. Cilia darker greyish-fuscous with a dark fuscous antemedian fascia and a sharp fuscous-whitish basal line, towards tornus these lines fading out.

Tegumen semimembraneous, bluntly pointed. Uncus and gnathos absent. Transtilla, a weak, slender and long, curved rod. Vinculum short, rounded. Valva concave, cucullus rounded, dorsally with a broad blade, a pointed basal projection directed basad, ventrally with a short acute point, sacculus rather broad, simple. Anellus a long rising plate, constricted above middle, top dilated, crowned with two blunt bristly knobs. Aedoeagus rather long, moderately sinuate towards apex, with a thick subapical thorn. Cornuti, an elongate patch of short spines. Coremata absent. (Slide no. 1044 D, type.)

Mist Camp, 1800 m, January 10, 1939. One specimen. Distinct by the inwardly oblique transverse streak.

Imma atrotacta spec. nov. (fig. 743)

♂ 18 mm. Head, palpus dark fuscous-grey. Antenna fuscous, scape dark grey. Thorax dark fuscous. Abdomen fuscous, anal tuft blackish mixed with pale ochreous. Legs whitish-fuscous, suffused with blackish-fuscous above, posterior leg with fuscous-grey, apex of anterior femur and rings on all tarsi pale ochreous. Fore wing with veins 7 and 8 stalked; elongate-subtriangular, costa curved at base, moderately rounded-prominent beyond middle, apex rather rounded, termen hardly curved, little oblique. Pale ochreous, anterior $^4/_5$ densely suffused, cloudy, and irrorated with dark violet-fuscous, posterior fifth irrorated with dark fuscous. A dark grey suffused streak along anterior $^4/_5$ of costa, an ill-defined pale-ochreous transverse mark across its middle; a suffused violet-black large transversely ovate spot along closing vein, a smaller irregular mark of blackish irroration above and beyond it and an ill-defined streak of this colour along fold, dilated so as to form a transverse spot above dorsum before tornus; an obscure light ochreous transverse mark on costa before apex, separated by a dark fuscous-grey blotch from a small pale spot in apex; a pale ochreous outwardly oblique transversely ovate spot in disc before termen below apex, rather ill-defined. Cilia fuscous-grey with darker subbasal shade. Hind wing greyish-fuscous, on basal half becoming paler and thinly scaled. Cilia fuscous-grey, with a darker subbasal fascia and a minute pale basal line.

Tegumen weak, erect-ovate. Uncus, gnathos, transtilla absent. Valva large, dilated, cucullus with a dense patch of bristles; sacculus $^3/_4$, narrow,

inner edge bristled; harpe, a long spike and a sinuate longitudinal fold. Vinculum very short. Anellus erect-ovate, broad, with two apical bristly projections. Aedoeagus rather long, straight. Cornuti, an apical patch of short spikes. (Slide no. 1050 D, type.)

Top Camp, 2100 m, January 25, 1939. One specimen. Perhaps allied to *I. accuralis* (WALKER) and *I. mylias* MEYRICK. Distinct by the large black discal spot.

Imma arenaria spec. nov. (fig. 742)

♂ 20 mm. Head, thorax, abdomen pale ochreous-yellow, abdomen with suffused pale greyish-lilac transverse bands, basal half of venter whitish (thorax denuded, medianly traces of greyish-lilac suffusion). Antenna moderately ciliated, pale yellow, towards apex slightly infuscated. Palpus pale yellow, apical half very pale greyish-lilac. Legs whitish-yellow. Fore wing with veins 7 and 8 separate; elongate, dilated, costa gently curved at base, slightly prominent at $^2/_3$, apex obtuse, termen hardly rounded, little oblique. Pale ochreous-yellow, somewhat brighter ochreous towards costa; a moderate subbasal pale lilac-grey transverse fascia, somewhat outwardly oblique from below costa to below base of fold, truncate above, furcate below; anterior branch of this furcation obliquely to base of wing, thence along base of dorsum, posterior branch angularly bent, upper half along fold to $^1/_4$ of wing, slightly dilated, lower half outwardly oblique, to $^2/_5$ of dorsum, narrowed in middle; a moderately broad lilac-fuscous fascia from $^3/_5$ of costa to beyond $^3/_4$ of dorsum, abruptly narrowed along lower $^2/_3$, anterior edge well-defined, moderately concave; lower $^2/_3$ of posterior edge ill-defined, obscured by pale brownish suffusion, extending $^1/_3$ towards termen; a small outwardly oblique greyish-lilac dot on $^4/_5$ of costa connected by a suffused brownish line with tornus, indication of a second such line beyond lower half of preceding; a well-defined black marginal streak from costa before apex to tornus, narrowed below, its anterior edge obtusely dentate on terminal veins. Cilia (imperfect) pale greyish, a darker basal shade and a narrow pale basal line. Hind wing fuscous, a large semicircular pale ochreous-yellow patch with base along basal $^1/_5$ of costa, extending more than halfway across disc. Cilia (imperfect) pale greyish.

Tegumen moderate, ovate, with bristled outer edge. Anus large. Uncus, gnathos absent. Transtilla narrowed in middle. Valva strong, dilated, cucullus a projecting round knob, densely covered with long bristles; sacculus moderate, with bristled edge, beyond its top a series of strong bristles; harpe, a long postmedian hook. Vinculum small. Anellus with membraneous base, apically forming two rounded, bristled pads. Aedoeagus rather long, moderately bent, with dilated base. Cornuti, a dense sheaf of short spines and a strong sclerite. Coremata extremely large:

long pencils of hairs extensile from narrow sacs (extended in figure). Slide no. 1051 D, holotype.

Bernhard Camp, 50 m, October 28, 1938 (J. Olthof). Two specimens.

Tortyra Walker, 1863

Tortyra Walker, 1863, List Lep. Het. Brit Mus., vol. 28, p. 510. Meyrick, Proc. Linn. Soc. N.S. Wales, vol. 32, p. 97. Gener. Ins., fasc. 164, pp. 18—19, 1915. Fletcher, Mem. Dept. Agr. Ind., Ent., vol. 11, p. 228, 1929.

Saptha Walker, 1864, *ibidem*, vol. 30, p. 1015.

Badera Walker, 1866, *ibidem*, vol. 35, p. 1819.

Choregia Zeller, 1877, Hor. Soc. Ent. Ross., vol. 13, p. 191.

Chordates Snellen, 1877, Tijd. v. Ent., vol. 20, p. 49.

Walsinghamia Riley, 1889, Proc. Ent. Soc. Wash., vol. 1, p. 157.

Key to the Papuan species

1. Hind wing without yellow markings . . . . . *prasochalca* Meyrick
   Hind wing with yellow streak or spots 2
2. Basal area of fore wing irrorated with green 3
   Basal area with three green longitudinal stripes . . . . . *libanota* Meyrick
3. Fore wing with a broad entire transverse green fascia at $^1/_3$. *pretiosa* Walker
   Fore wing with two separate transverse green streaks: from $^1/_3$ of dorsum to middle of disc, thence to middle of base of wing, and from $^1/_3$ of costa, respectively, reaching slightly beyond middle of disc . . . . . *divitiosa* Felder

Tortyra divitiosa (Walker, 1864)

Saptha divitiosa Walker, 1864, List Lep. Het. Brit. Mus., vol. 30, p. 1015.

Badera nobilis Felder, 1875, Reise Novara, Lep. Het., vol. 2, pl. 139, fig. 9.

Tortyra divitiosa, Meyrick, Proc. Linn. Soc. N.S. Wales, vol. 32, pp. 97, 99—100, 1907. Durrant, B.O.U. & Woll. Exped., Lep., p. 167, 1915. Diakonoff, Treubia vol. 19, p. 202, 1948.

Distribution: India, Moluccas, Buru, Philippines, New Guinea, Bismarck Islands, Northeast Australia.

Araucaria Camp, 800 m, March 19, 1939. One female.

Anthophila Haworth, 1811

Anthophila Haworth, 1811, Lep. Brit., p. 471. Fletcher, Mem. Dept. Agr. Ind. Ent., vol. 11, p. 16, 1929.

Simaëthis Leach, 1815, Edinburgh Encycl., vol. 9, p. 135.

Gauris Hübner, 1826, Verz., bek. Schm., p. 374.

Xylopoda Latreille, 1829, *in* Cuvier, Règne Anim., vol. 5, p. 412.

Eutromula Froelich, 1829 (*non descr.*), Enum. Tortr. Würtemb., p. 11.

Entomoloma Ragonot, 1875, Bull. Soc. Ent. France, ser. 5, vol. 5, p. XLIII.

Hemerophila Fernald, 1900 (*non descr.*), Canad. Ent., vol. 32, p. 239.

Orchemia Fernald, 1900 (*non descr.*; *nec* Guenée, 1845), Canad. Ent., vol. 32, pp. 238—239.

Allonomyma Busck, 1904, Proc. U.S. Nat. Mus., vol. 27. pp. 745—746.

Key to the Papuan species

1. Markings of fore wing contain violet, blue-metallic or green-metallic lines or bars 2
   Fore wing without blue or violet metallic markings, sometimes markings purplish 3
2. Three transverse fasciae and a bar in disc between first and second: violet or blue-metallic . . . . . *tricyanitis* MEYRICK
   Two transverse fasciae and spots above cell anteriorly greenish-metallic . . . . . *lutescens* FELDER
3. Fore wing ochreous-yellow with first transverse fascia ferruginous . . . . . *taprobanes* ZELLER [1])
   Not thus, mostly fuscous with orange or whitish transverse fasciae . . 4
4. Hind wing snow-white with a black costal streak . . *niphocrypta* MEYRICK
   Hind wing fuscous with or without orange markings 5
5. Fore wing with markings altogether or partially orange 6
   Fore wing with markings whitish 10
6. Fore wing with a distinct discal spot 7
   Fore wing without a distinct discal spot 9
7. Fore wing with two transverse fasciae before discal spot 8
   Fore wing with only one transverse fascia before discal spot . . . . . *xanthogramma* MEYRICK
8. Markings white and ochreous . . . . . *orthogona* MEYRICK
   Markings orange . . . . . *limonias* MEYRICK
9. Fore wing with median transverse fascia strongly angularly projecting in middle posteriorly . . . . . *chi* DURRANT
   This fascia without such projection posteriorly . . . . . *basalis* FELDER
10. Basal half of fore wing with three transverse fasciae . . *topitis* DURRANT
    Basal half of fore wing with only one transverse fascia . . . . . *porphyrathma* MEYRICK

Anthophila basalis (FELDER, 1875)

Simaethis basalis FELDER, 1875, Reise Novara, Lep. Het., vol. 2, pl. 138, fig. 19. PAGENSTECHER, Zoologica, vol. 29, p. 229, 1900. MEYRICK, Proc. Linn. Soc. N.S. Wales, vol. 32, p. 111, 1907. Gener. Ins., fasc. 164, p. 21, 1915. Trans. Ent. Soc. Lond., vol. 87, p. 523, 1938. TURNER, Proc. Linn. Soc. N.S. Wales, vol. 38, p. 210, 1913.
Simaethis chionodesma LOWER, 1896, Trans. R. Soc. S. Austral., vol. 20, p. 167.
Anthophila basalis, DIAKONOFF, Treubia, vol, 19, p. 204, 1948.

Distribution: Celebes, Moluccas, Buru, Amboina, Aru, New Guinea, Philippines, Formosa, East Australia.

Bernhard Camp, 50 m, November 12, 1938 (J. OLTHOFF). Two males, one female.

Polygiton gen. nov. (fig. 744)

πολυ = many, γειτων = neighbour

Head small, with appressed scales. Ocellus small, inferior. Proboscis developed, densely scaled towards base. Antenna over $^1/_2$, moderately ciliate in male, scape short. Labial palpus moderate, ascending, appressed

[1]) Occurrence of this Ceylonese species in New Guinea is not certain.

to face, slightly exceeding vertex, median segment somewhat compressed laterally, thickened with appressed scales, roughish throughout, terminal segment short, thickened with scales, roughish along posterior edge, apex obtusely pointed. Maxillary palpus minute, but distinct. Thorax strongly swollen, large, spherically projecting beyond bases of fore wings, smooth. Anterior femur and tibia thickened with dense scales, roughly projecting

Fig. 744: *Polygiton pachypus* gen. nov., spec. nov., male, wing neuration and head.

below, somewhat shorter on femur in female, median tibia with rough hair-scales above, posterior tibia clothed with long roughly projecting scales above and beneath. Fore wing broad, subtriangular, 1b furcate, 2 from beyond $^3/_5$, 3—5 remote, discoidal between 3 and 4 very oblique, above 4 vertical, 7 and 8 long-stalked, 7 to termen, 11 from before middle, cell rather narrow, accessory cell absent. Hind wing broad, triangular-semiovate, slightly over 1, cilia $^1/_8$; 2 from $^3/_4$, 3 and 4 connate, 5—6 tolerably parallel, 5 from above middle, 7 curved downward at base, from before angle, cell rather narrow, lower angle acute, discoidal outwardly oblique, parting vein absent.

Genotype *Polygiton pachypus* spec. nov., male, female.

Distinct by the thickened anterior legs. Differs from *Hilarographa* Meyrick also by separate veins 6 and 7 in the hind wing, from *Heliostibes* Zeller by shorter palpi and the origin of vein 2 in the fore wing; superficially is nearest to *Anthophila* Haworth, and possesses its facies, but differs in having subacute labial palpi, rough legs and quite differently

shaped cell of the fore wing. Actually, the present genus belongs to the subfamily Hypertrophinae, and is closely allied with *Oxytropha* DIAKONOFF, from which genus it chiefly differs by shorter labial palpi, with the median segment not reaching the bases of the antennae, and with the terminal segment very short (instead of being longer than the half of the median segment, as in *Oxytropha*); furthermore, by the ciliate antennae of the male, by the inferior, instead of a posterior, ocellus, and by other minor differences. This is the first record of the subfamily outside the Australian region.

Polygiton pachypus spec. nov. (figs. 739, 740, 744, 750)

παχύς = thick, πούς = foot

♂, ♀ 15.5—16 mm. Head and thorax light yellowish-ochreous, the latter becoming ochreous-whitish above. Antenna pale yellowish-ochreous, ringed with blackish, rings becoming paler towards base. Palpus ochreous in male, pale yellowish-ochreous slightly mixed with fuscous in female. Abdomen dark fuscous-grey in male, blackish-fuscous, on basal half becoming whitish-fuscous in female. Legs: anterior black, tarsus whitish with a broad subapical blackish ring, median dark fuscous, tarsus with whitish basal half, posterior leg dark fuscous, basal half and apical tuft of tibia and median third of tarsus whitish. Fore wing broadly subtriangular, costa moderately curved throughout, apex somewhat obtusely pointed in male, more pointed in female, termen sinuate, little oblique. Greyish-fuscous, partially suffused with fulvous-tawny, irrorated with dark fuscous. A large yellowish-white basal spot moderately suffused with deeper ochreous-yellow, extending over basal third of wing, margin moderately convex, almost vertical, edged with a suffused fulvous-tawny streak; a semioval dark fuscous patch occupying basal fourth of costa, edge, except along costa, rather suffused with fulvous-tawny, on base of wing suffused with light ochreous-yellow; a small elongate spot just beyond middle of costa, in female extended across wing so as to form a subquadrate small patch; in both sexes a crescentic whitish-yellow mark in centre of disc below preceding spot, open above, in female indistinctly connected with the costal spot posteriorly; these markings followed by a transverse ill-defined streak of fulvous-tawny suffusion; a yellowish-white dot on costa at $^1/_6$; shining leaden-purple scales arranged as follows: a dot in centre of the dark costal patch; another dot below costa just beyond subapical whitish dot; two transverse streaks: at $^1/_2$ and at $^3/_4$, tolerably direct, slightly outwards-convex; third more distinct streak from $^3/_4$ of costa outwardly concave to before termen below apex, thence outwardly convex, tolerably parallel to wing edge, submarginal, to tornus; purple streaks more or less separated on upper half of wing by dark fuscous suffusion; dark fuscous irroration forming an ill-defined longitudinal narrow streak from before apex to below lower angle of cell, interrupted by

purple streaks; two elongate blackish dots: before $^1/_3$ and before $^2/_3$ of termen, beyond and before the submarginal purple streak, respectively (indistinct in male); apex and termen suffused with fulvous-tawny, lower half of termen with a narrow marginal dark fuscous line. Cilia shining fuscous-purple. Hind wing deep coffee-brown with golden gloss, basal two-fifths in male yellow-orange, traversed by two longitudinal streaks of fuscous irroration, in female deep orange with a small subbasal fuscous spot on upper edge of cell. Cilia golden, basal third deep coffee-brown, dorsal cilia orange throughout.

Tegumen short. Uncus very large, bifid, points narrowed, porrect. Gnathos absent. Transtilla, a broad band. Valva with very broad base, narrowed posteriorly, costa thickened, strongly curved, forming a blunt projection at base, cucullus rounded; harpe, a longitudinal small sclerite. Vinculum moderate. Anellus tubular, enveloping dorsal part of aedoeagus, with a ventral spit, bristled along edges. Aedoeagus rather short, truncate, with dilated basal half, and with a small apical tooth. (Slide no. 1047 D, holotype.)

Ovipositor floricomous, semispheroid. Ostium erect, with strongly sclerotized edge. Limen, a strong transverse fold below ostium, dilated in middle, at each side with a moderate flap, bearing four strong bristles. Ductus bursae narrow, long, upper half densely denticulate, lower half coiled. Bursa copulatrix ovoid. Signum, a robust spike with dilated and flattened base. (Slide no. 1048 D, allotype.)

Araucaria Camp, 800 m, March 24, 1939 (holotype, male). Bernhard Camp, 50 m, October 20, 1938 (allotype, female). Two specimens.

Choreutis Hübner, 1826

Choreutis Hübner, 1826, Verz. bek. Schm., p. 373. Meyrick, Gener. Ins., fasc. 164, p. 24, 1915. Fletcher, Mem. Dept. Agr. Ind., Ent., vol. 11, p. 47, 1929.
Porpe Hübner, 1826, Verz. bek. Schm., p. 373.
Millieria Ragonot, 1874, Bull. Soc. Ent. France, ser. 5, vol. 4, p. 173, 1874.
Ripismia Wocke, 1876, *in* Heinemann, Schmett. Deutschl., ser. 2, vol. 2., p. 399.
Choreutidia Sauber, 1902, *in* Semper, Schmett. Philipp., vol. 2, p. 399.

Key to the Papuan species

1. Fore wing with five transverse bands of white speckling, fourth band with a loop in middle . . . . . *streptatma* Meyrick
   Fore wing with two such bands and a longitudinal patch to apex . . . . . *simplex* spec. nov.

Choreutis simplex spec. nov. (fig. 749)

♂ 13 mm. Head, thorax and abdomen fuscous-grey, lower part of face white. Antenna black ringed with white. Palpus with median segment dilated by three long projecting pencil-like tufts posteriorly, terminal segment with a median tuft anteriorly; median segment with basal half

whitish, first tuft with a grey longitudinal median streak, posterior half of segment fuscous-grey becoming blackish towards base, tufts and apex narrowly edged with white, terminal segment blackish with an oblique transverse median white line extending over tuft, tip of tuft white. Legs pale grey speckled with dark fuscous, anterior tibia and tarsus black, white-ringed, median and posterior tibia with a median and subapical black band, median and posterior tarsus white with two rings and a black apical fourth. Fore wing broad, triangular, costa and termen rather rounded, apex obtuse. Grey, along costa and more so along termen suffused with dark brownish-fuscous, finely irrorated throughout with whitish, giving rise to ill-defined transverse bands; white costal dots: at $^1/_3$, at $^3/_5$ and just before apex, and three minute equidistant white points along basal third of costa; a transverse band from first costal dot, narrow above, abruptly dilated and becoming ill-defined at $^1/_3$, apparently to $^1/_3$ of dorsum; a broad transverse band from below second costal dot and confluent with it, to dorsum before tornus, its posterior edge traceable, regularly strongly convex; an elongate patch of whitish irroration from beyond second fourth of this band to apex; costal area except at $^1/_4$, and terminal area, not irrorated with whitish; a transversely elongate spot in apex continued as a minute terminal line: brownish-fulvous. Cilia dark grey, basal third fuscous-black, posterior two thirds irregularly barred with whitish, except opposite tornus, where the cilia are entirely black. Hind wing dark brownish-fuscous, a streak along $^3/_4$ of costa whitish, coarse whitish scales scattered towards apex and upper third of termen and along upper third of terminal edge. Cilia whitish becoming grey along lower third of termen and on dorsum, throughout with a broad blackish basal band.

Tegumen weak, broad, narrowed and weakly bristled. Uncus, gnathos, transtilla absent. Valva elongate, concave, cucullus with strong bristles directed basad; sacculus moderate, with a patch of strong bristles beyond base. Vinculum broad, semicircular. Anellus a weak tube. Aedoeagus rather short, top curved. (Slide no. 1046 D, type.)

Sigi Camp, 1500 m, February 20, 1939. One specimen. An obscure species, perhaps allied to *C. streptatma* Meyrick, from Papua.

ELACHISTIDAE

Key to the Papuan genera of Elachistidae

1. Fore wing with vein 8 out of stalk of 6 + 7 . . . . . *Cosmiotes* Clemens
   Fore wing with vein 6 out of stalk of 7 + 8 . . . . *Elachista* Treitschke

Cosmiotes Clemens, 1860 (fig. 745)

Cosmiotes Clemens, 1860, Proc. Acad. Nat. Sci. Phil., 1860, p. 8. Braun, Mem. Amer. Ent. Soc., No. 13, pp. 6, 7 (keys), 89–91 (redescr.), figs.16, 16a, 16b (neur.), 56, 56a, 57a (♂ gen.), 103, 103a, 104, 105 (♀ gen.), 1948.

We did not succeed in finding any reliable differences between the characters of the following species and those of the present genus, as elaborately redescribed by Miss BRAUN recently. There are the following slight discrepancies in neuration: vein 9 originates out of the stalk of 6 and 7 rather beyond its base while in the genotype it is only connate with this stalk; second vein which terminates in termen is connate with that stalk, not separate, which would indicate that the vein in question might be rather vein 5, not 4, as understood by Miss BRAUN; in hind wing veins 2 and 3 appear to originate from base on a long stalk, as is the case in *Cosmiotes*, but the upper branch of this fork is much longer, terminates more apicad and seems to be vein 4 rather than 3 (as described in *Cosmiotes* which is, however, immaterial, the interpretation of this vein being rather a question of taste).

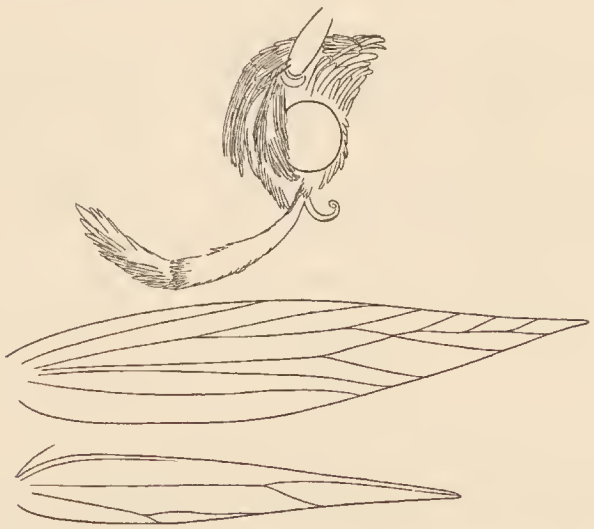


Fig. 745: *Cosmiotes epicaeria* spec. nov., head and wing neuration.

It is evident that these discrepancies are not sufficient for the separation of our species in a new genus, the more because the male genitalia are extremely like those in *Cosmiotes scopulicola* BRAUN, from Michigan, except for a broader and larger saccus.

The conclusion as to the distribution of the genus is remarkable: *Cosmiotes* is represented by three American species, two European ones and one from the Snow Mountains of New Guinea! However, these small obscure insects escape notice easily, and we may expect their discovery in other regions in future.

Cosmiotes epicaeria spec. nov. (figs. 745, 746)

ἐπικαίριος = important

♂ 10 mm. Head pale fuscous-grey, apices of scales on frons and face broadly whitish. Antenna light grey. Palpus blackish-grey, terminal

segment greyish-white, with a blackish median ring. Thorax whitish-grey suffused with light bronze-fuscous. Abdomen dark grey, anal tuft pale greyish-ochreous. Legs grey, articulations of segments and a median band on tibia whitish, posterior tibia greyish-white above, spurs glossy white. Fore wing lanceolate, moderate, costa gently curved, a small projection of cilia before middle, a larger one at $^3/_4$ of costa, apex pointed, termen very oblique. Greyish-white, densely irrorated throughout and towards base suffused with bronze-grey-fuscous. A very ill-defined broad direct transverse band of coarse greyish-white irroration, dilated towards dorsum and extended anteriorly along edges of wing to before its middle. Other markings blackish: a narrow moderate strigula along fold from beyond base, sometimes absent; a cloudy dot below costa before middle of wing, another well defined, somewhat smaller dot in fold below and beyond preceding, sometimes reduced to a small longitudinal streak; one or two short horizontal streaks in middle of disc posteriorly; a longitudinal blotch of coarse black irroration along posterior fifth of costa, reaching halfway across wing and emitting a rather irregular curved line across middle of cilia, reaching as far as tornus; otherwise cilia before median line whitish, speckled with black, beyond it greyish-fuscous; a basal patch of black irroration opposite tornus, dorsal cilia fuscous-grey. Hind wing and cilia fuscous-grey.

Uncus with claw-like lobes. Socius, a series of three minute bristles. Gnathos, a moderate round bristly knob with a transverse sclerotized fold at base. Valva elongate, rather slender, costa with a moderate blunt projection beyond middle. Cucullus with a rather stout, subacute spike. Sacculus with a short process at base, weakly bristled apically. Anellus broad below, apical lobes rather broad and long. Saccus erect-triangular, long. Aedoeagus long, slender, base bulbate. (Slide no. 1053 D, holotype.)

Letterbox Camp, 3600 m, September 11, 1938 (holotype), September 10, 1939. Two specimens.

Elachista Treitschke, 1833

Elachista Treitschke, 1833, Schmett. Eur., vol. 2, p. 177. Braun, Mem. Amer. Ent. Soc., No. 13, pp. 18–34, 1948.

Aphelosetia Stephens, 1834, Ill. Brit. Entom., Haust., vol. 4, pp. 287–288.

Cycnodia Herrich-Schäffer, 1853, Schmett. Eur., vol. 5, pp. 46–47, pl. 13, figs 13, 14.

Poeciloptilia Herrich-Schäffer, 1853, (*nec* Hübner), *ibidem*, vol. 5, p. 55, pl. 14, figs. 3–9.

Phigalia Chambers, 1875, Canad. Ent., vol. 7, p. 107 (*praeocc.*).

Hecista Wallengren, 1881, Ent. Tidskr., vol. 2, p. 95.

Aphigalia Dyar, 1903, Bull. U.S. Nat. Mus., No. 52, p. 544.

Elachista griseola spec. nov. (fig. 747)

♂ 10 mm. Head, thorax, abdomen light fuscous-grey, face glossy whitish-grey, anal tuft pale grey. Palpus moderate; dark grey; terminal

segment under 1; pale grey, a black submedian ring. Legs grey, articulations of segments, and a median band on tibia whitish, posterior tibia grey above. Fore wing with veins 3 and 4 absent, 5 and 9 almost connate with stalk of 7 and 8, from acute angle of cell, 6 out of 7 before 8; whitish-grey, becoming white posteriorly, basally finely retinate and somewhat suffused with fuscous-grey, hardly bronze-tinged, this retination gradually becoming a coarser irroration posteriorly, on posterior fourth of wing forming a coarse blackish irroration extended over basal half of cilia and terminated by a broad black median line, cilia beyond this and along dorsum pale fuscous-grey. Hind wing with veins 4 and 5 absent, cell open between 3 and 6; pale grey slightly tinged fuscous, with a silvery gloss, cilia pale fuscous-grey.

Uncus with elongate blunt lobes, bristly at inner side. Socii absent. Gnathos, a rounded bristly knob. Valva elongate, rather slender, top rounded, unarmed; basal process of sacculus small, compressed. Saccus large, triangular. Anellus elongate, apical lobe moderate, erect-triangular, bristly. Aedoeagus rather long, moderate, base slightly thickened. (Slide no. 1054 D, type.)

Letterbox Camp, 3600 m, August 30, 1938. One specimen. We see no reason in separating this species from *Elachista*. The neuration in both wings is much reduced for this genus, but this situation is not exceptional: the configuration of veins in the present species is, in fact, identical with that of *Elachista bifasciella* Treitschke, from the mountains of Central Europe.

SCYTHRIDAE

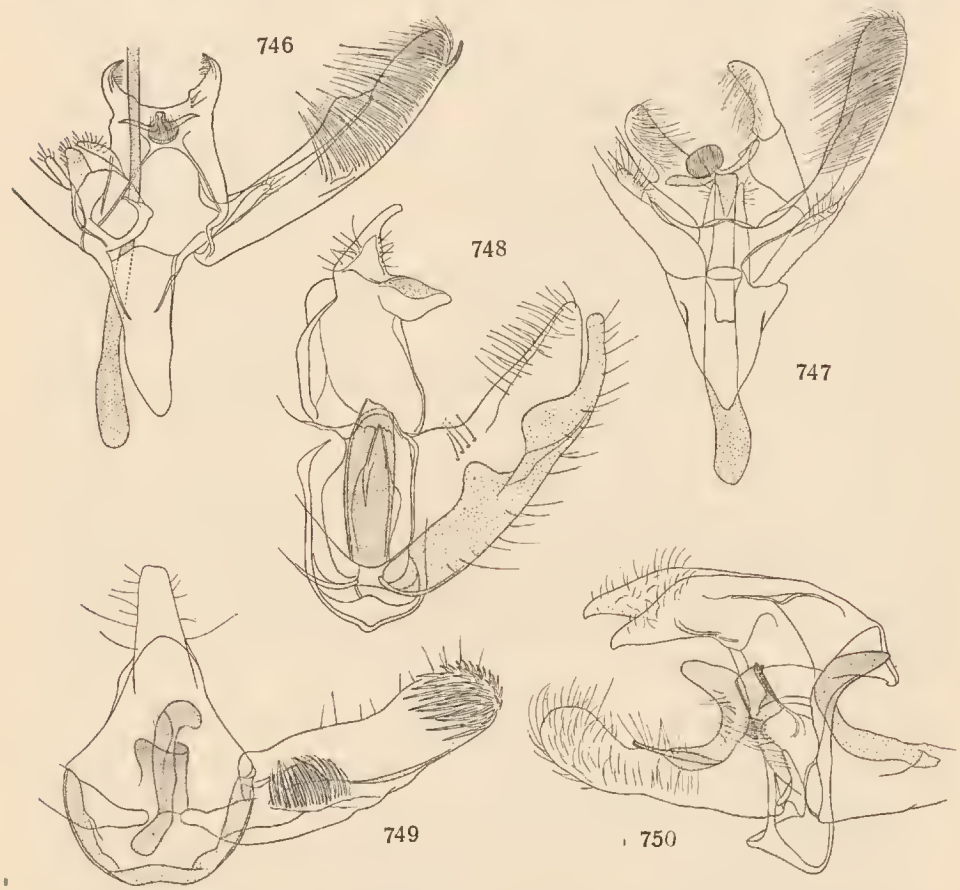
Scythris Hübner, 1826

Scythris Hübner, 1826, Verz. bek. Schm., p. 414.
Galanthia Hübner, 1826, *ibidem*, p. 417.
Butalis Treitschke, 1833, Schmett. Eur., vol. 9, part 2, p. 108 (*praeocc.*).
Copida Sodoffsky, 1837, Bull. Soc. Ent. Mosc., vol. 10, No. 6, p. 95.
Enolmis Duponchel, 1846, Cat. Meth. Lep. Eur., pp. 340–341.
Bryophaga Ragonot, 1874, Bull. Soc. Ent. France, 1874, pp. CCXLII–CCXLIII.
Arotrura Walsingham, 1888, Insect Life, vol. I, pp. 116–117, figs. 22 a–c.
Colinita Busck, 1907, Journ. N.Y. Ent. Soc., vol. 15, p. 139.
Apostibes Walsingham, 1907, Ent. Monthl. Mag., vol. 43, p. 57.

Scythris solitaria spec. nov. (fig. 748)

♂ 10 mm. Head pale yellowish-ochreous, densely mixed with dark fuscous. Antenna dark fuscous, scape pale yellowish-ochreous. Palpus pale yellowish-ochreous, base of median segment and terminal segment except base suffused with fuscous. Thorax brownish-fuscous. Abdomen rather dark fuscous. Legs pale yellowish-ochreous, suffused with fuscous except articulations of segments and tips of spurs, posterior tibia with basal third whitish. Fore wing broadly lanceolate, costa gently curved

along basal $^2/_3$, slightly impressed at $^2/_3$, apex pointed, termen very oblique, tornal angle indefinite. Rather dark fuscous; anterior $^2/_3$ of wing irregularly and densely strewn with longitudinal pale yellowish-ochreous scales from beyond base, less dense at $^1/_3$ of dorsum and before $^2/_3$ of costa, these



Genitalia of the Glyphipterygidae, the Elachistidae and the Scythridae. Fig. 746: *Cosmiotes epicaeria* spec. nov., male. Fig. 747: *Elachista griseola* spec. nov., male. Fig. 748: *Scythris solitaria* spec. nov., male. Fig. 749: *Choreutis simplex* spec. nov., male. Fig. 750: *Polygiton pachypus* spec. nov. male.

areas forming ill-defined dark patches of ground colour; an inwardly oblique irregular transverse fascia of light yellowish-ochreous irroration from $^2/_3$ of costa to about $^2/_3$ of dorsum, its anterior edge with two irregular longitudinal projections in middle of disc and a broader one along dorsum, its posterior edge with a small angular projection at $^1/_4$; this fascia edged posteriorly on costa and along its lower two-thirds by a dark fuscous suffusion not irrorated with ochreous, costal part extended to apex; posterior third of wing fuscous, apical sixth and middle of disc indistinctly tinged paler bronzy-ochreous, some fine pale ochreous irroration in an outwardly oblique band from $^1/_4$ of transverse fascia to above tornus,

somewhat narrowed below; two stigmata distinct: dark fuscous, first discal rounded, plical somewhat elongate, below and slightly beyond preceding. Cilia dark fuscous. Hind wing rather dark bronze-fuscous, a whitish attenuated streak along basal two-thirds of costa. Cilia greyish-fuscous.

Tegumen somewhat erected. Uncus with a short blunt hook. Socius, a row of fine bristles. Gnathos, a triangular flap with finely embossed upper surface. Valva large, narrowed, somewhat curved; cucullus bluntly triangular; sacculus strong, ending in a blunt curved process reaching to top of cucullus, inner edge of sacculus with two subtriangular projections: before and beyond middle. Vinculum broad, short, bluntly pointed. Aedoeagus short, moderate, pointed. (Slide no. 1052 D, type.)

Sigi Camp, 1500 m, February 25, 1939. One specimen.

YPONOMEUTIDAE

Key to the Papuan genera of Yponomeutidae

1. Hind wing with veins 5 and 6 stalked . . . . . *Argyresthia* Hübner
   Hind wing with veins 5 and 6 separate 2
2. Labial palpus very long, longer than thorax . . . . . *Betharga* Walker
   Labial palpus not thus long 3
3. Hind wing with vein 4 absent or coincident with 3 4
   Hind wing with vein 4 present 5
4. Hind wing with veins 6 and 7 remote, 5 approximated to 6 . . . . . *Yponomeuta* Latreille
   Hind wing with veins 6 and 7 rather approximated towards base, 5 approximated to 4 . . . . . *Epichthonodes* Meyrick
5. Fore wing with vein 7 to costa 6
   Fore wing with vein 7 to apex or termen 7
6. Fore wing with veins 6 and 7 stalked . . . . . *Docostoma* gen. nov.
   Fore wing with veins 6 and 7 separate . . . . . *Comocritis* Meyrick
7. Hind wing with veins 3 and 4 connate or stalked 8
   Hind wing with veins 3 and 4 separate 13
8. Labial palpus short, porrect; hind wing with veins 6 and 7 separate . . . . . *Nosymna* Walker
   Labial palpus moderate or long, if porrect, then hind wing with veins 6 and 7 rather approximated towards base 9
9. Fore wing with veins 7 and 8 stalked 10
   Fore wing with veins 7 and 8 separate 11
10. Fore wing with vein 10 absent . . . . . *Porphyrocrates* gen. nov.
    Fore wing with all veins present . . . . . *Iriania* gen. nov.
11. Antenna thickened . . . . . *Anaphantis* Meyrick
    Antenna not thickened 12
12. Fore wing with vein 2 from angle; palpus subascending; posterior tibia loosely scaled above . . . . . *Anticrates* Meyrick
    Fore wing with vein 2 from well before anglo; palpus recurved; posterior tibia smooth . . . . . *Toxopeia* gen. nov.

13. Fore wing with vein 7 to angle; vein 2 from considerably before angle of cell . . . . . *Atteva* Walker

Fore wing with vein 7 to termen; vein 2 from near angle of cell . . . . . *Lactura* Walker

Argyresthia Hübner, 1826

Argyresthia Hübner, 1826, Verz. bek. Schm., p. 422. Zeller, Isis, vol. 32, p. 204, 1839. Linn. Ent., vol. 2, pp. 234—241, 1847. Herrich-Schäffer, Schm. Eur., vol. 5, p. 52, pl. 13, figs. 48—52, 54, 55, 1853. Stainton, Ins. Brit. Tin., p. 181, pl. 6, fig. 6, 1854. Manual, vol. 2, p. 369, 1859. Wocke, *in* Heinemann, Schm. Deutschl., Kleinschm., vol. 2, part 2, p. 647, 1876. Snellen, Vlind. Ned., Microl., pp. 523—524, 1882. Meyrick, Handb. Brit. Lep., p. 761, fig., 1895. Rev. Handb., pp. 727—728, 1928. Spuler, Schm. Eur., vol. 2, p. 446, fig., 1910. Forbes, Lep. N. York, p. 344, fig. 202, 1924. Fletcher, Catal. Ind. Ins., vol. 17, pp. 1—2, 1928. Mem. Agric. Ind., Ent., vol. 11, p. 21, 1929. Pierce, Genit. Brit. Tin., pp. 51—52, pl. 30, 1935.

Oligos Treitschke, 1830, Schmett. Eur., vol. 8, p. 299 (*non descr.*); etc.

Ederesa Curtis, 1833, Entom. Mag., vol. 1, p. 191; etc.

Argyrosetia Stephens, 1829, Cat. Brit. Ins., vol. 2, p. 205 (*non descr.*); etc.

Ismene Stephens, 1834, Ill. Brit. Entom. Haust., vol. 4, pp. 247—248; etc.

Blastotere Ratzeburg, 1840, Forst. Ins., vol. 2, p. 240; etc.

Argyresthia nivifraga spec. nov. (figs. 758, 759)

♂ 12.5—14 mm. Head white, sometimes faintly tinged pale ochreous. Antenna dark brown, white-ringed, scape white. Palpus whitish, infuscated except tip, sometimes slightly touched with fuscous. Thorax very pale ochreous, sometimes almost white, tegula deep brown-brassy. Abdomen pale ochreous. Legs whitish, anterior leg suffused with black, median tibia with small subbasal and broad median and apical black rings, posterior tibia suffused with dark grey along apical half, tarsi black-ringed. Fore wing lanceolate, costa moderately curved, apex pointed, tornus indefinite. Light greyish-violet moderately speckled with white; anterior $^2/_3$ of costa rather narrowly snow-white, with numerous dark brown dots, irregularly spaced and of inequal size, largest dot at $^3/_5$ of costa, towards base dots confluent, so as to form a short dark brown costal streak; posterior third of costa suffused with dark brown, with three semiovate snow-white moderate dots, ultimate one subapical; three moderately broad strongly inwards-oblique parallel transverse fasciae, slightly dilated downward, irregularly edged by series of small white points, light tawny, glossy, little contrasting with ground colour of wing, from $^2/_5$, $^3/_5$ and $^4/_5$ of costa, respectively, anterior ones terminated by fold, ultimate one reaching to dorsum; some dark brown irroration in disc beyond base; dorsum below fold suffused with glossy light tawny except a small spot of ground colour below base of fold; three subtriangular white dorsal dots: first well beyond base, not reaching fold, second at $^2/_3$ of wing length, top on fold, with 2—3 dark brown points on dorsal edge, third below end of fold, small, irregular; all these spots edged except below with dark brown; dorsal edge between spots and on base also edged dark brown; a row of small irregular

white dots along terminal margin to apex. Cilia along costa and around apex dark brown with white bars opposite marginal markings, on termen and dorsum fuscous-whitish, a cloudy dark subbasal shade around apex and along upper half of termen. Hind wing leaden-whitish, glossy, cilia ochreous-grey-whitish.

Tegumen small with a cardiform dorsal plate. Uncus pared, lobes rounded, lower edge with brush-like bristles and a blunt point below top. Gnathos absent. Valva elongate-ovate, disc with a longitudinal short-haired thickening towards base. Vinculum with a paired saccus. Anellus triangular. Aedoeagus extremely long, slender, sinuate. Cornuti absent. (Slides no. 1130 D, holotype, figured in ventral aspect, and no. 1131 D, paratype, in ventrolateral aspect.)

Scree Valley Camp, 3800 m, November 22, 1938 (holotype). Letterbox Camp, 3600 m, September 9, 1939. Six specimens. The male genitalia approach closely the type of those in the European species of this genus, as figured by PIERCE (*loc. cit.*).

Porphyrocrates gen. nov. (fig. 751)

πορφύρεος = purple, κράτος = strength

Head smooth, side-tufts and back of vertex appressed-scaled. Ocellus absent. Proboscis vestigial, short, both halves diverging, scaled. Antenna over $^1/_2$, in male serrulate, fasciculate-ciliated, ciliations over 1, scape moderate, without pecten. Labial palpus moderate, moderately curved, ascending, slender, rather smooth, median segment not reaching base of

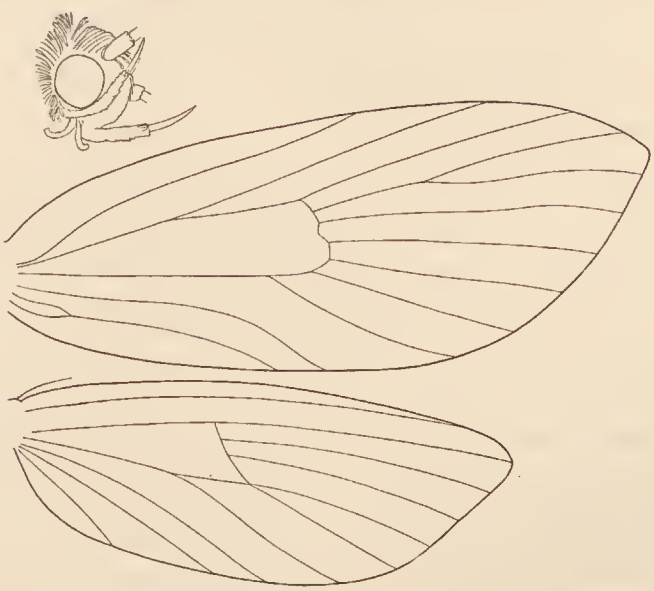


Fig. 751: *Porphyrocrates aurostricta* gen. nov., spec. nov., male, head and wing neuration.

antenna, moderately thickened at apex, terminal segment under 1, little thickened, acute. Maxillary palpus vestigial. Thorax not crested. Legs robust, smooth, anterior tibia short, dilated with smooth scales and compressed laterally, tarsus short, under 1; posterior tibia with a smooth pencil of hair-scales at apex above. Fore wing broad, ovate-triangular; cell short ($^1/_2$), accessory cell, undeveloped; 2 from $^4/_5$, 3 from before angle, 4 from angle, 4, 5, 6, 7 + 8 and 9 remote and tolerably equidistant, 7 and 8 stalked, 7 to termen, 9 out of upper angle, 10 absent, 11 from somewhat beyond middle. Hind wing $^3/_4$, short (hardly over $^3/_4$), semiovate, obtusely pointed, cilia $^1/_2$; 2 from beyond $^2/_3$, 3 and 4 connate from angle, 5—7 remote, parallel, tolerably equidistant; closing vein tolerably straight, considerably outwards-oblique, hence lower angle of cell projecting.

Genotype *Porphyrocrates aurostricta* spec. nov., male.

Perhaps nearest to *Lamyristis* MEYRICK, 1911, from Ceylon, but differing chiefly by the absence of vein 10 in the fore wing.

Porphyrocrates aurostricta spec. nov. (figs. 751, 765)

♂ 19 mm. Head brownish-black, face and frons except sides pale orange. Antenna brownish-black, about apical fifth pale ochreous. Palpus pale ochreous, densely suffused with blackish, except a narrow basal and a subapical ring of terminal segment, a subapical ring of median segment and extreme tip of terminal which are black. Thorax brownish-black. Abdomen deep brown. Legs brownish-black, anterior and median tarsus pale orange throughout, posterior tibia and apical half of tarsus suffused with pale orange. Fore wing triangular-ovate, rather broad, dilated, broadest at $^4/_5$, costa moderately curved anteriorly, somewhat prominently bent at $^2/_3$, apex rounded, termen little rounded, long, oblique. Deep bronze-brassy, densely and evenly irrorated with dull dark brown. A deep reddish-orange transverse submedian fascia, tolerably vertical, anterior edge regularly and strongly concave, posterior edge serrate, with two small indentations: at $^1/_4$ and at $^3/_4$, and a rounded larger excavation below middle, posterior edge forming a slender projection above the latter indentation, hooked downward. Cilia deep purplish-brown with violet and brassy reflections. Hind wing semiovate; deep orange, a dark brown basal patch not reaching costa, terminated below by vein 1a, outer edge somewhat irregular, strongly and bluntly projecting in middle; a broad terminal dark brown fascia occupying about $^1/_6$ of wing, from costa before apex to tornus, somewhat dilated on veins 4—3, narrowed to a point on termination of vein 1a; a few scattered dark brown scales along dorsum and in disc. Cilia as in fore wing.

Tegumen moderate. Uncus pointed. Gnathos broad, obtuse, porrect, denticulate towards apex above. Transtilla, a narrow, straight, strong rod. Valva moderate, narrowed, costa with a strong tooth at base; a larger tooth and a narrow ridge above middle of disc; sacculus over $^1/_2$, rather

broad. Saccus moderate, very broad. Anellus, a rounded lobe below aedoeagus with two patches of strong bristles. Aedoeagus large, cylindrical. Cornuti, two patches of short dense spines and a single very long spine (in figure vesica partially extruded). Slide no. 1132 D, type.

Hollandia, sea level, July, 1938. One specimen.

Iriania gen. nov. (fig. 752)

Head smooth, rather flattened. Ocelli absent. Proboscis developed. Antenna $^{4}/_{5}$, finely ciliated in male, ciliations 1 or somewhat under 1, scape rather short, somewhat flattened, with a small basal pecten of 3—4 hairs. Labial palpus moderate, tip hardly or just reaching base of antenna: little curved, subascending or porrect, median segment slightly thickened

Fig. 752: *Iriania mystica* gen. nov., spec. nov., male, head and wing neuration.

with smoothly appressed scales, terminal segment under 1, more slender, pointed. Maxillary palpus minute. Thorax without crest. Posterior tibia with smooth scales and sparse long fine appressed hairs above and beneath. Fore wing broad, subovate, bluntly pointed, termen moderately rounded, oblique, long; no raised scale-tufts. 1b strong, simple, 2 from well before angle (from about $^{6}/_{7}$), 3 from angle, approximated to 4 at base, 4, 5, 6 remote, 7 and 8 stalked, 7 to termen, 8 to costa, stalk from below angle,

9 from angle, 10 remote, 11 from about $^1/_3$ of cell, which is triangularly dilated posteriorly, discoidal vein convex, no accessory cell. Hind wing $^1/_2$—$^3/_4$ (in genotype $^2/_3$), semiovate, broadest beyond middle, apex bluntly pointed, cilia $^4/_5$; 2 from $^2/_3$, 3 and 4 connate from angle, 5 remote, median, 6 and 7 separate, more or less approximated at base, 7 to apex, cell strongly triangularly dilated posteriorly, discoidal outwardly oblique, no parting vein, 8 rather strong, remote, straight, to $^4/_5$ of costa.

Tegumen elongate. Uncus very small, triangular. Gnathos broad short, obtuse, top serrulate. Transtilla absent. Valva moderate, costa ending in a curved acute hook, cucullus either ill-defined or well-developed. Anellus with hairy lobes. Saccus sometimes developed. Aedoeagus rather slender, moderately curved, long. Cornuti, long arrows.

Ovipositor bilobed, pointed, erectile. Ostium simple. Limen, colliculum, sometimes developed. Ductus bursae long, coiled, simple. Bursa copulatrix ovoid. Signum, one transverse slender rod.

Genotype *Iriania mystica* spec. nov., male.

This puzzling genus, when studied superficially, might be attributed to the Oecophoridae, as the neuration of the both fore and hind wings very much approaches that of the genera *Parocystola*, *Tachystola*, *Coesyra*, or *Chambersia*, however, with the exception of two important characters, viz. the simple vein 1b and the origin of vein 11 (from $^1/_3$) in the fore wing. Besides, flattened smooth head and rather short diverging labial palpi have little in common with that family. In our opinion *Iriania* can best be placed in *Yponomeutidae*, pending further evidence. The rather uniformous small species remind of *Scythris*, but have broader fore wings; the breadth of hind wings varies specifically from $^1/_2$ to $^3/_4$.

Key to the species of *Iriania*

1. Apex and sometimes termen as far as one fourth of wing light orange-yellow . . . . . *lutescens* spec. nov.
   Apex and termen brown or fuscous, sometimes with light yellow markings 2
2. With bright yellow markings which are sometimes suffused, but always distinctly lighter than ground colour 3
   Markings formed by sparse ochreous irroration, very distinct 6
3. Without distinct transverse fasciae; posterior half of wing irregularly irrorated with yellow . . . . . *ochlodes* spec. nov.
   One or more transverse yellow fasciae distinct 4
4. One antemedian transverse fascia, a suffusion on basal half of dorsum, a costal dot at $^3/_4$ . . . . . *minor* spec. nov.
   Three or four transverse fasciae 5
5. Three bright yellow transverse fasciae . . . . . *tricosma* spec. nov.
   Four deep yellow transverse fasciae . . . . . *auriflua* spec. nov.
6. Face pale yellow . . . . . *anisoptera* spec. nov.
   Face fuscous . . . . . *mystica* spec. nov.

Iriania mystica spec. nov. (figs. 752, 760)

μυστικός = secret

♂ 10 mm. Head glossy bronze-fuscous. Antenna blackish-fuscous, ringed with pale yellow. Palpus and collar (damaged) pale yellowish, terminal segment of palpus infuscated along front. Thorax and abdomen blackish-bronze. Legs dark bronze, posterior tibia mixed with yellowish towards apex, tips of spurs and rings on apices of tarsal segments pale golden-yellowish. Fore wing ovate, apex tolerably pointed, termen long, moderately rounded, oblique. Brownish-fuscous with faint purplish gloss, irrorated with yellowish-ochreous scales which form an ill-defined direct broad transverse band at middle, an irregular transverse irroration at $^3/_4$, extending as far as $^4/_5$, and tending to form transverse strigulae, and an irregular, ill-defined, dilated, submarginal line along lower half of termen, mixed with dark brownish-fuscous and merging into preceding irroration; a rounded large spot of ground colour before apex, not irrorated with ochreous. Cilia ochreous, partially infuscated, basal half and an apical band brown, costal cilia dark brownish-fuscous. Hind wing $^3/_4$, deep bronze, dorsal edge with purplish gloss. Cilia bronze, basal half dark bronze with slight purplish gloss.

Uncus small, triangular, top hooked. Gnathos broad, top rounded, denticulate above. Valva elongate, costa indicated throughout, posterior third forming an acute hook curved downward, cucullus absent; sacculus almost 1, bristly along posterior half, ending in a short point. Anellus forming a bilobed sheath around aedoeagus, upper edge of each lobe with two small rounded, hairy projections. Vinculum rounded. Aedoeagus moderately curved. Cornuti apparently a huge spike and two long arrows. (Slide no. 1125 D, type.)

Lower Mist Camp, 1600 m, January 15, 1939. One specimen.

Iriania anisoptera spec. nov. (fig. 755)

ἄνισος = inequal, *πτέρον* = wing

♀ 10 mm. Head fuscous-olive, face pale yellow. Antenna blackish, ringed with olive. Palpus fuscous with blackish tip, on inner side pale yellow. Thorax, abdomen dark fuscous. Legs fuscous, tarsi banded with yellowish. Fore wing ovate, costa curved at base, hardly concave in middle, apex subobtuse, termen rounded, oblique, very long. Brown with purplish tinge, basal halves of scales pale grey, giving rise to very fine irroration. Markings dull olive-ochreous, sprinkled with brown. A large ill-defined transverse blotch extending over basal half of dorsum to before base, upper half narrowed, with top almost touching costa at $^1/_4$, posterior edge of this blotch moderately convex, vertical; a moderately sinuate broad transverse median fascia, almost direct, narrowed towards costa; an ill-defined transverse fascia at $^3/_4$, triangularly dilated below and occupying

lower half of termen; posterior part of wing beyond preceding with an ill-defined marginal streak of olive-ochreous irroration, which is twice interrupted on costa before apex and merges in the base of the preceding fascia; an ill-defined whitish-yellow dot on costal extremity of each first and second transverse fasciae. Cilia glossy olive-ochreous with ill-defined cloudy bands: a moderate basal, a broad median and a narrow apical purplish-brown band, median one extended around apex, so as to occupy almost entire breadth of cilia. Hind wing under $^2/_3$; deep golden-purplish-bronze. Cilia pale greyish becoming darker towards tornus and on dorsum, with a broad purplish-bronze subbasal band throughout.

Limen, a large transverse semiovate fold, with upper edge thickened and finely haired. Colliculum small. Signum rather broad, with the two extremities acute, its upper edge minutely denticulate. (Slide no. 1129 D, type.)

Rattan Camp, 1200 m, March 8, 1939. One specimen. Under surface of both fore and hind wings with a pale golden-yellow apical band.

Iriania tricosma spec. nov. (fig. 754)

τρι = three, κόσμος = a gem

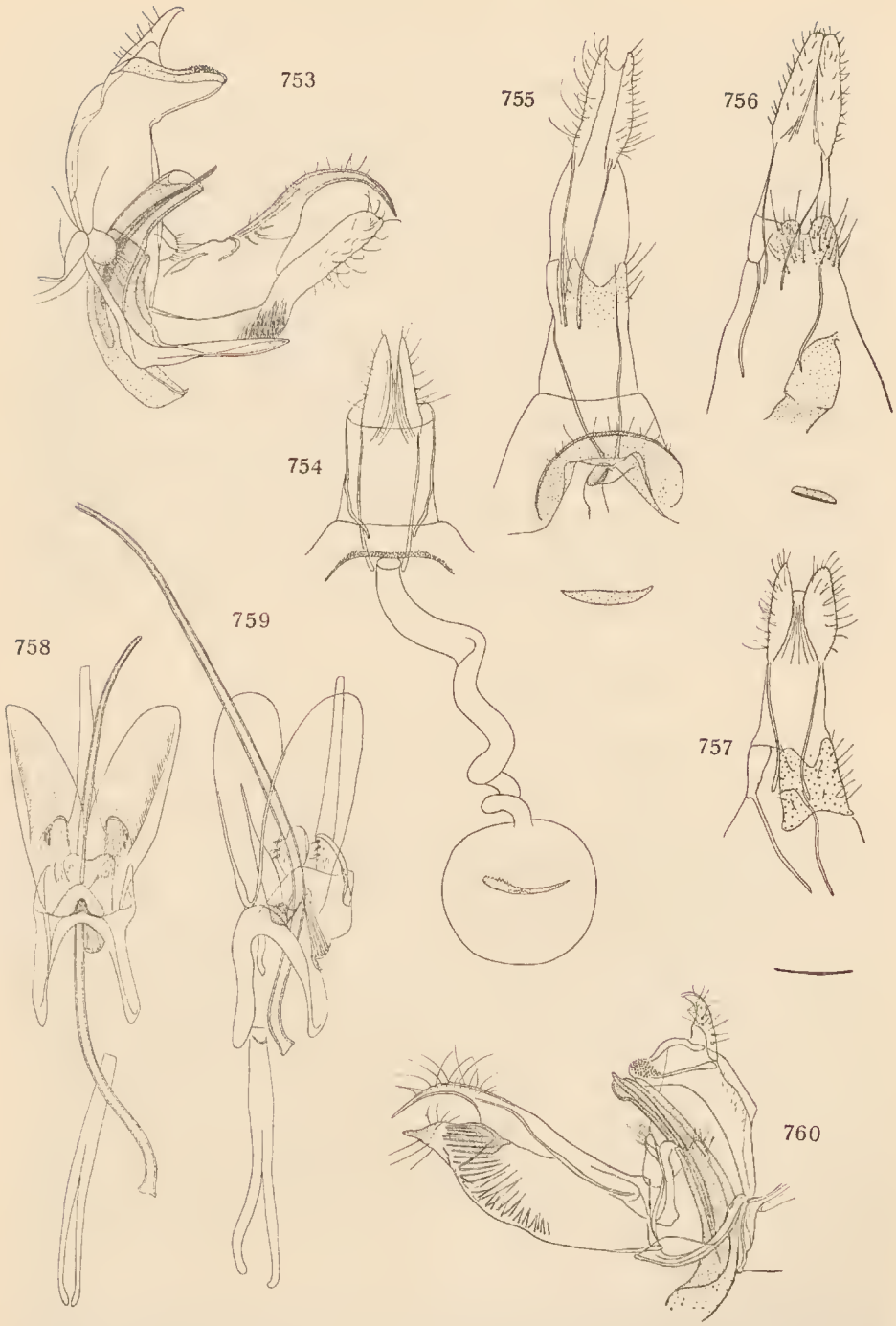
♀ 8 mm. Head, palpus fuscous with golden gloss. Antenna dark fuscous, narrowly ringed with whitish. Thorax, abdomen, legs dark fuscous, posterior tarsus golden-whitish. Fore wing rather broad, ovate, costa gently curved, more so at base, apex pointed, termen curved, long, oblique. Rather light fuscous with slight purplish gloss. Three vertical bright golden-yellow transverse fasciae edged with dull deep brown irroration: first subbasal, broad, on costa slightly narrowed and finely irrorated with fuscous; second median, moderate, slightly curved outwards on costa, with edges somewhat irregular, parallel; third at about $^4/_5$, broader than preceding, not reaching terminal edge, with lower extremity slightly dilated and rounded; space between first and second fasciae is slightly broader than that between second and third; wing beyond third fascia deep brown, dull. Cilia dark purplish-fuscous with whitish base, an ill-defined glossy golden-coppery median band. Hind wing $^2/_3$, brassy-fuscous, becoming purplish towards anal angle. Cilia brassy-fuscous.

Limen, a moderate transverse trapezoidal lobe, upper edge thickened, denticulate. Colliculum absent. Signum, a long slender curved rod, with one extremity slightly dilated, another acute, inner edge denticulate. (Slide no. 1124 D, type.)

Araucaria Camp, 800 m, March 12, 1939. One specimen.

Iriania auriflua spec. nov.

♀ 9 mm. Head shining fuscous, face pale golden. Antenna dark fuscous, broadly ringed with pale yellow. Palpus light yellowish, apex of median segment and terminal segment except base fuscous. Thorax dark fuscous.



Genitalia of Yponomeutidae. Fig. 753: *Iriania minor* spec. nov., male. Fig. 754: *I. tricosma* spec. nov., female. Fig. 755: *I. anisoptera* spec. nov., female (below: signum). Fig. 756: *I. ochlodes*,spec. nov., female (below: signum). Fig. 757: *I. lutescens* spec. nov., female (below: signum). Fig. 758: *Argyresthia nivifraga* spec. nov., male, ventral aspect (type). Fig. 759: *idem*, ventrolateral aspect (paratype). Fig. 760: *Iriania mystica* spec. nov., male.

(Abdomen missing.) Legs (imperfect) fuscous, posterior tarsus with whitish bands. Fore wing broadly ovate, pointed. Glossy pale leaden, finely irrorated with fuscous (posterior halves of scales being fuscous). Markings deep yellow broadly edged with dull dark coffee-brown. Ill-defined narrow yellow suffusion from costa except extreme edge to dorsum; a rounded yellow spot on costa beyond base and a small longitudinal mark opposite this above dorsum; two inwardly oblique, outwardly curved, tolerably parallel transverse fasciae: from $^2/_3$ and $^3/_5$ of costa to dorsum at $^1/_4$ and beyond $^1/_2$ of wing, respectively, both somewhat dilated on costa, first one interrupted in fold, considerably dilated and projecting anteriorly from below fold to dorsum, second fascia hardly dilated on dorsum, rather mixed with dark brown along its third fourth; a slightly undulate moderate submarginal fascia from costa before apex to above tornus, along lower part of termen extending to edge of wing. Cilia pale glossy yellowish-leaden, from apex to termen with a deep purplish-brassy apical band, quickly becoming broader towards tornus and extended over entire length of cilia there; an ill-defined interrupted dark brown antemedian band; small yellow prominences on middle of termen tipped with brown. Hind wing $^1/_2$, golden-fuscous. Cilia bronze-fuscous.

Sigi Camp, 1500 m, February 17, 1939. One specimen.

Iriania minor spec. nov. (fig. 753)

♂ 7.5 mm. Head fuscous mixed with pale yellow, face glossy. Antenna dark fuscous, ringed with pale yellow. Palpus pale yellow. Thorax fuscous mixed with pale yellow. Abdomen fuscous, becoming paler posteriorly, anal tuft glossy pale grey. Legs light fuscous, posterior tibia with whitish apex, posterior tarsus dark fuscous ringed with whitish, rings becoming narrower posteriorly. Fore wing ovate, rather pointed, termen very oblique. Brownish-fuscous, basal halves of scales pale ochreous, giving rise to a fine pale-ochreous irroration, markings golden-yellow mixed with brownish. A large, ill-defined patch on dorsum from beyond base to $^1/_4$ of wing, connected with costa beyond $^1/_5$ by an ill-defined slightly inwards-oblique narrowed suffused band; a tolerably vertical transverse band from costa just before middle, gradually dilated towards dorsum; a moderate rounded-transverse spot on $^3/_4$ of costa and a few yellow scales opposite this above tornus; space between first and second fascia slightly purplish-tinged, edged laterally with dull brown. Cilia fuscous-golden, basal half duller fuscous. Hind wing $^1/_2$, light golden-bronze, cilia (imperfect) concolorous.

Uncus somewhat longer than in *mystica*. Gnathos more pointed. Valva shorter, costa with the posterior half forming a more curved hook; cucullus present, digitoid, hairy; sacculus $^1/_2$, not pointed, top bristly. A pointed rather long saccus present. Anellus with a single lobe at each side. Aedoeagus shorter. Cornuti, two arrows. (Slide no. 1126 D, type.)

Rattan Camp, 1200 m, March 6, 1939. One specimen.

Iriania ochlodes spec. nov. (fig. 756)

ὀχλώδης = tiresome

♀ 11 mm. Head light ochreous mixed with dark fuscous, face (damaged) pale grey mixed with yellowish? Antenna dark fuscous finely ringed with ochreous, a broader ochreous band around apex of scape. Palpus long, median segment reaching base of antenna: dark fuscous, finely speckled with ochreous, median segment with ochreous base and apex. Thorax, abdomen dark fuscous. Legs dark fuscous, spurs and tarsal rings golden-whitish (anterior legs missing). Fore wing somewhat elongate-ovate, costa curved anteriorly, apex subobtuse, termen gradually rounded, oblique, long. Fuscous, basal third and posterior half suffused with blackish-fuscous; coarsely irrorated from beyond middle with elongate yellow scales, this irroration becoming denser and deeper yellow from middle towards tornus; pale yellow elongate dots: on middle of costa, ill-defined, at $^3/_4$ of costa and in apex, the last mentioned dot the smallest. Cilia (imperfect) pale yellowish densely mixed with blackish-fuscous. Hind wing over $^2/_3$; whitish evenly suffused with pale fuscous-golden, towards apex somewhat darker clouded. Cilia light fuscous with golden gloss.

Limen absent. Colliculum developed, rather large, elongate-ovate above, truncate below. Signum short, angles subobtuse. (Slide no. 1128 D, type.)

Sigi Camp, 1500 m, February 26, 1939. One specimen.

Iriania lutescens spec. nov. (fig. 757)

♀ 8—10 mm. Head light yellow, face, palpus pale yellow. Antenna pale yellow finely ringed with brown. Thorax, abdomen dark fuscous. Legs fuscous, ringed with pale fuscous. Fore wing elongate-ovate, costa little curved, apex obtuse, termen rounded, oblique. Rather light yellowish-fuscous, moderately irrorated with dark fuscous, posterior half of dorsum and apical fourth of wing pale golden yellow, partially suffused with deep orange, forming small ill-defined spots; an ill-defined transverse rather broad patch of fuscous suffusion on costa beyond middle, connected in middle of disc with a large patch of coarse dark fuscous irroration mixed with deep orange, sometimes touching termen above tornus but leaving a conspicuous orange-yellow area in apex of wing; a moderate fuscous projection extending to $^4/_5$ of costa and enclosing a rounded spot of yellow ground colour on costa beyond $^3/_4$; apex narrowly edged with dark fuscous; anterior half of dorsum and fold posteriorly suffused with fuscous. Cilia dark fuscous with orange-golden gloss, indistinctly barred above and in tornus with pale yellowish, a whitish basal line around apex. Hind wing $^1/_2$; deep golden-bronze, an ill-defined interrupted whitish line along costa, in apex and along upper half of termen. Cilia fuscous-brassy, with a pale basal line and darker brassy submedian shade, costal cilia paler.

Ostium simple, without limen or colliculum. Signum long, slender, without denticles. (Slide no. 1127 D, holotype.)

Sigi Camp, 1500 m, February 24, 1939 (holotype), February 27, 1939. Three specimens.

Docostoma gen. nov. (fig. 761)

δοκός = bean, *στόμα* = mouth

Head in male with loose scales, side-tufts roughly spreading, head in female with loosely appressed scales; face smooth. Ocellus small, posterior. Proboscis developed. Antenna $^3/_4$, in male ciliate, ciliations over 1, scape elongate, strongly flattened, concave so as to form a small eyecap, with a

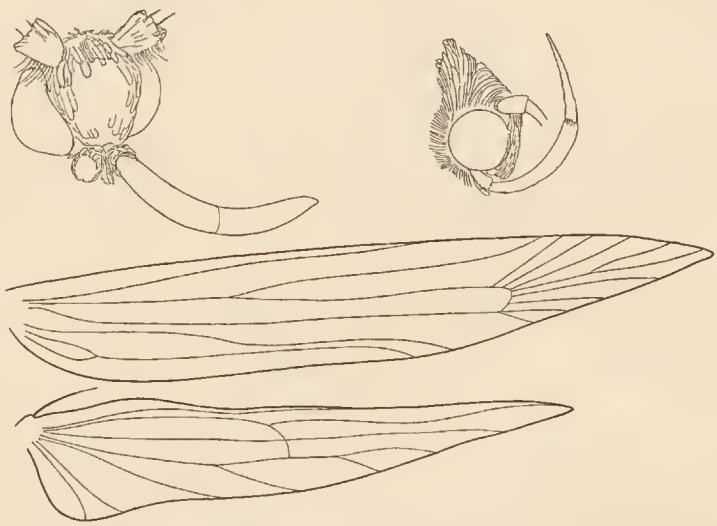


Fig. 761: *Docostoma insignis* gen. nov., spec. nov., male head (left), female, head (right) and wing neuration.

strong pecten, in female antenna simple, scape moderate, not flattened. Labial palpus in male long, curved, ascending, very stout and smooth throughout, terminal segment 1, as stout as median, tip conical; in female long, recurved, smooth, median segment exceeding base of antenna, slightly thickened, terminal segment 1, slender, acute. Maxillary palpus minute, appressed. Thorax without crest. Posterior tibia with dense bristly subappressed hairs above and beneath. Fore wing lanceolate, cell long; 1b furcate, 2 very short, from near angle, 3 short, from angle, 5 parallel, median, 6 to costa, 7 out of the middle of 6 (6 and 7 stalked), 8, 9 and 10 nearly approximated from the upper angle of cell, 11 from slightly before middle. Hind wing $^3/_4$, lanceolate, cilia 2; 2 from $^2/_3$, 3 and 4 stalked from angle, 5 parallel, median, 6 absent, 7 gently sinuate: curved upward and approximated to 8 beyond base, curved downward and approximated to 5 in middle, to apex.

Genotype *Docostoma insignis* spec. nov., male, female.

An interesting genus, apparently nearest to *Stichotactis* MEYRICK, from Sudan, with which it agrees in neuration of the hind wing, exceptional for the family, but differs by long-stalked veins 7 and 8 in fore wing and curious palpi of the male.

Docostoma insignis spec. nov. (figs. 761, 763, 766)

♂, ♀ 14.5 mm. Head pale ochreous in male, light grey in female. Antenna pale fuscous, paler in female. Palpus in male pale ochreous, externally suffused with greyish-fuscous or dark fuscous, in female grey. Thorax in male sordid whitish-ochreous, anterior third suffusedly dark fuscous, in female grey, tip whitish. Abdomen pale fuscous. Legs whitish-fuscous more or less suffused with darker fuscous, anterior leg blackish-fuscous above, posterior tibia and tarsus densely and evenly irrorated with fuscous grey, tibia with a broad median and a smaller apical rings, tarsus with an apical ring on each segment, ochreous-whitish. Fore wing lanceolate, apical fourth much narrowed, apex slightly produced, acute, costa hardly curved, except at base, dorsum sinuate, prominently rounded beyond base, termen appearing slightly concave, extremely oblique, tornus indefinite. Pale ochreous-fuscous, in female pale greyish-fuscous. Markings in male formed by dark fuscous suffusion; a moderate elongate-triangular spot on base of costa reaching to middle of base, edge strongly inwards-oblique; a large elongate-triangular patch on costa from $^1/_3$ to before apex, top reaching to below centre of wing, continued as an inwardly oblique streak to above dorsum at $^2/_5$; anterior edge of costal patch slightly outwards-oblique, posterior edge strongly inwards-oblique; an ill-defined transverse discal streak along closing vein, its lower extremity extended anteriorly as a small suffused submarginal streak; an ill-defined cuspidate longitudinal mark in disc before apex, pointing apicad; female evenly suffused with fuscous-grey, without dark markings. Cilia sordid pale ochreous-fuscous; around apex somewhat darker fuscous, scales with whitish tips. Hind wing pale, whitish-bronze, somewhat darker in female. Cilia pale fuscous, appearing pale fulvous in certain lights.

Tegumen large, angulate at the sides, with long bristles laterally. Uncus moderate, curved. Gnathos, a transverse rod with bidentate median process. Transtilla modified: an invert-V-shaped rod, forming in the middle a large rising body crowned with two long, stout, acute spines. Valva elongate, costa separate, posterior half subclavate, bristly; sacculus almost 1, ending in a curved, blunt hook. Vinculum rounded. Aedoeagus membraneous, supported dorsally by a long and slender sclerotized rod. Cornuti, short spines. (Slide no. 1135 D, holotype.)

Ovipositor very long, erected, tineoid. Apophyses very long, slender. Ostium not modified. Ductus bursae long, narrow, finely tuberculate along lower half, coiled. Bursa copulatrix small, ovoid. Signum, one tooth. (Slide no. 1036 D, allotype.)

Mist Camp, 1800 m, January 12, 1939 (holotype, male). Sigi Camp, 1500 m, February 19, 1939 (allotype, female). Rattan Camp, 1200 m, February 12, 1939. Two males, one female. The single female specimen is somewhat different by even grey tinge, but with legs coloured exactly like these in the males, and structurally quite alike, except labial palpi which difference must be a sexual character.

Toxopeia gen. nov. (fig. 762)

Head with closely appressed scales. Ocellus posterior. Proboscis rather weak. Antenna $^3/_4$, in female pubescent, scape moderate, without pecten. Labial palpus, recurved, rather exceeding the base of antenna, thickened with appressed scales slightly roughish along anterior edge from base to

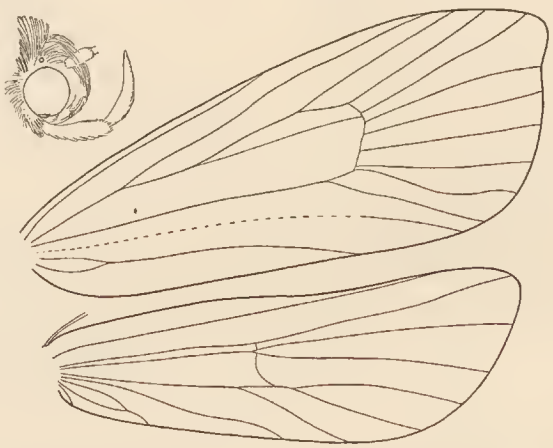


Fig. 762: *Toxopeia demodes* gen. nov., spec. nov., female, head and wing neuration.

before apex, terminal segment 1, spindle-shaped, pointed. Maxillary palpus absent. Thorax not crested. Posterior tibia smooth with a few fine appressed hairs towards apex above. Fore wing with vein 1b furcate, 2 from well before angle, 3 and 4 closely approximated at base, from angle, 5 remote, parallel, 6, 7, 8, 9 separate and tolerably equidistant, 7 to termen, 10 little approximated, 11 from $^1/_3$, accessory cell developed. Hind wing $^2/_3$, ovate-trapezoid, elongate, dilated, broadest at $^3/_4$, cilia under 1; 2 from beyond $^5/_6$, 3 and 4 short-stalked, 5 bent up towards base and approximated to 6, 6 and 7 separate, tolerably parallel along basal half, then diverging.

Genotype: *Toxopeia demodes* spec. nov., female.

Possibly nearest to *Anoista* Turner, 1939, from Tasmania, in which genus vein 7 in the fore wing terminates in the apex, while the veins 2—6 are equidistant and the labial palpi are smooth-scaled.

Dedicated to the late Dr. L. J. Toxopeus, the leader of the Netherlands party of the Expedition.

Toxopeia demodes spec. nov. (figs. 762, 764)

δημώδης = common

♀ 11.5 mm. Head, antenna fuscous. Palpus fuscous, base of median segment whitish, terminal segment dark fuscous with a narrow oblique submedian transverse band. Thorax fuscous, apex and tips of tegulae paler, touched with fulvous. Abdomen sordid pale fuscous, venter whitish-fuscous. Legs fuscous, tarsi pale-ringed. Fore wing subovate, dilated, broadest at $^4/_5$, costa curved towards extremities, little so in middle, apex obtuse, termen gently sinuate above, rounded below. Tawny-fuscous, suffused with dark fuscous towards base, beyond cell becoming paler fuscous-tawny, tinged golden; a few silvery-white scales scattered along and below fold. Cilia fuscous-bronze. Hind wing fuscous-white with strong golden gloss, cilia fuscous-bronze.

Ovipositor with pointed lobes. Ostium simple, not modified, two small bristly rounded lobes above ostium. Ductus bursae short, cestum a plicate thin sclerite at its base. Bursa copulatrix elongate-ovoid. Signa, an elongate patch of fine dentations. (Slide no. 1134 D, type.)

Iebèlè Camp, 2250 m, November 6, 1938. One specimen.

Anticrates Meyrick, 1905

Anticrates Meyrick, 1905, Journ. Bomb. Nat. Hist. Soc., vol. 16, p. 612. Proc. Linn. Soc. N.S. Wales, vol. 32, pp. 83—84, 1907. Journ. Bomb. Nat. Hist. Soc., vol. 23, p. 129, 1914. Lepid. Catal., part 19, p. 32, 1914. Fletcher, Catal. Ind. Ins., vol. 17, p. 20, 1928. Mem. Agric. Ind., Ent., vol. 11, p. 16, 1929.

Pyrozela Meyrick, 1906, Journ. Bomb. Nat. Hist. Soc., vol. 17, p. 414. Lepid. Catal., part 19, p. 32, 1914.

Key to the Papuan species of *Anticrates*

1. Yellow with crimson markings 2
   Crimson with yellow markings 3
2. Three transverse fasciae, not interconnected . . . . . *haematantha* Meyrick
   Four transverse fasciae, partially interconnected by longitudinal and oblique bars . . . . . *hygraema* Meyrick
3. Seventeen spots scattered all over wing . . . . . *magocosma* Meyrick
   Not thus 4
4. An oblique median transverse fascia, a fasciate spot in tornus, apical third yellow with red veins. . . . . *rutilella* Pagenstecher
   Not thus 5
5. Thorax crimson, a yellow round spot on shoulder . . . . . *argyroplintha chrysaema* subspec. nov.
   Thorax crimson, posterior half yellow . . . . . *argyroplintha* Meyrick

Anticrates argyroplintha Meyrick, 1938

Anticrates argyroplintha Meyrick, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 524.

Anticrates argyroplintha chrysaema subspec. nov.

χρυσός = gold, *αἷμα* = blood

♀ 16 mm. Head crimson, frons crimson mixed with yellow, face pale yellow edged pale crimson. Antenna yellowish, towards base mixed and banded with crimson. Palpus pale golden-yellow, basal segment and base of median slightly suffused with pink. Thorax deep crimson, patagium broadly edged posteriorly with bright yellow-golden, tegula pale yellow except shoulder, tip crimson. Legs pale yellow, anterior femur and tibia orange suffused with pink, anterior tarsus orange, median knee suffused with pink. Fore wing subtrapezoid-elongate, costa gently curved, apex obtuse, termen hardly sinuate, oblique, dorsum strongly rounded at base. Deep crimson suffused with fuscous-purple above fold and beyond cell, except towards costa and along edges of light markings; a deep crimson-orange streak along middle half of dorsum, not reaching fold, narrowed towards extremities, connected with a narrow yellow streak along anterior $^1/_4$ of dorsal edge from beyond base; markings brilliant light yellow: a small triangular spot on middle of base; a large elongate-triangular patch occupying middle third of costa, with somewhat rounded top reaching slightly below middle of wing, its posterior angle connected with a smaller oblique-subtriangular costal spot suffused with deep golden-yellow, reaching to apex, anterior edge almost vertical, posterior very oblique, limited below by course of vein 7; a transverse, inwardly oblique mark at $^1/_4$ from fold to above dorsum, extremities rounded and slightly dilated, posterior edge formed by raised scales; a round patch above dorsum slightly before middle, scales raised towards posterior edge; a broader erect-ovate outwardly oblique patch at $^4/_5$ of dorsum, with top not reaching middle of disc: brilliant light yellow, towards dorsal edge suffused with deep golden-yellow. Cilia light yellow, slightly suffused with orange towards base, a crimson bar above apex, a ferruginous-crimson patch in tornus and on lower fourth of termen. Hind wing pale orange, semipellucent, becoming light orange along margins. Cilia light orange.

Sigi Camp, 1500 m, February 24, 1939 (holotype). Mist Camp, 1800 m, January 12, 1938. Two specimens. Differs from the nominate form chiefly as follows: smaller; not evenly dark purplish; the yellow costal patch with lower edge notched beyond middle much deeper; the dorsal spots brilliant light yellow (instead of silver); terminal streak extended from the apex almost to the tornus, yellow (in the nominate form situated along the upper half of the termen, silvery). We owe this information to Mr. Bradley, who kindly compared a sketch of our type specimen with Meyrick's type of *argyroplintha* in the British Museum.

Lactura Walker, 1854

Lactura Walker, 1854, List Lep. Het. Brit. Mus., vol. 2, p. 485. Turner, Proc. Linn. Soc. N.S. Wales, vol. 28, p. 84, 1903. Meyrick, *ibidem*, vol. 32, p. 86, 1907.

DURRANT, B.O.U. & WOLL. Exp., Lep., p. 160, 1915. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 121, 1929.

Dianasa WALKER, 1854, List Lep. Het. Brit. Mus., vol. 2, p. 488.
Mieza WALKER, 1854, *ibidem*, pp. 527—528.
Sarbena WALKER, 1864, *ibidem*, vol. 31, p. 256 (*praeocc.*).
Themiscyra WALKER, 1864, *ibidem*, p. 258.
Cyptasia WALKER, 1866, *ibidem*, vol. 35, p. 1836.
Buxeta WALKER, 1866, *ibidem*, p. 1928.
Enaemia ZELLER, 1872, Verh. zool.-bot. Ges. Wien, vol. 22, p. 562.
Pseudotalara DRUCE, 1885, Biol. Centr.-Amer., Het., vol. 1, p. 126.
Pseudocaprima WALSINGHAM, 1900, Cat. Lep. Het. Mus. Oxon., vol. 2, p. 563.
Epidictica TURNER, 1903, Proc. Linn. Soc. N. S. Wales, vol. 28, p. 81.
Hedycharis TURNER, 1903 *ibidem*, p. 90.
Eriopyrrha MEYRICK, 1913, Exot. Microl., vol. 1, p. 141.

Tegumen moderate. Uncus with dilated base and a rather long subclavate blunt hook, bristly at the sides. Transtilla, a narrow simple rod, sometimes ill-defined or absent. Valva elongate-ovate, simple, dise towards base sometimes with an oval field of small round verrucae, representing the harpe. Vinculum elongate, ovate. Anellus with a variably shaped furca. Aedocagus huge, mostly moderately narrowed, little curved. Cornuti, minute denticulations, or absent.

Ovipositor broad, tortricoid. Ostium modified, variably shaped. Ductus bursae often long, coiled, sometimes a dentate cestum present. Signa ethmiid: four dentieulate plates.

Key to the Papuan species of *Lactura*

1. Longitudinal streaks between veins and along edges of cell mostly crimson or orange, sometimes forming a network upon yellow ground colour, often traversed by two oblique fasciae usually of darker colour, sometimes brachiato and forming a darker network upon above mentioned markings, sometimes much dilated so as to form two broad transverse patches or one central patch, obscuring crimson interneural network, which still remains distinct, at least along dorsum 24
   Markings not thus, mostly simple, sometimes streaks and irregular spots, scattered over the wing, but being pale upon darker ground colour, never distinctly interneural, neither forming a distinct crimson or orange network upon yellow ground 2
2. Dark brown with golden gloss; a yellow triangular spot in dise from beyond base to middle, traversed by a dark longitudinal streak above middle, erect top pointing towards base, lower angle above middle of dorsum . . . . . *aureocuprea* WALKER (Moluecas: Gilolo)
   Not thus 3
3. Dark purple with a single large transverse orange patch on middle of dorsum not reaching costa . . . . . *eurylyca* MEYRICK
   Not thus 4
4. Brownish-rosy, margins darker, a transverse yellow band from near base to middle, costal edge yellow from this to apex . . . . . *eurycrates* MEYRICK
   Not thus 5
5. Dull crimson, apical area from middle of costa to dorsum before tornus enclosing two crimson spots, and a light yellow streak along costa. . . *callipyra* MEYRICK
   Not thus 6

6. Reddish-orange, suffused yellow around apex and termen, a large elongate-ovate fuscous patch along $^3/_4$ of dorsum, convex posteriorly *eclipticopa* MEYRICK
Not thus 7
7. Dark brownish-fuscous or purplish-fuscous, a large transverse white patch or streak from dorsum not reaching costa, followed by a chestnut-brown, reddish-edged patch 8
Not thus 9
8. A broad, rounded, white patch; cilia in fore wing purplish-fuscous posterior $^2/_3$ opposite apex and middle of termen white . . . . . *albofimbriata* WALSINGHAM (Waigeu)
A broad white fascia; cilia purplish-fuscous, possibly only tipped white opposite apex . . . . . *callopisma* WALSINGHAM
9. Dark, with yellow markings, arranged marginal, sometimes an irregular marginal streak or band; if discal markings present then represented only by a single subdorsal spot, sometimes followed by a blackish-grey subplical dot 10
Light, with dark markings also discal or transverse 16
10. A wavy continuous marginal band from costa to tornus 11
Marginal band interrupted in several marginal patches and streaks . . 12
11. An elongate-oval light yellow spot above or on dorsum before middle . . . . . *coronopis* MEYRICK
No such spot . . . . . *platyorma* MEYRICK
12. A large yellow patch on lower part of termen and in tornus, broader than costal markings 13
No such spot, markings along lower half of termen and in tornus, if present, not broader than costal spots 15
13. A rounded spot above or on dorsum before middle 14
No such dot . . . . . *ophioglossa* MEYRICK
14. Patch in tornus and on lower half of termen rounded . *marsyas* MEYRICK
This patch semiovate, with irregular wavy edge . . . *coleoxantha* MEYRICK
15. Markings yellow: a costal streak from base to a flattened triangular spot before middle, a large similar spot beyond middle of costa and a terminal streak with crenulate edge . . . . . *oroglypta* MEYRICK
A streak along costal $^2/_5$, a small spot below $^3/_4$, a larger one before apex, three round dots along lower half of termen: yellow, interconnected by a suffused crimson marginal streak (possibly also a round yellow dot above middle of dorsum) . . . . . *acrantha* spec. nov.
16. Whitish with a suffused marginal crimson streak, discal markings fine, crimson and suffused pale ochreous, or pale ochreous-crimson. 17
Ground colour not whitish 18
17. A fine crimson streak along fold from near base to middle; no subcostal streak . . . . . *rhodographa* MEYRICK
A short crimson streak below costa from beyond base; no plical streak . . . . . *anaemoptila* spec. nov.
18. Crimson with two yellow transverse fasciae: first at $^1/_3$, direct, second at $^2/_3$, interrupted and rather broken in middle . . . . . *persicopa* MEYRICK
Not thus 19
19. Elongate-ovate spots or irregular spots and streaks scattered over the wing, sometimes a terminal fascia present 20
Markings less numerous, sparse in disc 22
20. An irregular white streak along anterior part of costa, an orange streak from $^3/_4$ of costa to $^3/_4$ of dorsum . . . . . *sanguiflua* MEYRICK
A meandering streak above dorsum to tornus and numerous irregular spots all over the wing 21

21. Fore wing deep reddish-brown; hind wing and abdomen deep orange . . . . . *ophiucha xanthodes* subspec. nov.
Fore wing pale pinkish-grey, irrorated with fuscous; hind wing and abdomen light ochreous-rosy . . . . . *ophiucha ophiucha* MEYRICK
22. Crimson-purplish, markings yellow . . . . . *coacervata* MEYRICK
Yellow-ochreous or orange-yellow, markings purplish- fuscous and ferruginous-orange or fuscous 23
23. Veins 7 and 8 in fore wing separate . . . . . *anthina* DURRANT
Veins 7 and 8 in fore wing stalked. . . . . *dicroa* DURRANT
24. Markings distinctly bicolorous: a pattern of interneural mostly red streaks more or less forming a network, traversed by two oblique transverse fasciae of darker colour, mostly purple, sometimes brachiate, interconnected, dilated to blotches or forming a dark network upon the first one, which still remains distinct, at least along dorsum 25
Markings distinctly unicolorous, mostly red, sometimes purplish, forming a network upon yellow or red ground (in that case sometimes yellow spots present); transverse fasciae, if present, concolorous or at most of darker red tinge [1]) 39
25. Purplish transverse fasciae rather slender, sometimes irregular but neither brachiate, nor interconnected by purplish colour, sometimes only thier bases slightly extended along dorsum 26
Purplish transverse fasciae more or less brachiate, interconnected in disc or forming a purplish network upon the red one, sometimes dilated to broad blotches and obscuring the latter. 27
26. First purplish transverse fascia with base extended antoriorly as a moderate marginal streak to bofore middle of dorsum; a small purplish spot at $^1/_3$ of wing breadth slightly beyond middle . . . . . *bisecta* spec. nov.
First purplish fascia with base not thus extended; no such purplish discal spot . . . . . *erythrodesma* MEYRICK
27. Purplish transverse fasciae not including light spots, (at most only with very narrow linear marks), strongly extended along their upper halves, second fascia forming a dark patch wich is distinctly *broader* than the remaining light terminal and apical spots of ground colour, or disc entirely purplish from baso to termen . 28
Purplish transverse fasciae not thus extended, if broad then retinate with series of light marks on veins, second fascia, if dilated along upper half, then not or hardly broader than the tornal area of ground colour 32
28. More than the median half of wing from base to termen occupied by a large purplish patch which is connected with base and middle of costa by two prominences and with dorsum by two broad transverse bars . . *pyrilampis* MEYRICK
Purplish transverse fasciae distinct, sometimes broadly interconnected in disc but not confluent so as to form a single discal patch 29
29. Ground colour deep red . . . . . *eurypercna* MEYRICK
Ground colour light or pale yellow 30
30. Transverse fasciae red, suffused with purplish-fuscous in disc, this colour extended posteriorly . . . . . *infervescens* MEYRICK
Transverse fasciae purple throughout 31
31. Second transverse purplish fascia dilated into a large patch connected by three broad purplish bars with costa before apex, termen and tornus, but not with dorsum. . . . . *floricoma* MEYRICK
Second transverse purplish fascia dilated into a transverse patch connected by three broad bars with costa before apex, termen and $^3/_4$ of dorsum, but not with tornus . . . . . *empedarthra* MEYRICK

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[1]) Only in *L. colabristis* MEYRICK interneural network reddish-orange, transverse fasciae bright crimson-red, cf. sub. 40.

32. Light markings bright red or crimson, at least in disc and on dorsum 33
Light markings reddish-fulvous, orange-red, orange or orange-fulvous, not bright red or crimson 37
33. Longitudinal dark connecting streak between transverse fasciae is continued beyond the second fascia towards tornus and sometimes reaches this 34
Connecting streak is terminated by the second transverse fascia and does not project beyond this 35
34. Connecting streak reaches tornus; a second narrow connection between transverse fasciae below costa . . . . . *captatrix* MEYRICK
Connecting streak does not reach tornus; the second connection only indicated by a short projection from the second fascia below costa *triexoda* MEYRICK
35. Connecting streak from the first fascia below fold to a fuscous-purple spot on middle of dorsum, confluent with second streak . . . . *rubriflora* MEYRICK
Connecting streak from the first fascia above its middle, to the second below its middle 36
36. Transverse fasciae broad, continuous, not angulate, containing small yellow dashes . . . . . *conflagrans* WALKER
Transverse fasciae irregular, the first tending to form 3—4 longitudinal streaks, the second narrow, strongly angulate . . . . . *britomartis* MEYRICK
37. Fore wing with veins 7 and 8 separate 38
Fore wing with veins 7 and 8 stalked . . . . . *aurosa* spec. nov.
38. Abdomen orange; hind wing orange . . . . . *autocosma* MEYRICK
Abdomen crimson; hind wing salmon-colour . . . . . *plectica* spec. nov.
39. Second transverse fascia distinct, tolerably straight, moderately dilated along upper half, with an angulate small posterior projection beyond upper angle of cell . . . . . *vulnerosa* spec. nov.
Second transverse fascia either distinctly angulate: on upper and lower angles of cell, or partially obliterate 40
40. Dorsal area between first and second transverse fasciae with a third transverse streak halfway between these, forming a network together with longitudinal subdorsal streaks 41
Dorsal area between first and second transverse fasciae without a transverse streak, only with one or two longitudinal streaks between the lower edge of cell and dorsum, the lower one of these streaks furcate posteriorly or strongly sinuate 42
41. Smaller species (23 mm); longitudinal streaks reddish-orange, other markings bright crimson-red . . . . . *colabristis* MEYRICK
Larger species (25—29 mm); all markings unicolorous red *teleogramma* MEYRICK
42. Pale yellow, markings orange-red . . . . . *heliantha* MEYRICK
Markings crimson 43
43. Subdorsal streak connecting transverse fasciae not interrupted, furcate posteriorly or prostrate-S-shaped 44
Subdorsal streak between transverse fasciae interrupted beyond first fascia, with the point curved upwards and backwards . . . *pyronympha* MEYRICK
44. Subdorsal streak furcate posteriorly; veins 7 and 8 separate *insecutrix* MEYRICK
Subdorsal streak prostrate-S-shaped; veins 7 and 8 stalked . . . . . *erythrodendron* spec. nov.

Lactura empedarthra MEYRICK, 1924

Lactura empedarthra MEYRICK, 1924, Exot. Microl., vol. 3, pp. 124—125.

Distribution: Netherlands New Guinea, Mount Goliath, 5000 feet: Weyland Mountains, 6000 feet. British New Guinea, Aroa River; Owgarra.

Sigi Camp, 1500 m, February 10—18, 1939. Mist Camp, 1800 m, February 10, 1939. Top Camp, 2100 m, December 18, 1938. Seven females, somewhat larger than MEYRICK's specimens: 38—40 mm instead of 28—34 mm; the markings are identical up to the slightest details, but the ground colour is somewhat brighter yellow.

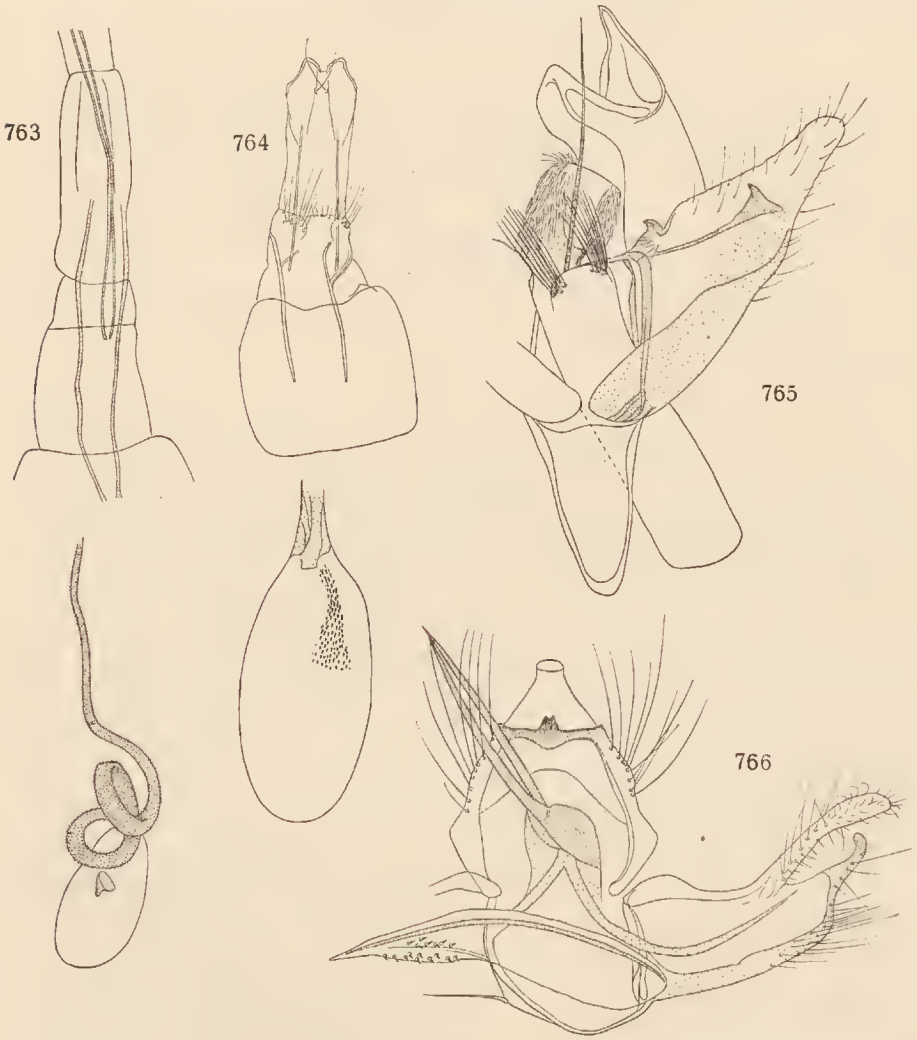
Lactura conflagrans (WALKER, 1864) (fig. 776)

Sarbena conflagrans WALKER, 1864, Catal. Lep. Het. B.M., vol. 31, pp. 256—257.
Buxeta conflagrans, WALKER, *ibidem*, vol. 35, p. 1982, 1866. HAMPSON, Catal. Lep. Phal. B.M., vol. 2, p. 567, 1900. DURRANT, Catal. Lep. Het. Mus. Oxon., vol. 2, p. 561, No. 3665, 1900.
Lactura conflagrans, MEYRICK, Lepid. Catal., part 19, p. 32, 1914. DURRANT, Brit. Ornit. Un. & Wollast. Exp., Lep., p. 160, 1915.

Distribution: "New Guinea". Netherlands New Guinea, Utakwa River, sea-level.

♀ 38 mm. Head orange, middle of vertex slightly mixed with pale yellow, face except middle and sides of vertex pale yellow, collar suffused with crimson. Antenna crimson-orange. Palpus orange-crimson, terminal segment and apex of median infuscated. Thorax orange-red, apical third ferruginous, spots pale yellow: a large transversely ovate spot on patagium, a rounded one on tegula, tuft on apex of the latter mixed with pale yellow laterally, two pairs of approximated lateral spots and a subquadrate apical spot. Abdomen orange-crimson, deep orange towards base. Anterior and median legs orange, femora pale yellow below, tibiae with an elongate supralateral pale yellow spot on middle and a brown suffused spot towards apex, basal segments of tarsi pale yellow laterally; posterior leg orange throughout, slightly suffused with light yellow. Fore wing with veins 7 and 8 closely approximated; elongate-subovate, little dilated, costa little curved at base and apex, gently prominent beyond middle, apex obtuse, termen rounded, oblique. Light yellow, markings formed by bright orange-red network and two transverse chestnut-brown fasciae. Edge of costa orange; a moderate basal patch orange-red, towards costa suffused with chestnut-brown, including a round dot of ground colour below base of costa and a yellow tuft in middle of base of wing; this patch is extended along basal fifth of costa, its edge strongly concave, on dorsum continued as an attenuated orange streak to tornus; a moderately broad chestnut transverse fascia from slightly beyond middle of costa occupying less than its median fifth, to $^1/_4$ of dorsum, but just not reaching margin, with undulate edges, upper third dilated, with a small longitudinal pale yellow mark below costa beyond middle and some groups of yellow scales below this; another chestnut-brown transverse fascia from costa before apex occupying space between terminations of veins 9 and 8, to $^2/_3$ of dorsum, in middle dilated and broader than the preceding fascia, its anterior edge less undulated, tolerably straight, its posterior edge concave from below

costa to above dorsum, base of fascia moderately produced along dorsum just above dorsal edge posteriorly, more so anteriorly; this fascia contains about seven pale yellow irregular narrow interneural marks not reaching edges and is connected with the preceding fascia by a slightly curved bar



Genitalia of Yponomeutidae. Fig. 763: *Docostoma insignis* spec. nov., female. Fig. 764: *Toxopeia demodes* spec. nov., female. Fig. 765: *Porphyrocrates aurostricta* spec. nov., male. Fig. 766: *Docostoma insignis* spec. nov., male.

from its middle to second fourth of the latter; a triangular prominence in its anterior edge just below this bar; a broad horizontal blotch along vein 6 connecting second transverse fascia with termen below apex. Orange-red markings arranged as follows: three longitudinal streaks forming connections between basal patch and first fascia: first streak from costal extremity of basal patch, second streak from above middle of that patch,

both converging on $^1/_3$ of the transverse fascia, second streak anastomosing in middle with third connecting streak which runs along fold and is triangularly dilated; connections between transverse fasciae: a rather broad streak along upper edge of cell with two acute projections along veins 10 and 9, respectively, first projection not reaching margin, second merging below costa in second fascia; a narrower streak along each upper and lower edges of median connecting bar; a streak along fold abruptly curved upward at $^2/_3$ of fold and connected with top of triangular prominence of second fascia; a sinuate, prostrate-Y-shaped streak, with the stalk from lower $^1/_4$ of first fascia, with the arms to second fascia above base and to middle of dorsum, respectively; upper arm also connected with the end of plical streak; rather broad, slightly dilated posteriorly and truncate interneural streaks not reaching margin: one towards apex, three towards lower half of termen. Cilia light orange, glossy, basal third deep orange, mixed with brownish opposite horizontal bar of second transverse fascia. Hind wing with 4 and 5 separate; orange-crimson, becoming deeper orange towards apex, pinkish and thinly scaled towards costa and base; cilia orange, a faint deep orange antemedian line.

Ostium surrounded by dense fine bristles, turned inside. Ductus bursae short, straight. Cestum, a sclerotized plate with two converging double ridges of small teeth. Signa two, each formed by two joint plates. (Slide no. 944 D.)

Hollandia, 8 m, July 17, 1938. One specimen. Dr. G. C. Varley, the Hope Professor, University Museum, Oxford, kindly sent the type specimen to us for study. The unique male specimen collected by Wallace himself has become slightly bleached in the course of years and has paler hind wings and abdomen than our female insect. The markings in the fore wing, however, are identical in all details.

Lactura floricoma Meyrick, 1923

Lactura floricoma Meyrick, 1923, Exot. Microl., vol. 3, pp. 123—124.

Distribution: Netherlands New Guinea: Snow Mountains, Utakwa River, 2000—3000 feet.

Our specimens may be redescribed as follows. ♂ 21—22 mm. Head pale yellow, a suffused pale band between bases of antennae and vertex posteriorly reddish-orange-red. Antenna rosy-fuscous, scape orange-red. Palpus reddish suffused with fuscous. Thorax orange-red, three pairs of pale yellow sublateral spots and an apical spot, the latter spot preceded by a curved broad fulvous band; patagia broad, pale yellow, narrowly edged with orange-red. Abdomen densely clothed with long rough hairs, reddish-orange. Pleurae and venter pale yellow. Legs reddish-orange, tibiae and tarsi pale yellow, anterior tibia and tarsus suffused anteriorly with fuscous-lilac, median and posterior tibia with a fuscous-lilac spot on

apical half anteriorly. Fore wing with veins 7 and 8 stalked; elongate-ovate, dilated, broadest at $^3/_4$, costa little curved anteriorly, more so along posterior fourth, apex rounded, termen rounded, little oblique. Semipellucent: covered with pellucent scales with narrow blackish tips, markings formed by not pellucent pale yellow spots marked with orange-red and brown, veins, except on markings, marked with fulvous-fuscous stripes. A broad pale yellow patch along costa from base to $^3/_4$, reaching below upper edge of cell, with a triangular projection on closing vein, reaching to middle of that vein, beyond this narrowed, terminated by the upper half of vein 10, posterior extremity pointed; a broad dorsal pale yellow patch on base connected with the preceding, somewhat beyond middle dilated into a trapezoid projection with top terminated by posterior half of lower edge of cell, posterior edge oblique, terminated by fold; two rather large pale yellow spots: in apex, rounded, and on $^2/_3$ of termen, subquadrate, with anterior edge indent. Other markings as follows: an elongate-subrectangular patch occupying more than basal sixth of costa, lower posterior angle produced in a suffused longitudinal streak which is connected with middle of transverse fascia: orange red, on costa suffused with fulvous-fuscous, including a small yellow dot below costa beyond base; an oblique moderate transverse fascia from slightly before middle of costa to $^1/_4$ of dorsum, fulvous-fuscous, slightly suffusedly edged with orange-red, interrupted between costal and dorsal yellow patches by pellucent ground colour, lower edge of cell with a fulvous-fuscous streak corresponding with the width of the transverse fascia; a semicircular moderate orange-red streak above dorsum curved upwards, from lower fourth of transverse fascia to fold at middle of wing length, closed above by a streak of semipellucent orange scales along fold; a semicircular transverse orange-red streak from lower edge of cell before angle along basal part of vein 2 to $^3/_4$ of dorsum, dilated below, with a dark fuscous streak along dorsal edge; a rather narrow orange-red marginal streak along basal third of dorsum, abruptly narrowed thence, hardly reaching preceding; a suffused fuscous marginal fascia along the semipellucent area, becoming orange-red along apical and terminal yellow spots, narrow along the latter spots. Cilia (imperfect) glossy orange-bronze, opposite apical and terminal spots pale yellow except base. Hind wing semipellucent, bluish, thickly covered with orange scales becoming deep orange on posterior half, veins orange, deep orange along posterior half. Cilia shining golden-orange.

Araucaria Camp, 800 m, March 10, 1939. Two males. Meyrick, in his description of this species, does not mention the obvious fact that the purplish markings in fore wing of this species are semipellucent.

Lactura aurosa spec. nov. (figs. 770, 771)

♂ 30—33 mm. Head pale yellow, vertex and frons deep golden-ochreous. Antenna fulvous. Palpus deep reddish-ferruginous. Thorax deep fer-

ruginous, with five pale yellow spots, patagium pale yellow, broadly edged with ferruginous, tegula with the apical half golden-ochreous. Abdomen light orange, clothed with long, dense hairs. Legs orange-fulvous, under side of anterior and median femur, a median spot on tibia above (small on anterior tibia) and another such spot on base of tarsus above pale yellow; anterior tibia suffused with dark brown; posterior leg ochreous-orange, tarsus orange-fulvous. Fore wing with veins 7 and 8 stalked; elongate-ovate, dilated, broadest at $^2/_3$, costa slightly curved at base, straight anteriorly, moderately curved along posterior $^1/_3$, apex obtuse, termen moderately rounded, oblique. Pale yellow, markings deep ochreous, moderately irrorated with fulvous and ferruginous-brown, becoming suffused with fulvous towards costal edge; edge of costa reddish-ferruginous, extended along posterior $^2/_5$ as a narrow orange-fulvous costal streak; ferruginous-brown markings as follows: an elongate patch on basal fourth of costa, acutely narrowed posteriorly, including a small round spot of ground colour below base of costa, its lower edge with an angulate projection below this spot just beyond middle of base; an irregular subtrapezoid large patch on costa occupying less than its median fifth, including three elongate irregular spots of ground colour posteriorly, arranged in a vertical series; lower edge of this patch running just above and parallel to lower edge of cell, anterior edge excavate below costa, rounded and projecting anteriorly in cell; a moderate irregular transverse fascia with undulate edges, from anterior lower angle of patch to before $^1/_4$ of dorsum, dilated along dorsum anteriorly but not reaching base; posterior edge of costal patch irregular, almost vertical, with two deep indentations on its upper half; a semicircular irregular moderate fascia from posterior angle of that patch across lower angle of cell to $^3/_5$ of dorsum, dilated and slightly produced anteriorly along dorsum; these markings connected with basal patch by an irregular longitudinal streak above cell which is furcate anteriorly, anastomosing with a single irregular longitudinal streak below cell, arising from the projection of lower edge of basal patch and is connate there with a third longitudinal streak running to lower fourth of first transverse fascia; a slender prostrate Y-shaped reddish-brown mark above dorsum, connecting transverse fasciae; a broad oblique transverse band from upper half of posterior semi-circular transverse fascia, consisting of some five irregular, rather broad, interneural streaks; these streaks originating from lower half of transverse vein, diverging, their posterior extremities connected by a narrow subterminal transverse fascia which is convex above, straight below; upper interneural streak reaches costa at about $^1/_7$ and is produced along costa anteriorly as a moderate marginal patch; acute narrow (sometimes broad, triangular) terminal marks on veins reaching halfway towards subterminal fascia, their bases abruptly dilated. Ochreous markings arranged thus: a broad streak along median third of fold, broadly edged above and below with reddish-fulvous, originating from first transverse fascia, posterior extremity

connected above by brown projection with trapezoid patch, below with upper arm of Y-shaped mark and with lower extremity of second transverse fascia; some yellowish suffusion along streaks between basal patch and fascia; upper edge of cell posteriorly with a narrow reddish streak from which originate two broad ochreous interneural streaks; second of these narrowed, reaching preapical costal patch; five rather broad, deep ochreous, slightly suffused reddish interneural streaks between veins 8—3, not reaching termen, upper streak from subterminal fascia, two following from end of cell, two lower streaks from well beyond this; apices and bases of these streaks more or less irrorated with dark brown, their irrorated bases together forming oblique transverse above mentioned band; an orange-ochreous streak along dorsum from base to $^3/_5$. Cilia orange, basal third deep fulvous. Hind wing with 4 and 5 separate; ochreous-orange, glossy, thinly scaled towards base, cilia concolorous.

Uncus moderate. Valva with a verrucose field at base of disc. Vinculum short, pointed. "Anellus lobes" strong, acutely pointed, curved. Aedoeagus moderate. (Slide no. 927 D, holotype.)

♀ 46 mm. Head with vertex suffused with ferruginous-red. Tegula ferruginous-red. Fore wing with ferruginous-brown markings broader and more extended than in the male, interneural streaks beyond cell thicker and entirely suffused with fulvous and ferruginous-brown; posterior $^2/_3$ of cilia deeper orange. Hind wing tinged salmon colour; cilia deeper orange.

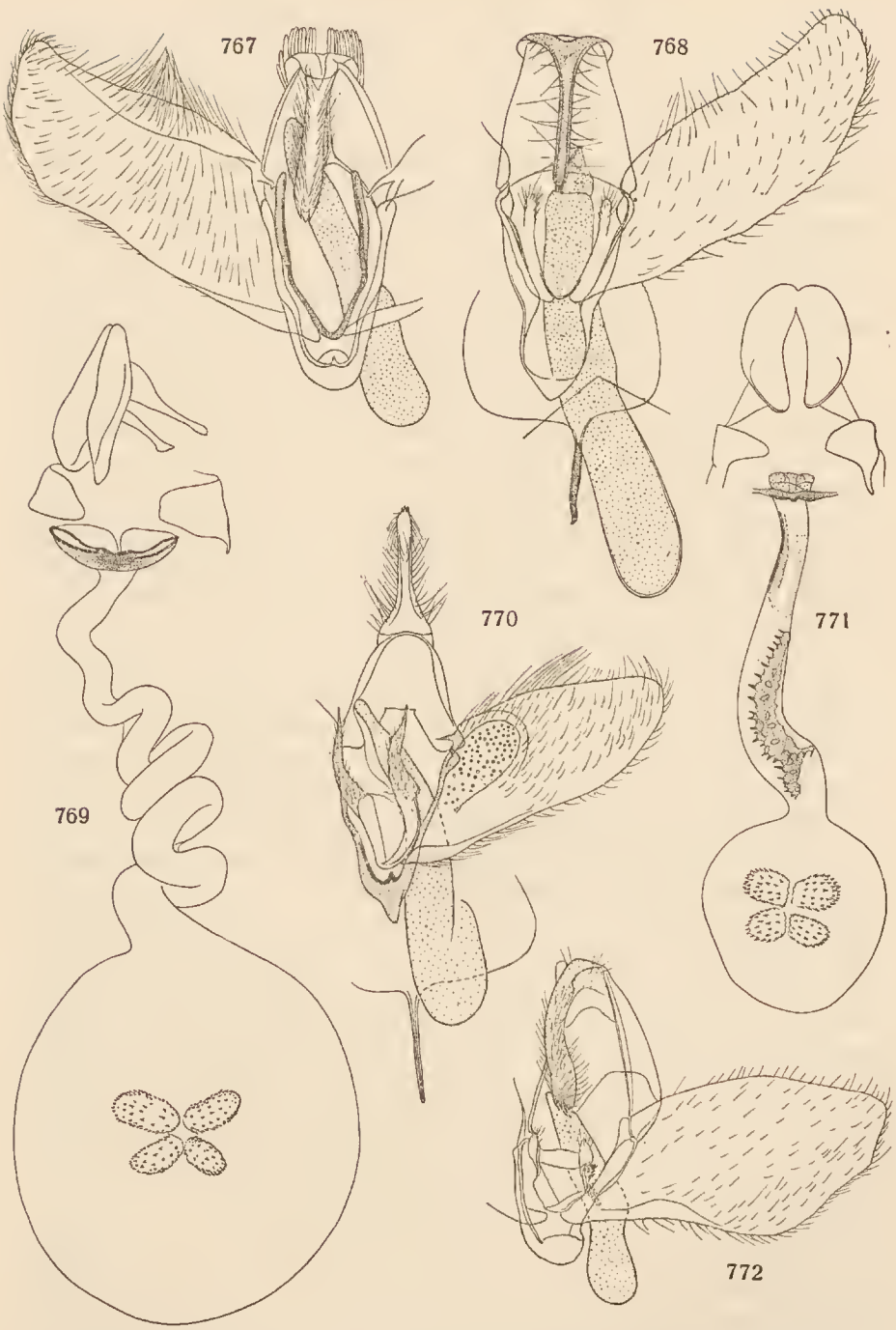
Ostium, a small cup. Limen, a transverse ridge. Ductus bursae moderate. Cestum developed, a simple moderate band above and a spinose, perforated, irregular body below. Signa, four broadly ovate plates. (Slide no. 928 D, allotype.)

Mist Camp, 1800 m, December 23, 1938 (holotype, male). December 27, 1938—January 18, 1939. January 11, 1939 (allotype, female). Top Camp, 2100 m, January, 1939. Seven males, one female.

Lactura erythrodendron spec. nov. (fig. 775)

ἐρυθρός = red, *δένδρον* = tree

♂ 24 mm. Head yellow, vertex orange-crimson with a pair of large yellow lateral spots, orbits yellow. Palpus crimson, lower edge of basal and median segments yellow. Thorax orange-crimson with a pair of sublateral, two pairs of lateral and one apical yellow spots, patagium yellow with apex and a small dot on anterior edge orange-crimson. Abdomen woolly, deep orange, anal tuft paler, venter yellow. Legs yellow, femora above orange-crimson, anterior tibia and tarsus with a narrow longitudinal submedian crimson streak dilated on apex of tibia so as to form a transverse band, apical half of tarsus crimson; median tibia with a moderate apical, tarsus with a broad subapical orange-crimson band; posterior leg more or less suffused with orange above. Fore wing with veins 7 and 8 stalked; elongate-subovate, costa moderately curved towards extremities, less so in



Genitalia of *Lactura* WALKER. Fig. 767: *plectica* spec. nov., male. Fig. 768: *bisecta* spec. nov., male. Fig. 769: *plectica* spec. nov., female. Fig. 770: *aurosa* spec. nov., male. Fig. 771: *idem*, female. Fig. 772: *acrantha* spec. nov., male.

middle, apex obtuse, termen rounded, rather oblique, dorsum sinuate. Yellow, cell and interneural spaces towards cell partially semipellucent. Costal edge crimson. A moderate basal patch, enclosing an oval spot below base and a round one above and before base of dorsum; anterior edge of patch concave, produced along $^1/_5$ of costa and emitting three longitudinal streaks: first of these subcostal, short, dilated and suffused posteriorly, second streak along upper edge of cell, thick abruptly narrowed beyond its middle to a deep crimson line, third streak narrow, along lower edge of cell; second and third streaks merge into a moderate deep crimson transverse fascia from middle of costa to beyond $^1/_4$ of dorsum, with a few yellow scales below costa; this transverse fascia narrowly interrupted in cell, broadly so below cell by semipellucent areas, base dilated on dorsum posterior edge irregular; a rather narrow streak along upper and posterior edges of cell: pale crimson, mixed with deep crimson, on closing vein becoming deep crimson throughout and ending with a longitudinal small deep crimson patch on lower angle of cell; a deep crimson transverse fascia from middle of the preceding patch running along basal half of vein 2, strongly angulate there, to $^3/_4$ of dorsum, base produced anteriorly along dorsum; a longitudinal streak from lower fourth of transverse fascia to preceding streak twice strongly sinuate above dorsum: deep crimson, its first sinuation dilated downward to an oval lighter crimson patch; a pale crimson semipellucent streak originating from transverse fascia and making a long loop in cell, connected by a branch from its middle with lower edge of cell; two semipellucent pale crimson streaks: above and below fold, from transverse fascia to about middle of wing, upper ending in lower edge of cell, lower somewhat shorter, to second sinuation of streak; pale crimson semipellucent narrow streaks between veins originating from cell and by far not reaching termen, lower one (above vein 2) broadest and deeper crimson; a series of elongate irregular deep crimson spots on veins, forming a transverse fascia halfway between cell and termen, strongly angulate on vein 6, slightly so on vein 8; deep crimson, narrow streaks on terminations of veins, towards tornus becoming connected with interneural streaks; apical fifth of costa with a narrow marginal light crimson line. Cilia yellow, suffused with orange towards tornus, basal third bright orange-crimson throughout. Hind wing with veins 4 and 5 separate; thinly scaled, especially towards costa, in cell and towards dorsum: light crimson orange, cilia concolorous, glossy.

Uncus moderate. Valva with a field of strong verrucae at base of disc. Vinculum moderate, subtriangular. Arms of furca (anellus lobes) acutely pointed, little curved, shorter than in *aurosa*. Aedoeagus straight, little dilated at base. Cornuti, a sheaf of fine spines and a subapical ring of denticulations. (Slide no. 931 D, type.)

Rattan Camp, 1200 m, February 19, 1939. One specimen. Nearest to *L. collabristis* Meyrick.

Lactura pyronympha MEYRICK, 1924

Lactura pyronympha MEYRICK, 1924, Exot. Microl., vol. 3, p. 127.

Distribution: Netherlands New Guinea, Weyland Mountains, 6000 feet.

There are slight discrepancies between MEYRICK's description of this species and its type which we studied in the British Museum, especially as to the markings along the anterior part of the costa and on the base of the fore wing. Our specimen agrees in all details with a sketch drawn by us of the type specimen, but does not quite fit in MEYRICK's description. Therefore we give a redescription of our specimen, the identification of which is, in our opinion, doubtlessly correct.

♂ 31 mm. Head yellow, vertex, except at the sides, orange-red. Palpus and antenna deep orange-red. Thorax (rubbed) orange-red with five yellow spots, patagium and tegula yellow, edged with orange-red. Abdomen deep orange-crimson. Legs yellow, above and towards apex of tibia and tarsus suffused with orange-red. Fore wing with veins 7 and 8 separate; elongate-subovate, costa moderately curved at base and before apex, straight in middle, apex obtuse, termen little rounded, oblique. Yellow, markings bright orange-red. Anterior half of costal edge narrowly orange-red; a moderate basal patch containing an elongate yellow blotch below base of costa, anterior edge of patch strongly concave, irregular emitting five longitudinal streaks: upper two attenuated, rather irregular, almost or completely interrupted at $^1/_3$, converging, and merging in transverse fascia; third longitudinal streak median, very narrow, extended to an elongate-rectangular spot halfway towards transverse fascia and connected with preceding by a broad transverse bar beyond this spot; fourth one moderate, below fold; fifth streak marginal, attenuated along basal fourth of dorsum; a rather narrow transverse fascia from just below middle of costa to before $^1/_4$ of dorsum, rather abruptly dilated and forming an acute dentiform projection above dorsum posteriorly; this fascia is obliquely cut by a narrow line of ground colour above cell and connected posteriorly with a moderate, rather irregular streak along edges of cell which streak is almost interrupted on bases of veins 4—6 and is connected with an elongate spot below $^2/_3$ of costa, acute posteriorly; narrow, rather irregular streaks originating from preceding streak, not reaching termen and arranged as follows: a broad, dilated streak along basal half of vein 8, thence furcate, so as to form two interneural streaks, and with a broad inwardly oblique transverse blotch towards termination of vein 10 below costa, connected with apex of a narrow streak from cell below vein 10; two narrow streaks above and below vein 6, respectively, interconnected by a large transverse spot before tornus, irregularly connected with terminal edge along vein 6; two broader streaks, above, and below vein 4, respectively, narrowed or interrupted at base; a broad irregular streak along vein 2, to termen, including a spot of ground colour before edge of

wing, emitting a thick branch from middle anteriorly to termination of dorsal streak; a long loop in posterior half of cell, another along fold somewhat before preceding, both not quite closed posteriorly; a strong prostrate-S-shaped streak above dorsum, connected above with the loop on fold and posteriorly with the transverse branch from middle of vein 2; an irregular terminal rather narrow streak reaching from termination of vein 10 to tornus, with small projections on veins 4 and 5. Cilia (imperfect) yellow, basal half orange-crimson. Hind wing with 4 and 5 stalked; semi-pellucent, thinly scaled towards base: light golden-orange; cilia concolorous.

Araucaria Camp, 800 m, March 11, 1939. One specimen.

Lactura aureocuprea (Walker, 1886) (fig. 774)

Lithosia aureocuprea Walker, 1866, List Lep. Heter. Brit. Mus., vol. 35, p. 1885.

Eutane aureocuprea, Swinhoe, Catal. East. and Austral. Lep. Heter. Oxf. Mus., vol. 1, p. 126, No. 581, pl. 3, fig. 21, 1892.

Buxeta aureocuprea, Durrant, Catal. Lep. Heter. Mus. Oxon., vol. 2, pp. 561 — 562, No. 3666, 1900.

Lactura aureocuprea, Meyrick, Lepid. Catal., fasc. 19, p. 32, 1914.

Distribution: Moluccas, Gilolo.

Dr. G. C. Varley, the Hope Professor, Dept. of Entomology, University Museum, Oxford, England, kindly sent us the precious Walker's type specimen collected in the Moluccas by A. R. Wallace himself which is still unique. We take the opportunity to redescribe this specimen.

♂ 28 mm. Head dark brown, face and two large spots on vertex deep orange-ochreous. Antenna dark brown, scape orange-ochreous below. Palpus orange-ochreous, median segment except base dark brown, terminal segment brownish-lilac. Thorax dark brown, a broad orange-ochreous U-shaped mark edging apex and reaching $^3/_4$ the length of thorax, patagia brightly ochreous-orange, along median edge and towards this edge anteriorly moderately suffused with dark brown. Abdomen dark greyish-brown, two basal segments densely haired, fuscous-grey, venter and valva light pinkish-ochreous, a brush at each side of genital segment, orange. Legs and pectus ochreous-orange, anterior and median tibia and tarsus dark fuscous above, articulations of tarsi pale greyish. Fore wing with veins 7 and 8 separate; elongate-subovate, dilated, broadest at $^3/_4$, costa shortly curved at base, very faintly concave anteriorly, curved posteriorly, moderately prominent at $^3/_4$, apex rounded, termen rounded, moderately oblique. Dark brown with faint coppery or purplish gloss on posterior half of wing. Markings bright orange-yellow, somewhat paler than those of thorax. An ovate spot occupying lower half of extreme base; a large, elongate-subtriangular patch beginning with a broad streak along fold from beyond base to $^1/_3$ of wing, thence triangularly dilated below, its

obtuse lower extremity not reaching $^3/_4$ of dorsum, its posterior edge hardly outwards-oblique and faintly convex; upper edge of this patch tolerably parallel to lower edge of cell, moderately concave in middle; a slender longitudinal cuspidate spot in cell not reaching its edges, with acute point at $^1/_3$ of wing length, somewhat irregularly truncate, posterior extremity situated slightly before middle of wing. Cilia bronze-greyish-fuscous, glossy. Hind wing rather sparsely scaled, veins 4 and 5 connate, brown; a broad pinkish-white costal streak to about $^5/_6$, with edges tinged crimson, narrowed towards base and more so towards point, in middle somewhat less than $^1/_3$ of wing breadth; an ill-defined narrow streak of orange irroration along fold between veins 1b and 1c. Cilia as in fore wing.

Uncus rather stout, top with some three small teeth. Valva with large verrucose field at base of disc. Vinculum small. Furca arms strong, truncate. Aedoeagus moderately curved. Cornuti absent. (Slide no. 933 D, type, in Hope Museum, Oxford, England.)

Type specimen, bearing the following series of labels: "3684, WALM. 1899".—"Wallace"—"581"—(a blue label inscribed on under side as follows:) "A WALKER's type of Lithosia aureocuprea 35. 1885"—"Lithosia aureocuprea" (presumably in WALKER's hand)—"Buxeta aureocuprea WALKER. Named by DURRANT".—"Lithosia aureocuprea WALKER Cat. Lep. Ins. B.M. XXXV. 1885 (1866), type ♂ (♀ WALKER)" (presumably in DURRANT's hand).

Lactura plectica spec. nov. (figs. 767, 769)

πλεκτικός = plaiting

♂ 35—39 mm, ♀ 44—45 mm. Head, palpus and antenna deep ferruginous-red, side-tufts and face except frons pale whitish-yellow. Thorax coarsely retinated with deep ferruginous-red, so as to form three pairs of lateral and one apical pale whitish-yellow spots, patagia pale whitish-yellow edged with deep ferruginous-red. Abdomen deep crimson-orange. Legs lighter crimson-orange or crimson, ventral surface of all femora and basal half of tibiae and tarsi above pale yellow. Fore wing with veins 7 and 8 separate; elongate-subovate, costa gently curved throughout, apex rather obtuse, termen little rounded, moderately oblique. Pale whitish-yellow. Costal edge deep ferruginous-red, along basal fifth forming a moderate costal streak dilated anteriorly, connected well beyond base by a blotch with a moderate, irregular subcostal streak parallel to costa, from before middle of base of wing to before $^1/_5$ of costa, its lower extremity narrowly connected with base of wing; a second similar streak beyond preceding and parallel with its posterior half, anastomosing with former at its lower third and before apex, its upper extremity extended as a narrow deep ferruginous-brown streak parallel to vein 11 as far as $^2/_5$ of wing; a rather short irregular deep ferruginous longitudinal streak below costa somewhat before middle; in female this streak is extended in a triangular costal

spot connected below with the preceding streak; a somewhat sinuate rather slender deep ferruginous-brown transverse fascia from below middle of costa to before $^1/_3$ of dorsum, moderately dilated from below upper edge of cell, a blunt projection anteriorly in middle of disc, broadly anastomosing with the preceding streak, two narrow longitudinal streaks connecting lower fourth of transverse fascia with base of wing; a ferruginous-brown fascia from upper third of preceding to dorsum before tornus, with base deeply indent posteriorly above margin of wing, abruptly dilated and darker brown along its central third, sending a deep ferruginous-brown branch from $^2/_3$ of its anterior edge to $^2/_3$ of dorsum; this branch twice moderately angulate (zigzag) above dorsum; a reddish-fulvous streak along edge of cell from terminal fascia, becoming ferruginous-brown along closing vein, merging in preceding fascia above its middle; a slender horizontal streak above middle of cell from first transverse fascia not reaching end of cell, deep ferruginous-brown, posterior half light fulvous: in female double, almost forming a long, narrow loop; a moderate longitudinal fulvous streak connecting transverse fasciae above fold; a prostrate-furcate ferruginous-red longitudinal mark above dorsum, its stem connected with the first transverse fascia above its base, its arms almost reaching dark branch which terminates at $^2/_3$ of dorsum; a suffused slender longitudinal streak between fold and the preceding; a rather narrow deep ferruginous-brown angulate subterminal fascia halfway between cell and margin, upper half broader, outwardly convex, lower concave running from below middle of vein 10 to second transverse fascia halfway between cell and dorsum; irregular narrow streaks of fulvous irroration between veins, originating from cell, by far not reaching margin; narrow deep ferruginous-red streaks along posterior extremities of all veins, reaching halfway towards subterminal fascia, moderately dilated towards margin of wing; a rather narrow suffused dark ferruginous-brown marginal streak from costa before apex to tornus, thence much narrowed, suffused with fulvous, running along dorsum to base. Cilia bright fulvous, basal half deep ferruginous-red; cilia opposite apex and termen mixed with a few pale yellow scales. Hind wing with veins 4 and 5 separate or short-stalked; salmon-orange, thinly scaled except along margin, where this colour is deeper. Cilia concolorous, base darker.

Uncus rather long and stout, clavate, top with three small teeth. Valva simple. Vinculum rather short, subtruncate. Anellus lobes strong, long, rather slender. Aedoeagus narrowed. (Slide no. 929 D, holotype.)

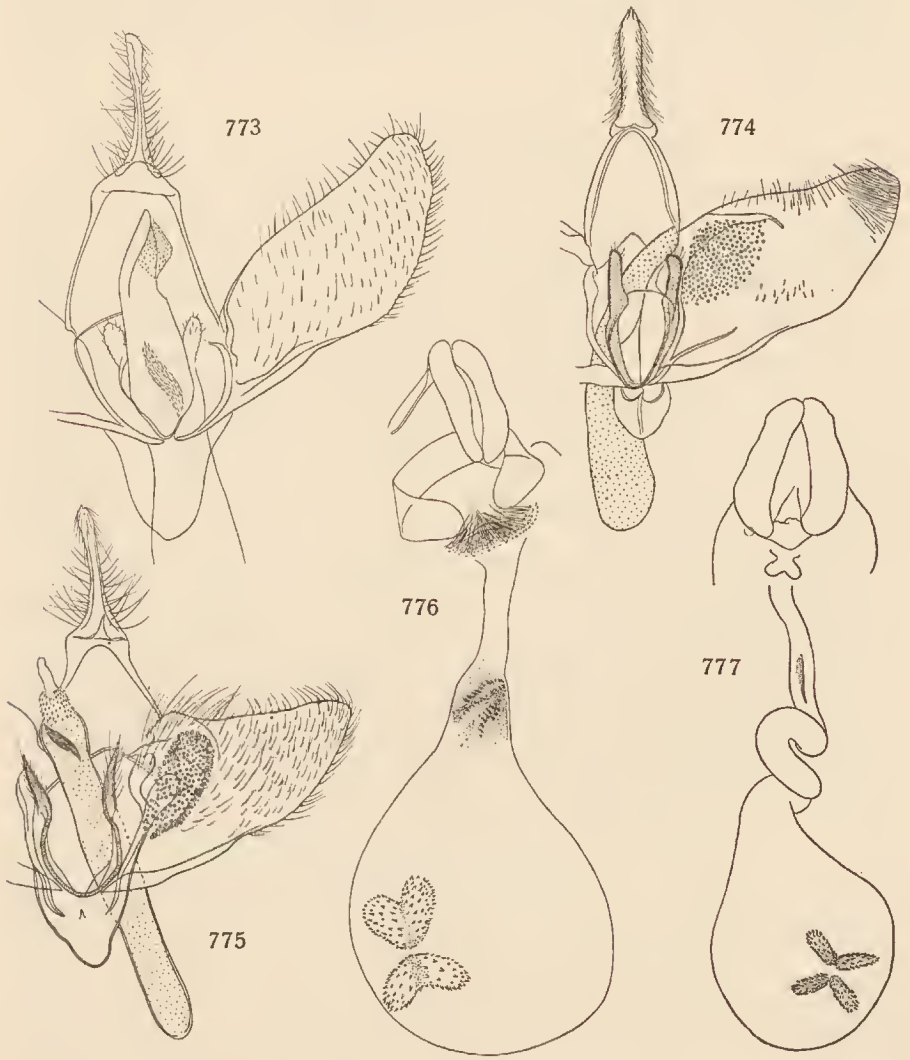
Ostium, a larger flattened cup, with a double ventral rim, being the limen. Ductus bursae very long, coiled. Signa, four oval plates. (Slide no. 930 D, allotype.)

Mist Camp, 1400—1800 m, January 8, 1939 (holotype, male), Sigi Camp, 1500 m, February 18, 1939 (allotype, female), February 22—25, 1939. Top Camp, 2100 m, February 18, 1939. Twelve males, four females. Very near to *L. triexoda* MEYRICK and *L. captatrix* MEYRICK.

Lactura ophiucha Meyrick, 1924

Lactura ophiucha Meyrick, 1924, Exot. Microl., vol. 3, p. 123.

Distribution: British New Guinea, Biagi, Mambare River, 5000 feet.



Genitalia of *Lactura* Walker. Fig. 773: *anaemoptila* spec. nov., male. Fig. 774: *aureocuprea* Walker, male, type (in the Hope Museum, Oxford, England). Fig. 775: *erythrodendron* spec. nov., male. Fig. 776: *conflagrans* Walker, female. Fig. 777: *vulnerosa* spec. nov., female.

Lactura ophiucha xanthodes subspec. nov.

ξανθοδές = yellowish

♀ 45—49 mm. Head pale yellow, face black, collar pale yellow. Palpus blackish mixed above with crimson. Abdomen deep rosy-crimson. Crimson, densely irrorated and suffused throughout with blackish-fuscous; ochreous-

white markings somewhat more extended. Cilia ochreous-white, posterior half crimson-orange. Hind wing deep orange-salmon, veins slightly darker, cilia concolorous, becoming paler towards tips. Otherwise as the typical form.

Mist Camp, 1800 m, January 23, 1939 (holotype, with head missing). Top Camp, 2100 m, January 22, 1939 (paratype, a faded specimen, head described above).

Lactura vulnerosa spec. nov. (fig. 777)

♀ 20 mm. Head pale yellow, vertex orange-fulvous, collar pale yellow. Palpus and antenna orange-fulvous. Thorax orange-fulvous anteriorly (rubbed posteriorly). Abdomen deep ochreous. Legs yellow, above and towards bases of tibiae suffused with orange-fulvous. Fore wing with veins 7 and 8 separate; elongate-ovate, costa slightly curved, less so in middle, apex rounded, termen rounded, oblique. Light yellow, markings orange-fulvous. Costa with a narrow orange streak throughout, moderately dilated along posterior half, narrowed again in apex and continued to tornus; a moderate patch on base of costa, extended as a subbasal transverse streak to dorsum and continued along this to $^1/_5$; a narrow line from basal patch below and parallel to vein 12, merging in transverse fascia; indication of a broad median outwardly oblique connection with transverse fascia, and possibly a submedian one (dorsum rather rubbed); a moderate transverse fascia from middle of costa to $^1/_4$ of dorsum: deep orange-fulvous, dilated on fold; a second deep orange-fulvous fascia from costa before apex (between veins 8 and 9) to $^2/_3$ of dorsum: rather irregular, with a subtriangular projection at upper fourth posteriorly, moderately narrowed along median third, somewhat dilated again and shortly extended on dorsum, with an irregular projection above dorsum from its anterior extremity; first and second transverse fasciae interconnected by three longitudinal streaks: first of these rather narrow, along upper edge of cell, with a longitudinal spot on middle above not reaching costa; second longitudinal streak along lower edge of cell, extended in cell, so as to form an arrow-shaped patch with apex resting on the first fascia, its upper posterior angle not reaching closing vein; third streak below fold, rather broad, irregular, irrorated posteriorly and connected with vertical projection of the base of the second transverse fascia; an indication of an outwardly oblique streak from middle of preceding to middle of dorsum. Hind wing with veins 4 and 5 separate; semipellucent, very thinly scaled except its apical fifth, and a diffuse marginal streak, deep orange with golden gloss, cilia concolorous (imperfect).

Ostium simple, invert-cordiform. Ductus bursae moderate, coiled almost twice. Cestum, a small narrow band above coils. Signa, four narrowly oval plates. (Slide no. 925, type.)

Bernhard Camp B, 100 m, February 11, 1939. One specimen, with basal half of dorsum rather rubbed, markings not distinct.

Lactura bisecta spec. nov. (fig. 768)

♂ 21 mm. Head pale yellow, vertex and frons except side tufts orange, touched with crimson. Palpus and antenna orange-crimson. Thorax deep crimson, a pair of lateral subapical spots and an apical spot pale yellow, patagium and tegula orange-crimson, with two and one pale yellow spots, respectively. Abdomen light ochreous-brownish becoming orange-ochreous posteriorly. Legs light crimson, femur and tibia below, and a streak along basal segment except apex above pale yellow. Fore wing with veins 7 and 8 separate; elongate-ovate, broadest in middle, costa moderately curved throughout, apex rather obtuse, termen moderately rounded, oblique. Pale yellow. Bright orange-crimson thick longitudinal streaks between veins, not reaching margins, a streak along basal fifth of costa, a streak along basal half of upper edge of cell and a broad streak along dorsum from base to before tornus; costal edge narrowly crimson, a deep crimson line along posterior seventh of fold, continued as a narrow marginal fascia of the same colour in tornus and along termen to $^4/_5$ of costa; two rather narrow inwardly oblique deep lilac-brown transverse fasciae: first from beyond $^1/_4$ of dorsum pointing towards costa before middle, straight, reaching $^3/_4$ across wing, somewhat dilated on dorsum, gradually attenuated towards its apex which is acute; second streak from below middle of vein 8 to beyond $^3/_4$ of dorsum, slightly outwards-concave, abruptly and moderately dilated below apex, base continued anteriorly along dorsum to before its middle by two parallel deep lilac-brown streaks, upper somewhat longer, lower marginal, separated from each other by a narrow streak of ground colour; a deep lilac-brown rounded dot halfway between transverse fasciae at $^1/_3$ of wing breadth. Cilia (imperfect) yellow mixed with orange, basal half crimson. Hind wing with veins 4 and 5 connate; pale golden-orange, thinly scaled and semipellucent; cilia somewhat paler, with a faint antemedian line.

Uncus long, slender. Valva simple. Vinculum elongate. Anellus lobes rather short, with rounded top. Aedoeagus very long. (Slide no. 924 D, type.)

Rattan Camp, 1200 m, February 18, 1939. One specimen. Very near to *L. rubriflora* MEYRICK, from Australia, but with bases of transverse fasciae not connected along dorsum.

Lactura anaemoptila spec. nov. (fig. 773)

ἀνάιμος = bloodless, *πτίλον* = wing

♂ 27 mm. Head sordid yellowish-white tinged pink, vertex posteriorly suffused with pink. Antenna brownish, pale pink above. Palpus light pink, mixed with a few fuscous scales. Thorax sordid yellowish-white, edged with pink anteriorly. Abdomen light yellowish-pink. Legs whitish-pink, brighter pink above. Fore wing with veins 7 and 8 stalked; elongate-ovate,

costa gradually curved, apex broadly rounded, termen oblique. White, faintly suffused with very pale ochreous on base and along dorsum; costa and dorsum narrowly and suffusedly edged with deep pink; a moderate, suffused, deep pink longitudinal streak between vein 12 and cell from beyond base to $^1/_4$ of wing; other markings strongly suffused, pale ochreous-pink, becoming somewhat brighter in disc and towards termen: three elongate-subquadrate ill-defined patches, occupying about basal sixth, third and fifth sixth of costa, respectively, hardly reaching cell; an arrowhead-shaped longitudinal somewhat brighter pink patch in middle of cell, point basad; a series of four pairs of ill-defined longitudinal spots along fold from about $^1/_5$ of wing to dorsum, each pair formed by a spot above and one opposite this beneath fold; upper one of third pair largest, extended obliquely over lower angle of cell and merging in a large rounded blotch beyond cell, which reaches above to vein 10 and is connected with third costal patch; a subterminal row of elongate brighter pink spots between veins, from below vein 8 to below vein 2. Cilia whitish-pink, basal half light pink. Hind wing with 4 and 5 separate; light salmon, cilia somewhat paler.

Uncus slender, long. Valva simple. Vinculum large, elongate, with broad base. Anellus lobes rounded, weak, short-haired. Aedoeagus large. Cornuti, two patches of fine dentations. (Slide no. 926 D, type.)

Araucaria Camp, 800 m, March 11, 1939. One specimen. Nearest to *L. rhodographa* MEYRICK.

Lactura ophioglossa MEYRICK, 1924

Lactura ophioglossa MEYRICK, 1924, Exot. Microl., vol. 3, p. 122.

Distribution: Netherlands New Guinea, Weyland Mountains, 6000 feet.

Rattan Camp, 1200 m, February 11, 1939. One specimen, with colouring and markings closely agreeing with the description except for the apical dark furcate projection being broader than in the type; furthermore, our specimen is considerably smaller: 24 mm as against 33—35 mm of MEYRICK's original material. Perhaps this is a dwarfish "hunger" specimen.

Lactura acrantha spec. nov. (fig. 772)

ἄκρον = marge, *ἄνθος* = flower

♂ 23 mm. Head bright orange-crimson, face yellow suffused with orange-red, orbits orange-red. Antennae pale reddish-orange. (Palpi missing.) Thorax (damaged) deep ferruginous-crimson, collar pale yellow with bright orange-red base. Abdomen crimson, towards base paler: reddish-orange. Legs light orange-crimson. Fore wing with veins 7 and 8 stalked; ovate, dilated, broadest at $^3/_5$, costa with base arched, in middle little curved, slightly bent and prominent at $^3/_5$, apex rounded, termen

rounded, moderately oblique. Deep crimson-ferruginous; costa with a moderate yellowish streak, gradually dilated from beyond middle to apex, narrow, partially interrupted along extreme terminal edge, dilated and suffused along dorsum: along costa yellow-orange with lower edge suffused with orange-crimson, along termen and dorsum orange-crimson; a narrow violet marginal streak along posterior fourth of costa, not reaching apex; other markings pale yellow: a submarginal streak along costa from base to $^2/_5$ narrowly edged with orange-crimson above and beneath and almost interrupted beyond base by an orange-crimson suffusion; an elongate ovate moderate spot on edge of costal streak below costa before $^3/_4$; a somewhat broader obliquely transverse spot before apex from below costa, slightly constricted in middle, lower extremity almost touching termen below apex; a series of three smaller terminal spots on veins 3—5, separated by orange-crimson colour: rounded, subtriangular and elongate, respectively, a dot below third one; a moderate rounded spot below fold opposite middle of dorsum. Cilia (imperfect) bright orange. Hind wing deep crimson, cilia bright orange.

Uncus long, slightly curved, clavate, top with a patch of acute spikes. Valva simple. Vinculum short, ovate. Anellus lobes slender, twisted, slightly pointed. Aedoeagus short, rather slender. Cornuti, a patch of small dentations. (Slide no. 923 D, type.)

Araucaria Camp, 800 m, March 29, 1939. One specimen. Allied to *L. platyorma* MEYRICK and *L. leucophthalma* MEYRICK.

AMPHITHERIDAE

This small family comprises six genera, of which two are known from India, two from Australia and one from Central America; the sixth genus, *Amphithera* MEYRICK, was recorded from Australia, Java, and New Guinea. At present we are able to add a second genus to the Papuan list, viz. *Chalcoteuches* TURNER, originally described from Tasmania, and also not less than seven new species of *Amphithera*.

The species are of a Tineoid appearance, with long antennae and mostly with brightly shining purplish or golden wings. Males in most genera, and in one genus also females, have eyes separated in a dorsal and a ventral part by a horizontal comb of thick scales which feature, unique in Lepidoptera, reminds of the build of compound eyes in certain Coleoptera and Agnatha.

The group must be an ancient one, of which its present distribution bears clear evidence. The family might represent a side branch of the Yponomeutid stock, and be of a Papuan origin. We expect many new discoveries from both the Malay Archipelago and the Papuan region.

Key to the genera of Amphitheridae

1. Hind wing with a deep sinuate fold containing vein 1b . *Dasycarea* ZELLER
   Hind wing without such fold 2

2. Hind wing with vein 4 absent 3
   Hind wing with all veins present 5
3. Fore wing with vein 8 absent. . . . . *Agriothera* MEYRICK
   Fore wing with vein 8 present 4
4. Palpus short, slender, with median segment shortly rough-haired beneath . . . . . *Euchoptila* TURNER
   Palpus long, median segment smooth-scaled below . . . *Telethera* MEYRICK
5. Eyes in male normal; hind wing with veins 3 and 4 stalked . . . . . *Chalcoteuches* TURNER
   Eyes in male separated in a small upper and an enlarged lower part by a pecten of hair-scales; hind wing with veins 3 and 4 connate . *Amphithera* MEYRICK

Amphithera MEYRICK, 1892

Amphithera MEYRICK, 1892, Proc. Linn. Soc. N. S. Wales, vol. 17, p. 97. Exot. Microl., vol. 1, p. 154, 1913. TURNER, Proc. Linn. Soc. N. S. Wales, vol. 38, p. 223, 1913.

Zonops TURNER, 1900, Trans. Roy. Soc. S. Austral., vol. 24, p. 17. MEYRICK, Gener. Ins., fasc. 133, pp. 2, 8, 1912. Exot. Microl., vol. 1, p. 154, 1913.

The species recorded below show a striking sexual dimorphism. Attribution of sex partners to each other was not easy; the names of the collecting localities were of little use for this, because most species have been captured at more than one camp, but the colouring of the legs appears to be a good guide. The females are distinctly smaller than the males.

Male genitalia little sclerotized. Tegumen narrowed. Uncus bifid or bilobed, its articulation with tegumen indefinite. Anus, a long tube. Socii absent. Gnathos with arms sometimes dilated in middle, hook curved, rising. Transtilla paired, arms broad, narrowed medianly. Vinculum moderate. Saccus rather short, stout. Valva ovate, simple, sacculus often developed as a thick basal pad and always with a dense pencil of hair-scales (corema). Aedoeagus long, very slender.

Ovipositor tortricoid: lobes erect, thickened, haired. Anapophyses short. Ostium small, simple. Ductus bursae simple. Bursa copulatrix ovoid. Signum, a subconical hook with a broad base, greatly differing from the quadruple stellate signum of the Yponomeutidae, or signum is absent.

Key to the Papuan species of *Amphithera*

1. Males 2
   Females 6
2. Fore wing with apical fourth occupied by a silvery-white patch . . . . . *choanogena* spec. nov.
   No such patch 3
3. Fore wing strewn with bluish-white scales. . . . . *poliochlamys* spec. nov.
   Fore wing without such scales 4
4. Tegula coppery-violet, apical half silvery-white . . . *tyriochalca* MEYRICK
   Tegula glossy dark fuscous 5
5. Hind wing unicolorous fuscous-bronze . . . . . *personata* spec. nov.
   Hind wing greyish-white, costa, dorsum and apical third olive-bronze-fuscous . . . . . *eulampra* spec. nov.

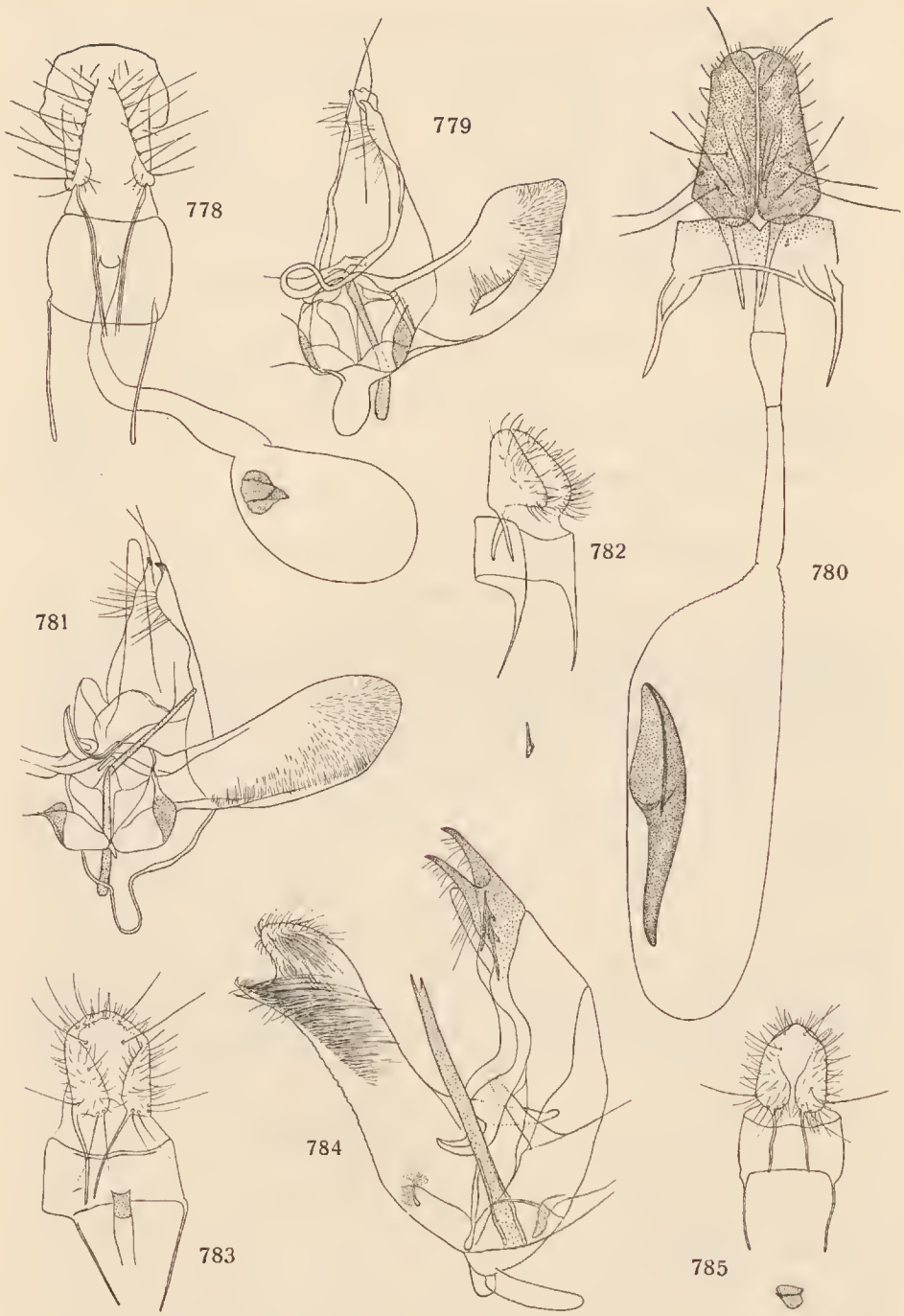
6. Fore wing with a dorsal streak distinctly differing in colour from, and lighter than, the remainder of wing, not obscured or irrorated with darker colour 7
Fore wing without a dorsal streak, or when this streak present, it is obscured and irrorated with the same colour as the remainder of wing. 8
7. Dorsal streak olive-whitish . . . . . *choanogena* spec. nov.
Dorsal streak purple-lilac . . . . . *euniphadopa* spec. nov.
8. Fore wing with ground colour dark fuscous-bronze and purple, more or less strewn with whitish-blue scales 9
Fore wing with ground colour whitish, yellowish-golden, or light fuscous-purplish-bronze, in the last case fore wing narrow 10
9. Fore wing with a distinct whitish-blue spot on middle of cell; disc suffused with deep brown-bronze, darker than costa and dorsum . . *personata* spec. nov.
Fore wing without such spot on middle of cell; disc not darker suffused . . . . . *poliochlamys* spec. nov.
10. A comb of short white scales along posterior edge of eye *cremnodes* spec. nov.
No such comb 11
11. Head whitish . . . . . *nivilita* spec. nov.
Head sordid light brownish-fuscous . . . . . *aurea* spec. nov.

Amphithera choanogena spec. nov. (figs. 778, 781)

χοάνη = crucible, *γένος* = born

♂ 20—30 mm. Head fulvous, becoming ochreous-fuscous posteriorly, face glossy light ochreous, fringe of scales across eye light fuscous. Antenna bronze, slightly whitish-ringed towards base and apex. Palpus dark fuscous, median segment becoming blackish towards apex, its extreme apex, and terminal segment throughout, light ochreous, clouded with fuscous. Thorax deep purple. Abdomen fuscous-purple, apical fourth snow-white. Legs pale fuscous, all tarsi brownish-bronze, articulations and a round spot on middle of median tibia pale golden-ochreous. Fore wing rather elongate, dilated, broadest beyond $^3/_4$, costa moderately curved, more so towards base, apex moderately pointed, termen hardly curved, oblique. Brightly shining reddish-purple. Apical third snow-white with pale bluish shine, sparsely scattered with pale fuscous, a small purple apical spot; anterior edge of white area from before $^3/_4$ of costa inwardly oblique to upper angle of cell, thence vertical and convex along transverse vein to about base of vein 4, with a small triangular projection to lower angle of cell, thence slightly convex to termination of vein 3; a purple-crimson dorsal streak somewhat paler than ground colour, from beyond base to about $^3/_4$, slightly mixed anteriorly with pale blue, its upper edge irregularly serrate anteriorly, excavate in middle, concave posteriorly, the streak being gradually attenuated from middle to end; a faint dot of pale blue irroration in middle of cell above middle of disc. Cilia rather dull whitish-fuscous, a small suffusion on basal half opposite apical dot and two faint fuscous lines throughout. Hind wing deep bronze. Cilia pale fuscous-bronze, a glossy deep bronze subbasal fascia.

Uncus bifid. Gnathos with arms dilated in middle, so as to form broad flaps, hook long, recurved. Transtilla arms elongate, ending in narrow



Genitalia of *Amphithera*. Fig. 778: *choanogena* spec. nov., female. Fig. 779: *personata* spec. nov., male. Fig. 780: *euniphadopa* spec. nov., female. Fig. 781: *choanogena* spec. nov. male. Fig. 782: *nivilita* spec. nov., female, with signum. Fig. 783: *aurea* spec. nov. female. Fig. 784: *eulampra* spec. nov. male. Fig. 785: *poliochlamys* spec. nov., female, with signum.

processes. Valva ovate, gradually narrowed towards base, sacculus large, triangular. Saccus moderate. (Slide no. 1011 D, holotype.)

Scree Valley Camp, 3800 m, September 15, 1938 (holotype). Lake Habbema, 3250—3300 m, June 30—August 27, 1938. Moss Forest Camp, 2800 m, October 12, 1938. Top Camp, 2100 m, January 27, 1939. Seven specimens.

♀ 18—21 mm. Head light fulvous-brownish, face pale yellowish-ochreous. Antenna bronze, whitish-ringed towards base. Palpus light yellowish-ochreous. Thorax deep purple. Abdomen whitish-fuscous. Legs as in male. Fore wing elongate, hardly dilated, costa moderately curved anteriorly, apex pointed, termen gently rounded, oblique. Shining light purplish-bronze, moderately suffused with deeper purple, towards base of costa and in middle of disc, towards costa and apex mixed with white scales. A broad pale greenish-yellow dorsal streak from base to tornus, at base and along posterior half reaching fold, upper edge rather irregular, variably shaped, becoming less defined posteriorly, mostly with a large triangular emargination from beyond base to before middle, followed by a small one, both filled with deep purple suffusion; posterior half of costa often paler bronze, not purplish-tinged; a suffused deep purple apical dot; faint yellowish-white suffusion forming an erect small spot in middle of cell above middle of wing and a smaller round dot on each angle of cell. Cilia pale fuscous, a deeper fuscous subbasal shade along termen, a suffused blotch opposite apical dot. Hind wing glossy fuscous-whitish, cilia concolorous.

Ovipositor broad, top thickened, lobes bristled along inner edge. Signum, a short horn with broad base on a round basal plate. (Slide no. 1016 D, allotype.)

Lake Habbema, 3250—3300 m, August 15, 1938 (allotype), August 5—end August, 1938. Iebèlè Camp, 2250 m, December 2, 1938. Six specimens. Variable species; the whitish irroration is sometimes more extended towards the apex, or the entire ground-colour is deeper bronze; in one specimen the dorsal streak is much obscured by the ground colour.

Amphithera euniphadopa spec. nov. (fig. 780)

εν = true, *νιφάς* = snow, *ὤψ* = eye

♀ 20 mm. Head tawny-ochreous mixed with whitish, face pale golden-ochreous, posterior edge of eye with a pecten of whitish scales. Antenna light fuscous-bronze, pale ringed. Palpus fuscous, terminal segment light ochreous, with a shallow lateral groove. Thorax (denuded) light ochreous ?, tegula light ochreous. Abdomen dark fuscous, tip pale ochreous. Legs pale ochreous, anterior tibia fulvous-bronze, median tibia blackish-fuscous ringed with golden-yellowish, posterior tibia with long greyish hairs above and beneath, all tarsi dark purplish-fuscous. ringed with pale ochreous-golden. Fore wing elongate-subovate, hardly dilated, costa curved towards

extremities, straight in middle, apex obtusely pointed, termen rounded, oblique. Shining deep reddish-purple, appearing fuscous-bronze in certain lights, basal half of costal edge fuscous; a violet, rather dull dorsal streak from base to tornus, reaching termen above tornus, its upper edge rather well-defined, with a deep triangular incision almost reaching dorsum beyond base of wing and with a small triangular indentation before middle; a conspicuous subovate white dot in upper half of cell slightly before middle of wing, another one smaller, rounded or transverse, on upper angle of cell. Cilia ochreous-tawny, basal third darker fuscous, tawny patches: opposite apex and opposite middle of termen, between these cilia whitish except base. Hind wing glossy greyish-white, apical third suffused with fuscous. Cilia pale tawny-ochreous, basal third light fuscous.

Ovipositor subconical, rather strong. Signum, a large horn with a broad base. (Slide no. 1031 D, type.)

Mist Camp, 1800 m, January 12, 1939. One specimen. Allied to *A. choanogena* spec. nov.

Amphithera personata spec. nov. (figs. 779, 790, 791)

♂ 20 mm. Head with face glossy fuscous, vertex suffused with brownish, side-tufts pale grey, pecten across eye fuscous-grey, orbit of dorsal half of eye whitish. Antenna dark fuscous-grey, narrowly ringed with whitish, scape whitish below. Palpus brassy-fuscous. Thorax dark fuscous, glossy. Abdomen purplish-fuscous, posterior segments 5—8 and anal tuft snow-white, venter whitish mixed with snow-white; two pencils of pale ochreous scales adjusted dorso-laterally and directed downward on the articulation *between* metathorax and abdomen (visible only after removing the abdomen). Legs pale fuscous, anterior leg throughout, posterior leg only above, suffused with dark fuscous, all tarsi dark fuscous above, articulations whitish. Fore wing elongate-ovate, costa moderately curved throughout, less so before middle, apex obtusely pointed, termen rounded, oblique. Whitish-fuscous, suffused with fuscous-purple, less so towards apex; a deep reddish-purple suffused streak from base of costa to middle of termen, dilated and becoming olive-bronze in middle, shining purple beyond cell; a whitish-grey streak of ground colour along dorsum, occupying about $^1/_3$ of wing breadth, much suffused with fuscous-grey and irregularly suffusedly dotted with blackish-lilac. Cilia (imperfect) fuscous mixed with whitish, paler in tornus, a dark fuscous interrupted antemedian line. Hind wing fuscous-bronze, becoming brassy-bronze on tornal third. Cilia pale bronze-greyish, a subbasal fuscous-bronze fascia.

Uncus bifid. Arms of gnathos are long, simple rods, medianly forming a rising loop. Arms of transtilla slender, with a narrow point. Anellus developed, arrowhead-like. Valva rather short, curved, cucullus narrowed, sacculus small. Saccus stout, clavate. (Slide no. 1013 D, holotype.)

♀ 21 mm. Head dark brown, frons pale ochreous, face glossy whitish.

Antenna dark fuscous-bronze, ringed with pale fuscous, scape whitish below. Palpus pale ochreous-golden, slightly suffused with fuscous laterally. Thorax light purplish-fuscous-bronze. Abdomen pale fuscous. Legs pale golden-bronze, anterior and median tibia and all tarsi above blackish-fuscous, white ringed. Fore wing elongate-subovate, dilated, broadest at $^3/_4$, costa moderately curved throughout, apex pointed, termen rounded, oblique. Deep bronze-golden; more than the median third of wing from beyond base to margin suffused with deep reddish-golden-brown, becoming purple beyond cell, a deep brown streak from this suffusion along posterior third of fold to edge of wing; a greyish-lilac dorsal streak from base of wing to the preceding marking, tolerably limited above by vein 1b, with a few scattered pale blue scales; irroration of shining whitish-blue scales from about middle to apex, anteriorly extending to a subquadrate dot of the same colour on upper edge of cell, narrowed at $^3/_4$ of wing, with a triangular projection below beyond cell, reaching middle of wing, attenuated beyond middle; irroration of same colour forming a series of irregular spots and streaks along fold throughout, and an irregular marginal fascia from tornus to just below apex; a whitish-blue dot on each angle of cell, lower one largest. Cilia pale ochreous-fuscous mixed with greyish-fuscous, basal half fuscous with olive tinge, a faint olive-fuscous subapical line. Hind wing fuscous-whitish, pale, with golden gloss, cilia ochreous-white with grey basal third.

Ovipositor short, cylindrical. Signum, a moderate acute horn with asymmetrical broad base. (Slide no. 1030 D, allotype.)

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 16, 1938 (holotype, male), October 13, 1938 (allotype, female). Two specimens. Intermediate between the preceding and *A. poliochlamys* spec. nov. Also allied to *A. thyriochalca* Meyrick.

Amphithera eulampra spec. nov. (fig. 784)

ευ = true, *λαμπρός* = shining

♂ 22 mm. Head dark fuscous, face shining ochreous-white, eye separated in two parts by a broad pecten of scales. Antenna dark fuscous. Palpus dark fuscous, terminal segment fuscous-ochreous. Thorax (partially denuded) deep brownish-fuscous, apex with golden shine. Abdomen deep fuscous-brassy, in certain lights also with purple gloss, apex white. Legs dark fuscous, median leg blackish above, tibia and all tarsal segments with pale golden-ochreous rings (posterior legs missing). Fore wing elongate-subovate, costa curved anteriorly, straight in middle, apex pointed, termen rounded, oblique. Shining deep purplish-brassy-red, a deep violet-purple suffusion along anterior $^3/_4$ of costa, attenuated posteriorly; a lilac-grey streak along $^5/_6$ of dorsum from slightly beyond base, its upper edge well-defined, reaching to fold by a triangular projection at $^1/_3$, its posterior fourth exceeding fold, with ill-defined edge; a shining

deep moss-green dilated streak above basal fifth of dorsum, its extremities acute, anterior almost to base of wing, posterior edge inwardly oblique; a few dull dark fuscous-lilac scales scattered over dorsal streak; a small rounded golden spot slightly beyond middle of cell, a slightly larger whitish spot on upper angle of cell; termen narrowly edged with white. Cilia pale fuscous, along costa mixed with whitish, along termen with tawny basal half and a dark fuscous antemedian shade. Hind wing glossy greyish-white, a streak along costa extending over upper half of cell and occupying apical third of wing and a paler broad suffusion along dorsum olive-bronze-fuscous. Cilia pale olive-fuscous with slight bronze gloss, basal half darker.

Uncus bifid, with long points. Anus short. Gnathos with arms dilated beyond middle, hook recurved, acute. Arms of transtilla slender, gradually narrowed. Valva slender, cucullus bilobed, sacculus small. Saccus slender, elongate. (Slide no. 1035 D, type.)

Top Camp, 2100 m, January 22, 1939. One specimen. A brilliantly coloured species, easily recognisable by the bicolorous hind wings. Allied to *A. personata* spec. nov. and to *A. euniphadopa* spec. nov.

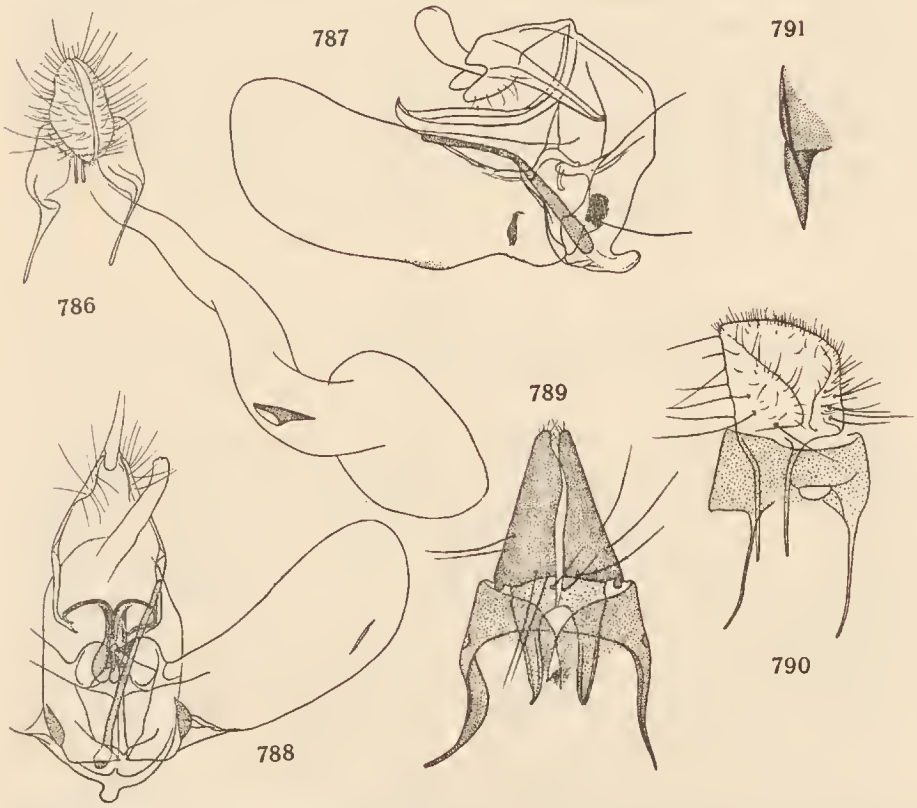
Amphithera poliochlamys spec. nov. (figs. 785, 788)

πολιός = grey, *χλαμύς* = coat of mail

♂ 22—23 mm. Head fuscous, scales across eyes and face with bronze shine. Antenna dark fuscous-bronze, whitish-ringed along basal half. Palpus fuscous-bronze. Thorax deep brown-bronze, tegula with purplish-brassy shine. Abdomen bronze-fuscous, anal tuft snow-white. Legs fuscous, a whitish spot on median tibia beyond middle, all tarsi dark fuscous, whitish-ringed. Fore wing elongate, moderately dilated, broadest at $^3/_4$, costa gently curved, more so towards base, apex obtusely pointed, termen slightly rounded, oblique. Shining fuscous-bronze with light purple gloss, more pronounced in middle third of disc and along dorsum, sparsely and rather regularly scattered throughout with large bluish-white scales; a very ill-defined large whitish-purple patch beyond cell not reaching margins of wing, appearing pale grecnish in certain lights; this patch and costa above it somewhat denser irrorated with whitish; ill-defined moderate bronze spots, somewhat darker than ground colour, without purple: on middle of upper edge of cell, below $^1/_4$ and below $^1/_2$ of fold, respectively; a conglomeration of white scales indicating a small dot in middle of cell; a suffused white dot on each angle of cell. Cilia fuscous-grey, a bronze-purple antemedian fascia. Hind wing glossy bronze becoming paler bronze-grey towards costa. Cilia bronze-grey, a greyish-bronze subbasal shade.

Uncus quadrifid. Anus long. Gnathos with arms dilated throughout, hook recurved, rather short. Arms of transtilla broad, semicricular, beaked medianly. Valva elongate-ovate, moderately dilated, sacculus small, triangular. Saccus rather short, slender. (Slide no. 1012 D, holotype).

Lake Habbema, 3250—3300 m, August 13, 1938 (holotype, male), August 13—20, 1938. Scree Valley Camp, 3800 m, September 22, 1938. Four specimens.



Genitalia of Amphitheridae. Fig. 786: *Amphithera crimnodes* spec. nov. female. Fig. 787: *Chalcoteuches chlorantha* spec. nov., male. Fig. 788: *Amphithera poliochlamys* spec. nov., male. Fig. 789: *Chalcoteuches chlorantha* spec. nov., female. Fig. 790: *Amphithera personata* spec. nov., female. Fig. 791: *idem*, signum.

♀ 19—20 mm. Head sordid ochreous-brownish, vertex brown. Antenna dark bronze, sharply ringed with white along basal half. Palpus bronze-fuscous, apical segment with paler basal, median and apical rings. Thorax deep purple-brown. Abdomen pale greyish-ochreous. Legs pale fuscous, anterior and median tibia dark fuscous-bronze with a white postmedian and an apical spots, tarsi fuscous-bronze, white-ringed. Fore wing elongate, hardly dilated, costa curved at base, apex obtusely pointed, termen moderately rounded, oblique. Shining fuscous-purple-brassy, becoming somewhat deeper purple towards base, irregularly strewn with large bluish-white scales, more so beyond cell, especially along posterior third of costa and along termen; bluish-white scales form more or less distinct irregular dots: in middle of cell, below $^1/_3$ of fold, on upper and lower angle of cell and on costa just before apex; irregular deep purple suffused spots:

two in disc towards base of cell in longitudinal series and two larger and more distinct ones: below $^1/_4$ and below middle of fold, respectively. Cilia pale fuscous-greyish, glossy, with an irregular purplish-brassy subbasal fascia from apex to tornus. Hind wing pale whitish-grey, posterior half tinged pale greyish-fuscous. Cilia concolorous, becoming almost white towards tornus and along dorsum.

Ovipositor subconical, obtusely pointed. Signum small: a shallow subtriangular bag. (Slide no. 1014 D, allotype.)

Scree Valley Camp, 3800 m, September 22, 1938 (allotype, female). Letterbox Camp, 3600 m, September 10, 1938. Lake Habbema, 3250—3300 m, en July—end August, 1938. Six specimens.

Amphithera crimnodes spec. nov. (fig. 786)

κριμνώδης = grainy

♀ 19—20 mm. Head sordid pale ochreous, slightly mixed with tawny a small pecten of whitish scales along posterior edge of eye. Antenna pale golden-ochreous, ringed with brownish. Palpus long, with terminal segment under $^1/_2$; light golden-ochreous slightly suffused with brownish. Thorax light tawny-ochreous with purplish-bronze gloss, or light golden-purplish-fuscous. Abdomen pale ochreous-greyish. Legs pale ochreous, anterior leg deeper ochreous, anterior and median tibiae with two dark fuscous bands, all tarsi with a broad dark fuscous median band on each segment. Fore wing elongate, rather narrow, costa curved towards base, apex pointed, termen moderately rounded, oblique. Pale golden-yellow, along margins suffused with deeper tawny-yellowish, in middle of disc posteriorly suffused with whitish, sparsely scattered with large tawny-fuscous scales, markings yellowish-fuscous-tawny with purple gloss. Variable; markings in type as follows. Base of costal edge fuscous; base of wing, anterior half of costa and base of dorsum suffused with yellowish-tawny; irregular tawny-fuscous irroration below anterior half of costa from beyond base; fuscous-tawny markings as follows: a suffused roundish spot in middle of disc beyond base, a large prostrate-Z-shaped patch across median half of disc before middle, its anterior acute extremity not reaching $^1/_4$ of dorsum, median part thickened, posterior extremity ill-defined, dissolved in coarse irroration extending below posterior half of costa to before apex and occupying upper half of wing, forming an ill-defined elongate-V-shaped mark below; an irregular spot on end of fold; termen and apex suffused with tawny-fuscous, a spot and an irregular marginal line along termen yellowish-white; an undulate longitudinal median streak across posterior $^2/_3$ of wing, dilated in apex: shining light purple, visible only in certain lights. Cilia pale ochreous-tawny with purplish gloss, an interrupted fuscous antemedian line. Hind wing greyish-yellow-white, tinged pale fuscous towards margins, cilia whitish-yellow, base somewhat brighter.

Ovipositor erect, narrowed above and beneath. Signum, a small acute horn. (Slide no. 1015 D, holotype.)

Lake Habbema, 3250—3300 m, August 20, 1938 (holotype), end July—end August, 1938. Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 14, 1938. Seven specimens. Very distinct by the yellowish-golden colouring. Variable: sometimes more densely suffused with yellowish-fuscous, the dark discal mark connected with the apex, the whitish colouring in the disc forming a streak along the closing vein, a dot beyond this and some irregular irroration in the cell and above the dorsum to before the base.

Amphithera nivilita spec. nov. (fig. 782)

♀ 15 mm. Head whitish, vertex slightly mixed with fuscous. Antenna bronze-golden, ringed with whitish, scape white below. Palpus fuscous-bronze, terminal segment somewhat under $^1/_2$, pale golden. Thorax rather light golden-fuscous, with faint purplish gloss. Abdomen fuscous-whitish. Legs whitish banded with deep fuscous-bronze. Fore wing elongate-ovate, rather narrow, costa moderately curved towards extremities, straight in middle, apex pointed, termen long, rounded, very oblique. White, faintly tinged citric-yellow, in certain lights spots of pale yellowish-green irridescence, especially along fold, on end of cell and before apex; edge of costa and an ill-defined broad submedian streak from base of costa to before middle of disc pale fuscous with a purplish gloss; markings formed by coarse fuscous-purple irroration arranged as follows: a rather narrow streak along basal fourth of dorsum curved upwards and extended to a blotch on posterior half of cell which is connected with a streak of sparse coarse irroration below posterior $^3/_4$ of costa, and with a patch of denser irroration, brighter shining with purple which occupies lower half of wing beyond cell and reaches to apex; several irregular white spots, i.e. on middle of upper edge of cell, on lower angle of cell, a short longitudinal streak beyond upper angle of cell and two elongate marginal spots: one above, and one below apex. Cilia whitish-ochreous, opposite apex and opposite middle of termen with a fuscous bar, between these yellowish-whitish, basal third from apex to tornus fuscous. Hind wing glossy yellowish-white with faint pinkish tinge, cilia yellowish-white.

Ovipositor conical. Signum very small: a short horn with a broad base. (Slide no. 1032 D, type.)

Sigi Camp, 1500 m, March 20, 1939. One specimen. Allied to the preceding.

Amphithera aurea spec. nov. (fig. 783)

♀ 19 mm. Head sordid whitish-fuscous, frons fuscous, face golden; no pecten of scales behind the eye. Antenna whitish, broadly ringed with bronze, scape whitish. Palpus golden-whitish, median segment above,

and terminal below: fuscous; terminal segment 1. Thorax purplish-golden-fuscous. Abdomen whitish-grey. Legs whitish-fuscous, anterior and median tibia dark fuscous above with narrow whitish basal, median and apical rings, tarsi bronze-fuscous, articulations with white rings. Fore wing ovate-lanceolate, slightly dilated, broadest at $^3/_4$, costa slightly curved at base, hardly prominent at $^3/_4$, gently bent towards apex, apex pointed, termen hardly rounded, oblique. Pale golden, towards dorsum with a faint purple gloss, scattered with ferruginous-brassy and white scales. Anterior half of costa and fold suffused with fuscous-brassy; an invert-V-shaped mark of rather dark bronze-fuscous irroration on $^1/_3$ of dorsum, somewhat inwardly oblique, reaching $^2/_3$ across wing, with top in cell; a subtriangular dark bronze-fuscous spot on dorsum before end of fold; white speckling more distinct along posterior $^2/_3$ of costa, before apex and along termen; it forms three more or less distinct rounded discal dots: on upper edge of cell, beyond $^1/_3$ of wing, and on upper and lower angles of cell, respectively. Cilia pale fuscous with a bronze gloss, basal half somewhat darker, a brassy interrupted antemedian fascia. Hind wing greyish-white, tinged pale fuscous towards apex, cilia concolorous.

Ovipositor short, subconical. Signum absent. (Slide no. 1033 D, type.)

Scree Valley Camp, 3800 m, September 24, 1938. One specimen.

Chalcoteuches Turner, 1927

Chalcoteuches Turner, 1927, Proc. Roy. Soc. Tasman., 1926, pp. 159—160.

In this genus both sexes have normal eyes. Mr. Jan B. Common kindly sent us a male and a female specimen of the genotype, *Ch. phlogera* Turner, from Tasmania, for comparison. In this species the vein 4 of the fore wing is almost obliterate in the male, but normal in the female.

Chalcoteuches chlorantha spec. nov. (figs. 787, 789)

χλωρός = green, ἄνθος = gem

♂ 12 mm, ♀ 17.5 mm. Head in male whitish-fuscous-grey, face white, head in female sordid pale ochreous, face whitish-ochreous. Antenna whitish, ringed with bronze-fuscous. Palpus in male strongly recurved, fuscous-grey, in female longer, less recurved, in both sexes a suffused white band below apex and a narrow whitish suffusion at base of terminal segment. Thorax glossy fuscous, a pale greyish round spot on middle of anterior edge, tegula silvery-white with dark fuscous basal half, a greyish-white subapical transverse line. Abdomen greyish-fuscous with silvery gloss, anal tuft pale ochreous. Legs whitish-fuscous, anterior leg in male suffused with dark fuscous on inner side, silvery-whitish on outer side, anterior leg in female and median legs in both sexes deep fuscous-

bronze, tibiae with a whitish median ring, tarsi white-ringed, posterior tarsus faintly whitish-ringed. Fore wing with veins 7 and 8 connate in male, stalked in female; ovate-lanceolate, in female moderately dilated at $^3/_4$, costa gently curved towards extremities, more so in female, in middle straight in male, slightly concave in female, apex pointed, termen moderately rounded, oblique. Fuscous with an olive tinge, with pale greenish reflections in certain lights, in male also with a purplish gloss in disc; markings shining greenish-white. A curved streak along basal $^2/_5$ of dorsum including an elongate spot of ground colour at base of dorsum, upper edge concave, posterior edge with two narrow dentations: above dorsum and in fold; a very faint narrow, inwardly oblique transverse fascia originating from upper posterior extremity of preceding, running to below $^1/_3$ of costa and connected above with a hardly perceptible elongate subcostal pale greenish blotch extending over median third of wing; an elongate greenish-white spot along dorsum from middle to before tornus, upper edge with a moderate projection pointing towards apex of wing; this spot is separated by a dark fuscous dot from an irregular marginal streak from tornus to costa before apex, considerably dilated above and including two round blackish-fuscous dots on middle of termen and a larger blackish apical spot which extends narrowly along upper fourth of termen; a longitudinal black streak in posterior half of cell, dilated posteriorly, in male reduced to an indistinct fuscous suffusion. Cilia fuscous with pale base, a white bar above apex, a larger bar below apex, cilia in tornus greenish-white. Hind wing with veins 3 and 4 stalked in male, connate in female; pale greyish-purple, cilia grey with a dark grey antemedian shade.

Uncus with a blunt top and with lateral lobes. Anus long. Gnathos very long with slender arms, gradually dilated towards base, and with a short curved hook. Arms of transtilla long, slender, sinuate. Valva rather long, dilated, cucullus subtruncate, sacculus small, ill-defined. Saccus moderate (Slide no. 1017 D, holotype.)

Ovipositor sclerotized, conical, pointed. Postapophyses strong. Bursa simple. (Slide no. 1034 D, allotype.)

Top Camp, 2100 m, January 22, 1939 (holotype, male). Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 14, 1938 (allotype, female). Two specimens.

LITHOCOLLETIDAE

One single species of this large family of leaf miners has been described from New Guinea before. The discovery of several hundreds more can be expected in future. Dr. L. J. Toxopeus told the author that he observed very numerous leaf mines of different kinds during the Expedition, but had no opportunity for breeding them.

Key to the Papuan genera of Lithocolletidae

1. Posterior tibia with bristly hairs above . . . . . *Acrocercops* Wallengren
   Posterior tibia smooth or with closely appressed hairs. 2
2. Median tibia thickened with scales throughout . . . . . *Caloptilia* Hübner
   Median tibia not thickened 3
3. Fore wing with vein 11 absent, hind wing with veins 3 and 4 absent . . . . . *Guttigera* gen. nov.
   Fore wing with vein 11 present, from middle or from before middle of cell, hind wing with all veins present or only 4 absent 4
4. Labial palpus straight, smooth . . . . . *Iraina* gen. nov.
   Labial palpus curved, median or terminal segments roughish below . . 5
5. Fore wing with four veins (3, 4, 6, 8) absent . . . . *Hypectopa* gen. nov.
   Fore wing with all veins present or only with vein 3 absent . . . . . *Parectopa* Clemens

Guttigera gen. nov. (fig. 792)

Head smooth. Ocellus not perceptible. Proboscis developed. Antenna 1, simple in male, scape moderate, slightly thickened, with a basal pecten of four or five hairs. Labial palpus long, curved, subascending or porrect, median segment moderately thickened with scales, roughish below posteriorly and at apex or rather slender, terminal segment somewhat or

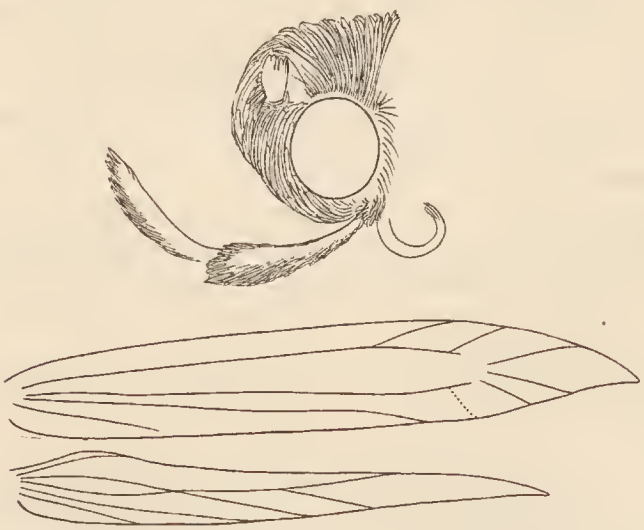


Fig. 792: *Guttigera rhythmica* gen. nov., spec. nov., male, head and wing neuration.

rather shorter than median, thickened with scales, roughish along frontal side, pointed. Maxillary palpus very short, porrect, pointed. Thorax without crest. Anterior tarsus $2^1/_2$ times the length of tibia, slender, basal segment slightly thickened with smooth scales. Median and posterior tibiae smooth. Fore wing lanceolate, 1b simple, rather short, 2 from angle, weak, 3 absent, 4 absent, 6 to termen, 7 absent, 8 to costa, 8—10 remote, 10 from $^2/_3$ of cell, 11 absent. Hind wing $^1/_2$, narrowly lanceolate, cilia 4;

2 free from base, 3 absent, 4 absent, cell narrow, short (under $^1/_3$), acute, 5 connate with 7 from angle, 6 our of 7 at middle, 7 to costa.

Genotype *Guttigera rhythmica* spec. nov., male.

An interesting new form correlated with *Leucantiza* CLEMENS and *Marmara* CLEMENS, nearest to the latter, differing from both by the thickened palpi and by the neuration of the fore wing.

Key to the species of *Guttigera*

1. Blackish-purple with white markings. . . . . *rhythmica* spec. nov.
   Whitish, irrorated with fuscous . . . . . *albicaput* spec. nov.

Guttigera rhythmica spec. nov. (figs. 792, 795)

ῥυθμικός = rhythmic

♂ 10 mm. Head shining pale silvery-fuscous. Antenna pale fuscous-grey, becoming purplish beyond base, bases of segments with narrow indistinct pale rings, scape greyish with a black base. Palpus whitish, median segment with a blackish apical, median with a subapical ring. Thorax fuscous with bronze gloss, apical half of tegula whitish. Abdomen blackish with pale bands. Legs white, anterior leg pale fuscous; all tibiae and outer spurs blackish, anterior and median tarsi white, narrowly black-ringed, posterior tarsus dark leaden-grey. Fore wing lanceolate, pointed, broadest in middle. Deep fuscous-purple, little glossy, markings snow-white. Five tolerably equidistant transverse marks on costa from $^1/_5$ to apex: first moderate, transverse, slightly inwards-oblique; second and third large, subquadrate, slightly outwards-oblique, reaching to cell; fourth minute, transverse, vertical, continued across cilia, fifth transverse, just before apex, rather irregular, reaching to termen, broadly continued across costal cilia; a row of somewhat irregular subquadrate dots along dorsum from base to tornus; a few scattered white scales in disc and on terminal edge; anterior half of disc slightly irrorated with pale fuscous. Cilia pale bronze-fuscous, along costa suffused with dark fuscous-purple, barred with white opposite two ultimate costal marks, in apex with a narrow basal and a subapical blackish-purple line, subapical line followed by an apical snow-white line; on termen with three ill-defined dark purplish lines diverging anteriorly, and a few scattered white scales. Hind wing glossy pale fuscous, faintly tinged purplish posteriorly, cilia pale bronze-fuscous.

Tegumen pointed, bristly along ventral edge, top slightly indent. Valva small, short, shaped as a three-ribbed pyramid, below its pointed top a group of brush-like bristles, bent on a slender stalk which is curved at base in the direction of the top of valva. Vinculum strong, semispheroid. Aedoeagus sclerotized, rather long, slightly bent and narrowed apically. (Slide no. 1086 D, type.)

Moss Forest Camp, five km northeast of Lake Habbema, 2800 m, October 19, 1938. One specimen.

Guttigera albicaput spec. nov.

♂ 10. mm. Head snow-white, frons edged with pale fuscous. Antenna pale fuscous, white-ringed, scape white with fuscous apex. Palpus white, median segment with an apical spot above, apical segment with a broad median band: blackish. Thorax (damaged) whitish. (Abdomen missing.) Legs (anterior missing) white, median tibia and basal segment of tarsus black above, other segments with apical black rings, posterior leg whitish, tibia with a faint postmedian and an apical greyish band, posterior tarsus with a grey apical band on each segment. Fore wing lanceolate, slightly dilated, costa moderately curved anteriorly, apex pointed. Sordid white, densely irrorated with fuscous, suffused with dark grey-fuscous along costa and dorsum from beyond base. Base of costal edge suffused with blackish. Six to seven rather ill-defined wedge-shaped whitish costal dots from $^1/_4$ to before apex, slightly continued across wing by whitish irroration; a whitish dot in tornus; coarse white irroration from beyond cell to before apex, in its middle confluent, so as to form an irregular transverse white band. Cilia along costa grey-fuscous barred with white opposite costal dots, cilia elsewhere fuscous-whitish, faintly tinged ochreous with a dark fuscous antemedian and an apical partially interrupted fascia, both convergent on apex of cilia about opposite middle of termen, a submedian interrupted similar line from opposite middle of termen to tornus, and a median line converging with the preceding posteriorly. Hind wing glossy greyish-white, cilia whitish with pale golden gloss.

Iebèlè Camp, 2250 m, November 9, 1938. One specimen.

Hypectopa gen. nov. (fig. 793)

Head with a smooth flap of scales over vertex and upper half of face, less smoothly appressed laterally, side tufts slightly spreading, small loose tufts of scales on each side of face from below base of antenna. Ocellus not perceptible. Proboscis developed. Antenna 1, filiform, subserrulate posteriorly, scape moderately elongate, slightly clavate, without pecten. Labial palpus long, curved, subascending, median segment slightly thickened with scales, roughish towards apex below and at apex, terminal segment 1, slightly thickened beyond base, acute. Maxillary palpus moderate, slightly curved, drooping, loosely short-scaled. All tibiae smooth-scaled. Fore wing lanceolate, rather blunt-pointed, 1b ill-defined, apparently simple, 2 from angle, 3 absent, 4 absent, 5 close and parallel to 2, 6 absent, 7 to costa, 8 absent, 10 remote, short, upper edge of cell triangularly projecting at $^2/_5$, emitting vein 11 from this projection, thence deeply curved downward, cell open between 5 and 10. Hind wing $^1/_2$, lanceolate, pointed, cilia 5; 2 from towards base, short, 3 and 4 connate, short, cell open between 4 and 5, 5 and 6 connate from acute angle of cell, of which the lower edge is formed by median vein, 7 separate, to apex,

Fig. 793: *Hypectopa ornithograpta* gen. nov., spec. nov., male, head and wing neuration.

discoidal very outwardly oblique, 8 as a short branch of 7 towards base.

Genotype *Hypectopa ornithograpta* spec. nov., male.

Allied to the preceding and to *Parectopa* Meyrick, differing from the latter by the absence of four veins in the fore wing.

Hypectopa ornithograpta spec. nov. (figs. 793, 798)

ὄρνις = bird, γράφω = to write

♂ 12 mm. Head whitish with faint golden gloss. Antenna fuscous, finely ringed with white. Palpus white, median segment infuscated, terminal segment with a dark fuscous median band. Thorax whitish, slightly mixed with fuscous. Abdomen whitish, bases of segments dark fuscous, anal tuft pale ochreous. Legs white, tibiae and tarsi with broad blackish bands, posterior tibia greyish-fuscous, with a faint cloudy median, and a subapical band. Fore wing lanceolate, rather narrow, costa gradually curved, apex pointed. White with slight golden gloss, markings fuscous-bronze. A rather short blackish longitudinal spot on base of costa, narrowly continued along basal fifth of costal edge, posteriorly confluent with top of a semi-circular mark on upper half of wing; this mark is continued anteriorly by an ill-defined, inwardly oblique transverse line to dorsum, posteriorly by an outwardly oblique rather narrow transverse fascia, somewhat thickened below, inwardly angulate in fold, lower extremity rounded, not reaching dorsum; six pairs of undulate, rather irregular outwardly oblique transverse lines from $^1/_3$ to $^4/_5$ of costa, interspaces between pairs somewhat broader than distance between the lines of each pair, posteriorly all interspaces

becoming narrower, lines less oblique; second to sixth pairs are interconnected in middle of disc and obscured by fuscous-bronze suffusion which fills ultimate pair almost entirely; two almost vertical dark fuscous-bronze transverse bars between ultimate pair and apex, continued on cilia, subapical bar also continued along margin of wing posteriorly, so as to form an apical ring, these bars narrowly interconnected in middle, first bar also adjacent to the preceding marking. Cilia white along costa, around apex and along upper part of termen barred with dark bronze opposite transverse markings of wing, around apex also with a dark bronze apical band, cilia along lower part of termen and on dorsum rather light bronze-fuscous, becoming paler anteriorly. Hind wing pale bronze-grey, cilia pale bronze-fuscous.

Tegumen bristly along posterior half, top indent. Valva small, narrowed, cardinate; on disc some four peculiar bristles, each shaped as a flattened brush, bent on a long rising stalk. Vinculum, a strong ring, lower rim bluntly pointed. Aedoeagus, a moderate, simple tube with a pointed apex. (Slide no. 1085 D, type.)

Lake Habbema, 3250–3300 m, August 9, 1938. One specimen.

Acrocercops Wallengren, 1881

Acrocercops Wallengren, 1881, Ent. Tidskr., vol. 2, p. 95. Meyrick, Gener. Ins., fasc. 128, p. 14, 1912. Fletcher, Mem. Dept. Agr. Ind., Ent., vol. 11, p. 3, 1929. Etc.

Conopomorpha Meyrick, 1885, Trans. N. Zael. Inst., vol. 18, p. 183.

Dialectica Walsingham, 1897, Proc. Zool. Soc. Lond., 1897, p. 150.

Eucosmophora Walsingham, 1897, *ibidem*, p. 148.

Leucospilapteryx Spuler, 1910, Schmett. Eur., vol. 2, p. 408, fig. 159.

Eutrichocnemis Spuler, 1910, *ibidem*, p. 409.

Neurobathra Ely, 1918, Proc. Ent. Soc. Wash., vol. 19, p. 39, pl. 9, fig. 2.

Neurostrata Ely, 1918, *ibidem*, p. 41, pl. 9, fig. 4.

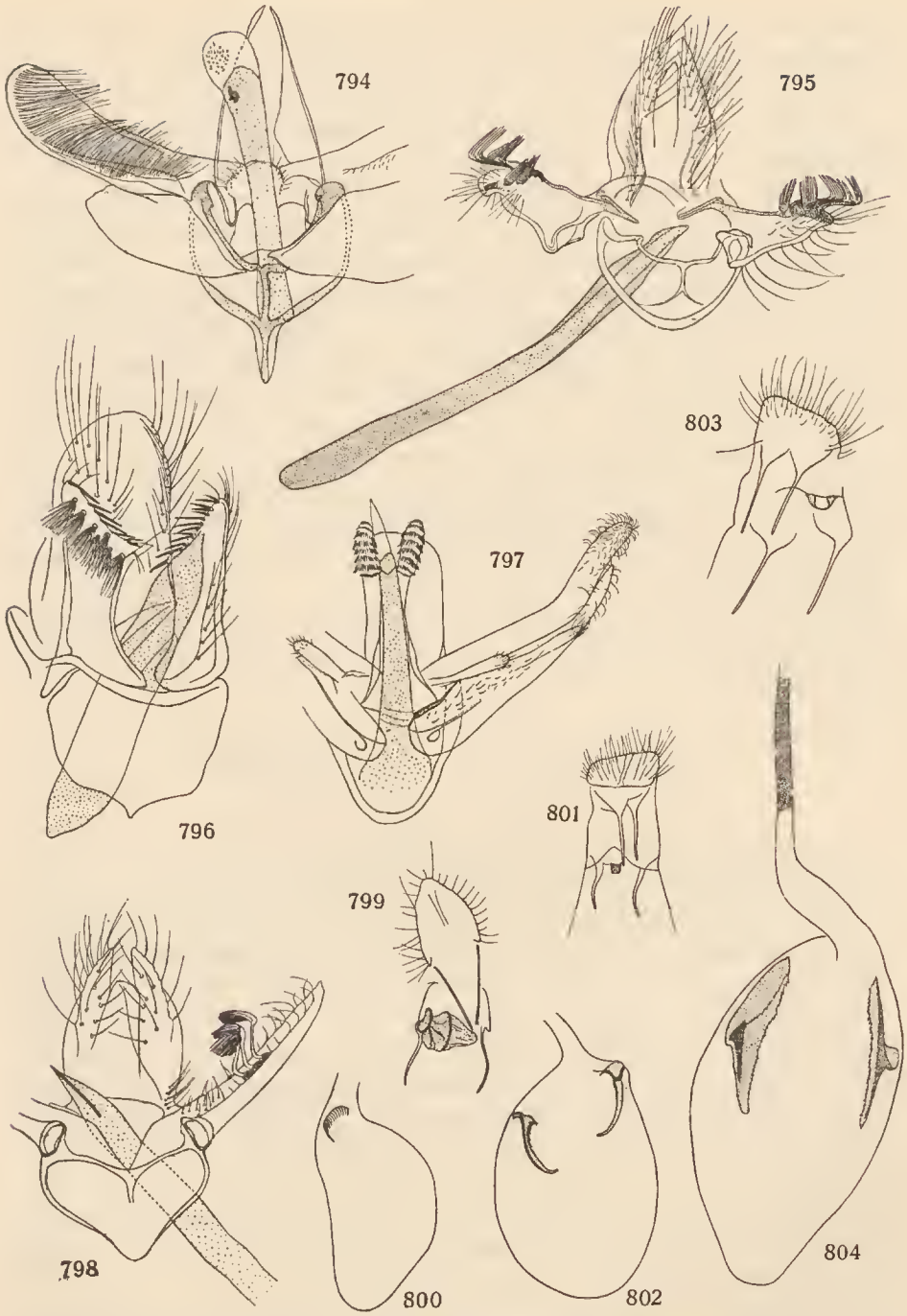
Key to the Papuan species

1. Fore wing with white triangular costal and dorsal dots 2
   Not thus 3
2. One costal dot at $^3/_4$, two dorsal dots: at $^1/_4$ and $^2/_3$ . . . *timia* spec. nov.
   Three costal dots: before $^1/_4$, $^1/_2$ and $^3/_4$, three dorsal dots: at $^1/_4$, beyond $^1/_2$ and at $^3/_4$ . . . . . *heptadrachma* spec. nov.
3. Fore wing with a silvery-white dorsal streak . . . . . *argentigera* spec. nov.
   Fore wing with a leaden-metallic longitudinal supramedian streak . . . . . *plumbilinea* spec. nov.

Acrocercops heptadrachma spec. nov. (fig. 796)

ἑπτά = seven, *δραχμή* = coin

♂ 7 mm. Head shining silvery-leaden, collar dark grey. (Labial palpi missing.) Maxillary palpi white, long, reaching to base of antenna, straight, strongly diverging, ascending. Antenna, thorax and abdomen blackish,



Genitalia of Lithocolletidae. Fig. 794: *Iraina periplecta* spec. nov., male. Fig. 795: *Guttigera rhythmica* spec. nov., male. Fig. 796: *Acrocercops heptadrachma* spec. nov., male. Fig. 797: *A. plumbilinea* spec. nov., male. Fig. 798: *Hypectopa ornithograpta* spec. nov., male. Fig. 799: *A. timia* spec. nov., female. Fig. 800: *idem*, bursa copulatrix. Fig. 801: *Caloptilia tmetica* spec. nov., female. Fig. 802: *idem*, bursa copulatrix. Fig. 803: *Acrocercops argentigera* spec. nov., female. Fig. 804: *idem*, bursa copulatrix.

thorax with a leaden gloss, venter with broad silvery-white bands. Legs black, anterior and median femur and tibia with a silvery-white subapical lateral dot, tarsi ringed with silvery-white; posterior leg with pale spurs, tarsus faintly pale-ringed. Fore wing ovate-lanceolate, costa gently curved towards extremities, apex obtuse, tornus indefinite. Blackish, with faint purple gloss, markings shining silvery-white. Three costal dots: before $^1/_4$, before $^1/_2$ and before $^3/_4$, first subtriangular, second largest, subquadrate, third transverse, slightly inwards-oblique; a slender transverse-crescentic mark in disc before apex, narrowly black-edged anteriorly, open posteriorly; a dull whitish small mark across extreme apex; three silvery-white dorsal dots: at $^1/_4$, beyond $^1/_2$ and at $^3/_4$, first largest, triangular, other transverse. Hind wing dark fuscous-grey with faint purplish gloss, cilia fuscous-grey.

Valva small, cardinate, shorter than tegumen, obliquely truncate, sacculus convex; a row of strong subappressed bristles along apical edge, right valva also with a subapical series of brush-like setae on the outer surface. Vinculum thick, almost cylindrical, acutely pointed. (Slide no. 1059 D, type.)

Sigi Camp, 1500 m, February 24, 1939. One specimen. Long maxillary palpi suggest a generic distinction, but this is uncertain, with the labial palpi missing.

Acrocercops timia spec. nov. (figs. 799, 800)

τίμιος = expensive

♀ 8 mm. Head leaden, suffused with tawny laterally, face shining white. Antenna bronze, forth fifth snow-white. (Palpi missing.) Thorax glossy light fuscous, abdomen glossy light fuscous-grey. Legs fuscous-greyish-bronze, median and posterior tibia with a silvery median band, all tarsi pale-ringed, spurs snow-white. Fore wing narrowly lanceolate, acutely pointed. Shining brassy-golden, becoming golden-violet on anterior half, markings golden-white. A triangular dot on $^3/_4$ of costa; a large erect-triangular spot on dorsum at $^1/_4$, with the acute top reaching above middle of disc; a slightly inwards-oblique triangular dot on dorsum at $^2/_3$ of wing. Cilia dull pale fuscous-greyish. Hind wing pale grey, cilia dull pale fuscous-greyish.

Ostium, an irregularly plicate body. Anapophyses fine, sinuate. Signum unpaired, weak: curved, transversely carinulate. (Slide no. 1058 D, type.)

Araucaria Camp, 800 m, March 12, 1939. One specimen.

Acrocercops argentigera spec. nov. (figs. 803, 804)

♀ 11.5 mm. Head and thorax snow-white, the latter broadly edged laterally with light bronze-fuscous. Antenna snow-white above, fuscous below, scape snow-white. Palpus white, tip greyish. Abdomen whitish-

fuscous. Legs fuscous-white, anterior femur, tibia and basal segment of tarsus bronze-fuscous above, median tibia bronze-fuscous, basal half whitish, a white postmedian ring, all tarsi bronze-fuscous above, anterior and median broadly, posterior narrowly ringed with white. Fore wing narrowly lanceolate, broadest in middle, costa hardly curved, apex pointed, termen indefinite. Rather light brassy-fuscous, hardly glossy; costa narrowly suffused with pale whitish-fuscous-grey from base to before apex, a well-defined snow-white dorsal streak from beyond base to before apex, occupying $^1/_4$ of wing breadth, before apex almost interrupted by a small pale projection of ground colour, both extremities of this streak pointed; a white strigula around apex separated by ground colour from top of preceding; a suffused small blackish dot below costa well before apex, sharply centred with an elongate white dot. Cilia pale fuscous with a white bar just below apex, along costa before apex white with a broad basal and two minute, more convex submedian blackish strigulae. Hind wing whitish-grey, glossy. Cilia pale bronze.

Ostium, a semiovate body furrowed medianly, thickened laterally. Anapophyses moderately long, straight. Ductus bursae clothed with minute subsexagonal plates to before bursa. Bursa copulatrix large, ovoid. Signa very large, horn-like, with dilated, obliquely truncate bases, finely denticulate along edges. (Slide no. 1056 D, type.)

Lake Habbema, 3250–3300 m, July 2, 1938. One specimen. Belongs to the large *A. syngramma* group.

Acrocercops plumbilinea spec. nov. (fig. 797)

♂ 17 mm. Head, thorax light bronze-fuscous, face bronze-whitish. Antenna pale fuscous with a bronze gloss, becoming fuscous-whitish along its apical third. Palpus light bronze-fuscous, upper edge of median segment narrowly suffused with dark fuscous except towards apex, terminal segment dark fuscous, anterior edge narrowly fuscous-whitish-golden. Abdomen fuscous; pectus and venter whitish. Legs pale ochreous, above leaden-grey slightly suffused with dark fuscous, median tibia with a suffused black submedian band, posterior tibia grey, white below, dorsal bristles fuscous (posterior tarsi missing). Fore wing narrowly lanceolate. Grey-fuscous; costal fourth with a whitish-yellow streak from base, slightly infuscated along median half, extended posteriorly, so as to occupy apical fourth of wing and becoming orange-yellow except along costa, an ill-defined narrow leaden-metallic subcostal streak from beyond $^3/_4$ to before apex; a moderate straight leaden-metallic streak above middle of wing from base to beyond $^3/_4$, a pale yellow suffused spot on termen below apex of this streak, merging into apical orange-yellow area; an elongate suffused pale yellow patch on dorsum well beyond $^1/_3$, hardly reaching above fold anteriorly, slightly narrowed posteriorly. Cilia pale fuscous, along costa yellowish-white. Hind wing pale fuscous-bronze, a

pale purplish-brassy attenuated streak along dorsum and lower half of termen, not reaching above lower edge of cell. Cilia brownish-fuscous.

Tegumen rather weak, erect. Uncus absent. Gnathos, two elongate subpending knobs densely covered with whorls of modified bristles. Valva moderate, narrowed, cucullus narrow, short-bristled; sacculus over $^4/_5$, much narrowed, ending in a stout short-haired spike, with a small knob with long hairs at base of this spike. A somewhat clavate process originating from middle of base of valva and appressed to its disc, with a bristly top. Vinculum ovate. Anellus erect-triangular. Aedoeagus straight, moderate, with dilated base. (Slide no. 1074 D, type.)

Bernhard Camp, 50 m, August, 1938 (J. Olthof). One specimen. Belongs to the *A. cramerella* group.

Iraina gen. nov. (fig. 805)

Head with loosely appressed scales, rather rough on crown. Ocellus posterior. Proboscis developed. Antenna 1, scape elongate, with pecten. Labial palpus moderate, slightly drooping, straight, smooth, terminal segment shorter than median, slightly spindle-shaped, acutely pointed.

Fig. 805: *Iraina periplecta* gen. nov., spec. nov., male, head and wing neuration.

Maxillary palpus rather short, apparently three-jointed, porrect, finely scaled, subacute. Median and posterior tibiae smooth, with short projecting scales at apices only. Fore wing with 1b simple, strong, 2 from angle, 3 and 4 rather weak, 6 absent, 7 to costa, 7–10 tolerably equidistant, 11 from towards base, weak, cell dilated and rounded posteriorly. Hind wing $^2/_3$, lanceolate, costa abruptly inbent at $^1/_3$; cilia over 2; 4 absent, cell open between 3 and 5, 5 and 6 stalked, stalk apparently out of 7, 7 to apex.

Genotype *Iraina periplecta* spec. nov., male.

Allied to *Parectopa*, differing by the straight, slightly drooping labial palpi, and by the absence of vein 6 in the fore, of vein 4 in the hind wing.

Iraina periplecta gen. nov. (figs. 794, 805)

περί = entirely, *πλέκω* = to plait

♂ 11 mm. Head white. Antenna pale fuscous, finely ringed with darker fuscous, scape whitish. Palpus white, median segment suffused with fuscous laterally, terminal segment with a broad median fuscous band. Thorax (damaged) fuscous mixed with white. Abdomen fuscous above, whitish-fuscous below, a series of lateral oblique fiscous lines, anal tuft glossy fuscous-whitish. Legs whitish, anterior femur, tibia and tarsus fuscous-black above, median and posterior legs with broad fuscous-blackish median bands on tibiae and all tarsal segments and a subapical band on tibiae, posterior spurs with blackish tips. Fore wing elongate-ovate, rather narrow, costa hardly curved anteriorly, slightly impressed in middle, apex and termen rounded, no anal angle. White, markings suffused with fuscous. A dark fuscous elongate spot on base of costa indistinctly connected along base of wing with a dot on base of dorsum; four-fifths of the costal half of wing rather suffused with pale fuscous, except for costal markings of pure white ground colour arranged as follows: an outwardly oblique wedge-shaped mark at $^1/_3$ reaching to middle of disc, edged anteriorly by a narrow fuscous outwardly bluntly angulate transverse fascia which is moderately extended along costa anteriorly, becomes faint below and hardly reaches $^1/_4$ of dorsum, posterior edge of this costal white spot formed by a short transverse fuscous mark; a smaller, less oblique white wedge-shaped mark slightly before $^2/_3$ of costa, followed by an elongate-ovate, slightly subcostal white dot somewhat before $^3/_4$, both surrounded and connected by dark fuscous suffusion; an oblique well-defined dark fuscous band occupying posterior sixth of costa and apex, edge outwardly oblique, apical extremity rounded; this band contains a small invert-wedge-shaped white mark just below $^1/_6$ of costa and a large elongate-triangular white dot traversing band below its middle, with acute top directed basad; posterior third of disc below these markings white, hardly infuscated, except for an ill-defined transverse suffusion on $^3/_4$ of dorsum and a fuscous irregular marginal streak in tornus, both connected posteriorly with fuscous costal markings. Cilia white, dark fuscous are a narrow subbasal line running throughout, and a broader apical line from costa to opposite termen below apex of wing; dorsal cilia long, glossy light bronze-fuscous, posteriorly with apical part suffused with whitish. Hind wing rather light fuscous, cilia glossy bronze-fuscous.

Tegumen pointed. Anus moderate. Valva elongate, little dilated, bristled along proximal and apical edges on the inner side; pads at base of costa moderate, weakly bristled; sacculus $^1/_2$, entirely separate, subovate, obtusely pointed, naked. Vinculum, a strong semicircular band; a small

saccus present. Aedoeagus moderate, cylindrical, slightly dilated, with a small subapical tooth. Vesica finely denticulate. Corcmata large. (Slide no. 1073 D, type.)

Araucaria Camp, 800 m, March 11, 1939. One specimen.

Parectopa Clemens, 1860

Parectopa Clemens, 1860, Proc. Acad. Nat. Sci. Philad., vol. 12, p. 210. Meyrick Gener. Ins., fasc. 128, p. 19, 1912. Etc.

Euspilopteryx Zeller, 1847, Linn. Ent., vol. 2, pp. 313—314, 347.

Macarostola Meyrick, 1907, Proc. Linn. Soc. N. S. Wales, vol. 32, p. 62.

Oecophyllembius Silvestri, 1908, Boll. Lab. Zool. Portici, vol. 2, p. 196.

Euspilapteryx Spuler, 1910, (*nec* Stephens 1835) Schmett. Eur., vol. 2, p. 408.

Micrurapteryx Spuler, 1910, Schmett. Eur., vol. 2, p. 409.

Parectopa ceryx spec. nov. (figs. 808, 811, 812)

κερύξ = herald

♂, ♀ 13.5–14.5 mm. Head whitish-yellow, face edged laterally with crimson, broader edged in female. Antenna glossy light grey, basal half whitish tinged pink with a narrow grey streak above, scape whitish, with a crimson longitudinal streak above. Palpus pale yellow, somewhat infuscated towards apex. Thorax pale yellow, tegula deep crimson, narrowly edged with pale yellow. Abdomen shining white. Legs yellowish-white, anterior leg with femur black above, tibia along outer side black, above crimson with a pale yellow postmedian transverse band, tarsus with basal segment narrowly streaked with black above, a median and an apical black band, other segments with apical black bands; median leg with knee blackish, tibia with a small submedian and an elongate spot: crimson, extreme apex black, tarsus with blackish rings around apices of segments; posterior tarsus with these rings brownish. Fore wing with veins 7 and 8 separate; narrowly lanceolate, costa straight in middle, slightly curved towards extremities, apex pointed. A straight deep crimson longitudinal median streak from base of costa to well before apex below middle of disc, separating a glossy whitish-yellow costal area from dull bright yellow dorsal area; crimson streak with a small longitudinal projection reaching to below base of fold, and with four very inwards-oblique narrow slightly zigzag crimson branches reaching dorsum: beyond base, before $^1/_4$, beyond $^1/_3$ and before $^2/_3$ of wing, respectively; first branch interrupted so as to form an elongate crimson marginal spot in male, not interrupted, narrow in female; second, third and fourth branches abruptly dilated along dorsal edge each so as to form a small longitudinal marginal spot, moderately and triangularly dilated at origin; crimson median streak much narrowed at $^1/_6$ of wing, sending two short diverging branches towards edge of wing but not reaching this, and forming a large ocellus in apex of wing; edges of this ocellus are narrow, anterior almost vertical,

upper marginal, running to apex, lower straight, forming a continuation of the median streak, also running to apex; a black line from base of wing edging median crimson streak from above, dilated in an elongate black spot before the above mentioned ocellus and forming a longitudinal black subapical streak within this ocellus; this line is finely interrupted at inequal intervals beyond each interruption sending a narrow black outwardly oblique line to costal edge, 6–7 lines altogether, last one vertical, edging the crimson ocellus anteriorly. Cilia isabel, along costa whitish, along upper half of termen and in apex light yellow, a curved black line from costa just before apex, thence along tips of cilia to their apices. Hind wing shining leaden-grey, cilia isabel.

Tegumen broad. Valva with a narrow base and an almost circular disc, weakly haired. Anellus, a membraneous large rising body with narrowed weakly hairy top. Sacculus very long and slender. Aedoeagus very long, base somewhat thickened. Small coremata present. (Slide no. 1060 D, holotype.)

Ostium, a small slender tube. Anapophyses furcate to middle. Ductus bursae long, simple. Bursa copulatrix small. Signa, strong, rather broad, sinuate blades with small basal plates, denticulate on inner surface and inner edge, denticulations becoming long fine needles towards the apices. (Slide no. 1061 D, allotype.)

Letterbox Camp, valley four km from Wilhelmina Top, 3600 m, September 12, 1938 (holotype, male). Letterbox Camp, 3600 m, September 4, 1938 (allotype, female), September 5–14, 1938. Three males, one female. A distinct, elegant species.

Caloptilia Hübner, 1826

Caloptilia Hübner, 1826, Verz. bek. Schm., p. 427. Meyrick, Gener. Ins., fasc. 128, p. 25, 1912. Fletcher, Mem. Dept. Ind., Ent., vol. 11, p. 38, 1929. Etc.

Poeciloptilia Hübner, 1826, Verz. bek. Schm. ,p. 427.

Graeillaria Haworth, 1828, Lep. Brit., p. 527.

Ornix Treitschke, 1833, (*nec* Duponchel 1838, *nec* Zeller 1839), Schmett. Eur., vol. 9, part 2, p. 194.

Euspilapteryx Stephens, 1835, Ill. Brit. Ins., Haust., vol. 4, pp. 362—363.

Gracilaria Zeller, 1839, Isis. vol. 32, pp. 208—209.

Coriseium Zeller, 1839, *ibidem*, p. 210.

Antiolopha Meyrick, 1894, Trans. Ent. Soc. Lond., 1894, p. 25.

Aspilapteryx Spuler, 1910, Schm. Eur., vol. 2, p. 407, fig. 158.

Xanthospilapteryx Spuler, 1910, *ibidem*, p. 407.

Key to the Papuan species of *Caloptilia*

1. Fore wing with a blackish-fuscous triangular spot on $^1/_6$ of costa . . . . . *euhelia* spec. nov.
   No such costal spot 2
2. Fore wing with five dark fuscous costal dots . . . *pentaphylactis* Meyrick
   Fore wing without costal dots . . . . . *tmetica* spec. nov.

Caloptilia euhelia spec. nov. (fig. 806)

εὐήλιος = sunny

♂ 14.5 mm. Head and thorax pale golden-ochreous, collar and shoulder reddish-orange (thorax damaged). Antenna pale orange ringed with dark brown, scape reddish-orange. Palpus golden-yellow, terminal segment pale pink, a dark lilac-fuscous subapical band, tip golden-yellow. Abdomen pale orange. Legs golden-yellow, anterior leg suffused with pink above, tibia blackish-lilac except below; median tibia pink, apical half above blackish-lilac, below pink, with a subapical transverse band. Fore wing ovate-lanceolate, broadest at $^2/_3$, costa moderately curved at base and along posterior third, apex pointed, termen little curved, extremely oblique. Glossy pale yellow; an irregular suffused longitudinal pinkish-orange streak from base along fold, moderately broad to before middle of wing, with a small projection to base of dorsum; a less distinct projection to $^3/_4$ of dorsum, before its middle abruptly dilated and occupying more than the lower half of wing to dorsum, with upper edge forming a triangular projection beyond middle which reaches to upper edge of cell, thence gently concave, to costa before apex; a blackish-purple strongly outwards-oblique erect suffused triangular spot on basal sixth of costa, with lower edge limited by fold, with top acute, on $^1/_3$ of fold; an irregular longitudinal patch of dense deep blackish-purple irroration on orange streak extending from middle of wing to before apex, parallel along anterior $^2/_3$ and filling orange streak except its narrow edges; posterior third of this patch abruptly dilated into a subquadrate blotch reaching from below costa to tornus, with posterior edge inwardly oblique, straight and well-defined. Cilia golden-yellow, basal two-thirds along costa before apex, in apex and along upper part of termen suffused with orange. Hind wing pale orange tinged pinkish, cilia light orange.

Valva curved, dilated, truncate, cucullus bluntly pointed above, gradually rounded below; an ovate knob at base of costa, bristled posteriorly, pointed above. Vinculum rather broad, strongly elongate. Aedoeagus slender, moderately long, gradually dilated along basal third. (Slide no. 1055 D, type.)

Iebèlè Camp, 2250 m, December 1, 1938. One specimen.

Caloptilia tmetica spec. nov. (figs. 801, 802)

τμητικός = cutting

♀ 13 mm. Head fuscous-white, collar purplish-fuscous, face shining white. Antenna pale golden-ochreous, finely ringed with fuscous. Palpus snow-white, apical half of terminal segment light bronze. Thorax rather light purple (damaged), pecten dark fuscous. Abdomen glossy greyish-fuscous, venter yellowish-white. Legs: anterior and median femur and tibia dark fuscous, above and on inner sides violet-purple, anterior tibia with a small

median yellowish ring, tarsi white with articulations finely ringed with fulvous; posterior leg fuscous-white faintly tinged yellowish, posterior coxa shining golden-whitish-yellow. Fore wing narrowly lanceolate, costa gently curved throughout, somewhat more so along posterior third, apex pointed, tornus indefinite. Shining pale yellow; a much suffused narrow deeper coppery-yellow longitudinal streak along basal half of fold, running parallel from middle of wing, continued to termen below apex and becoming bright golden; a violet-purple basal patch occupying less than $^1/_5$ of wing, with a concave edge, lower half outwardly oblique and faintly extended along dorsal margin which bears numerous short transverse violet marks, last one maginal, in apex, which is slightly suffused with golden-orange. Cilia pale fuscous, opposite apex becoming golden-orange with two short violet subapical strigulae, along costa whitish-yellow. Hind wing pale greyish-fuscous with a bronze gloss, cilia light fuscous.

Ostium, a small and short subcylindrical tube. Anapophyses gently sinuate. Signa slender, sickle-shaped, with abruptly dilated moderate bases, inner edges denticulate towards the bases. (Slide no. 1057 D, type.)

Sigi Camp, 1500 m, February 26, 1939. One specimen. Very near to *C. zachrysa* MEYRICK, from Ceylon, but differing by the absence of costal markings, not interrupted dorsal edge of pale yellow colour and smaller basal patch.

EPERMENIIDAE

Key to the Papuan genera of Epermeniidae

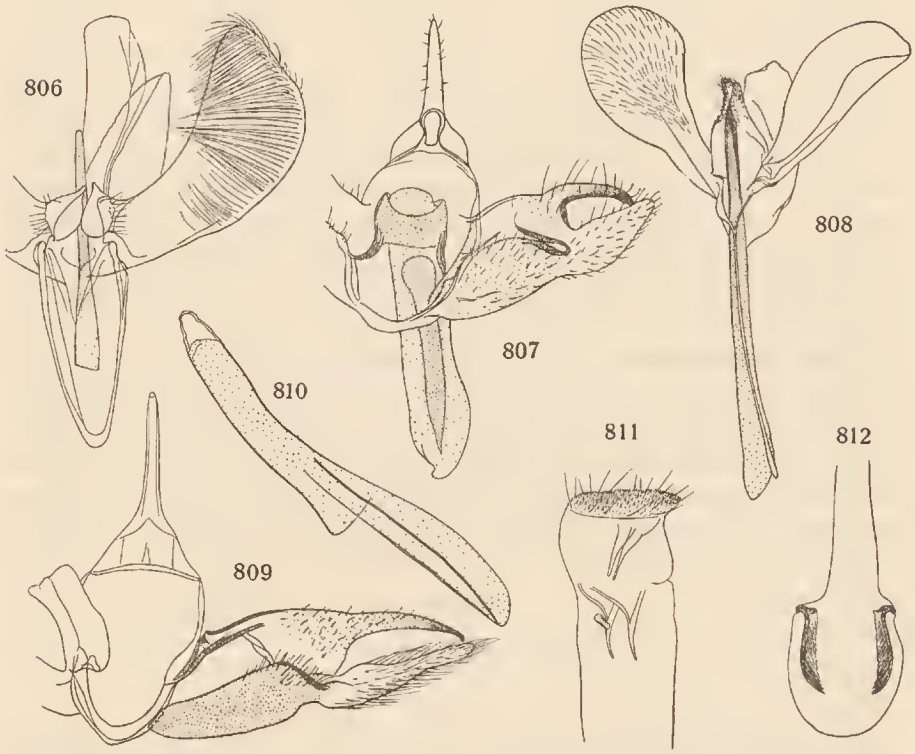
1. Fore wing with all veins present . . . . . *Epermenia* HÜBNER
   Fore wing with vein 4 absent, sometimes also 2 absent *Ochromolopis* HÜBNER

Ochromolopis HÜBNER, 1826

Ochromolopis HÜBNER, 1826, Verz. bek. Schmett., p. 408. HERING, Schmett. Mitteleur., p. 45, 1932. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 150, 1929. Etc.

Head rather smooth, side tufts small, somewhat spreading. Proboscis rather weak, not scaled. Antenna about $^3/_4$, with long segments; subdentate: with apices of segments angularly projecting, short-ciliate in male; scape with a basal pecten. Labial palpus long, recurved, ascending, median segment thickened with loose scales, somewhat projecting along apical half below, terminal segment scaled, less thickened, subacute, under 1. Maxillary palpus distinct, short, porrect, loosely scaled. All tarsi with whorls of bristly scales at apices of segments, posterior tibia with long bristly scales above and beneath, basal segment of posterior tarsus elongate, with bristly scales beneath. Fore wing with three small teeth of raised scales in dorsal cilia, lanceolate; 1b furcate, short, 2 from slightly before angle, sometimes reduced to a short trunk or absent, 3 from angle, 4

approximated, 5 absent, 7 and 8 stalked from below angle, 7 to termen, 9 from angle, 11 from about $^1/_4$ of cell. Hind wing $^1/_2$, lanceolate, cilia over 3, veins all separate, 5 supramedian, 6 and 7 long-stalked.



Genitalia of Lithocolletidae and Epermeniidae. Fig. 806: *Caloptilia cuhelia* spec. nov., male. Fig. 807: *Ochromolopis oculigera* spec. nov., male. Fig. 808: *Parectopa ceryx* spec. nov., male. Fig. 809: *Ochromolopis bidentata* spec. nov., male. Fig. 810: *idem*, aedoeagus. Fig. 811: *Parectopa ceryx* spec. nov., female. Fig. 812: *idem*, bursa copulatrix.

The above description is drawn from the two following species, and differs in one single respect from that of the genotype, *O. ictella* HÜBNER, from South Europe and Asia Minor, viz., veins 6 and 7 in the hind wing are long-stalked in our species, separate in *ictella*. However strange the distribution of the genus may appear, the above difference is, in our opinion, not sufficient for a generic separation of the following two species.

Ochromolopis oculigera spec. nov. (fig. 807)

♂ 15 mm. Head pale tawny-ochreous, side-tufts rather strongly raised and spreading, mixed laterally with dark fuscous. Antenna dark fuscous, apices of segments abruptly and strongly expanded. Palpus pale tawny-ochreous, median and terminal segments densely suffused and irrorated

with dark fuscous except towards extremities. Thorax pale tawny-ochreous, somewhat infuscated anteriorly, tegula with basal half densely suffused with blackish-fuscous. Abdomen fuscous-whitish. Legs: blackish, tibia and basal segment of tarsus with a basal, a submedian and a subapical band of pale ochreous bristles, spurs and whorls of bristles on tarsal segments pale ochreous, posterior leg whitish-ochreous, tibia with a subbasal grey band, tarsal segments grey above except their bases, whorls of bristles whitish. Fore wing narrowly lanceolate, costa gently curved anteriorly. White, densely irrorated and marked with fulvous-tawny, dark fuscous and blackish. A light fuscous-tawny basal patch occupying $^1/_6$ of wing, with three parallel dark fuscous transverse lines, first subbasal, third marginal; costa marked with minute blackish dots; edge of basal patch inwardly oblique, straight, with an acutely triangular tawny posterior projection just above fold; median half of costa with a row of blackish dots, posteriorly less distinctly separate and forming blackish irroration; posterior fourth of costa with three larger blackish dots interconnected by fine black irroration, last dot subapical; an irregular subcostal streak of pale ochreous-tawny irroration extending from beyond basal patch to about $^5/_6$; two large subovate fuscous patches in middle of disc somewhat above middle of wing, touching each other, first one largest, both more or less connected with fulvous-tawny suffusion extending along fold, marked below and before first discal patch with a fuscous spot, and extending along posterior $^3/_4$ of dorsum; including an elongate-triangular spot of white ground colour on middle of dorsum and a small white dot on dorsum before end of fold; two black dots before middle of dorsum; three black dots in disc, broadly encircled with white, arranged in a series parallel to fold but well above it: before, between and beyond fuscous discal patches, respectively, first one somewhat elongate; a broad slightly inwards-oblique tawny-fulvous band at $^3/_4$, not reaching costa, connected below with dorsal suffusion; this band is marked above middle of disc posteriorly by a dark fuscous elongate spot and is followed by a leaden-grey ovate patch occupying posterior fifth of wing but not reaching wing-margins; a row of some three irregular black dots along termen, last one apical. Cilia light golden-ochreous, basal half along costa in apex and along termen tinged deeper fulvous-ochreous and mixed with black, a narrow black bar in apex, a subapical blackish dot opposite middle of termen, dorsal cilia mixed with black points along base, raised tufts of black scales on base of cilia at $^1/_4$ and beyond middle of wing. Hind wing whitish with leaden gloss, cilia pale ochreous.

Tegumen short. Uncus with a long slender hook. No gnathos. Valva with a separate costa which is sclerotized, triangularly dilated in middle, ending in an acute free projection; cucullus digitoid, with somewhat dilated base; sacculus rather broad, with angulate top. Vinculum short. Aedoeagus short, rather thick, tubular. (Slide no. 1080 D, type.)

Letterbox Camp, 3600 m, August 30, 1938. Two specimens.

Ochromolopis bidentata spec. nov. (fig. 809, 810)

♂ 19 mm. Head whitish tinged pale ochreous, sides of vertex slightly suffused with pale fuscous. Antenna pale fuscous, ringed with darker fuscous, cilia whitish. Palpus pale fuscous-ochreous, median segment irrorated with dark fuscous, more so towards apex, terminal segment with a narrow blackish subbasal ring, slightly irrorated with fuscous beyond this. Thorax pale ochreous, tegula moderately suffused with fuscous-ochreous, shoulder dark fuscous, tip whitish. Abdomen pale fuscous-ochreous. Legs: anterior blackish-fuscous, narrow white bands on articulations of segments, and also before apex of tibia; median leg paler, fuscous, with same bands; posterior leg sordid fuscous-ochreous, tibia and tarsal segments suffused with blackish towards base, apical whorls of bristles white. Fore wing narrowly lanceolate, much narrowed at base, base of dorsum rounded and rather projecting, apex acute. White; basal third suffused with pale tawny, this area terminated by a rounded light tawny dot before $^1/_4$ of costa and a transverse suffusion of the same colour below and beyond this; a streak of tawny-fulvous suffusion along central third of costa, reaching across one third of wing, lower edge lined with brown; an undulate narrowed strongly inwards-oblique tawny-fulvous band from anterior third of costa to $^1/_3$ of dorsum; a broad subtriangular brown projection from lower edge of posterior part of costal streak, its top connected with a longitudinal light tawny suffusion extending above posterior half of dorsum to tornus, thence extended into a broad transverse patch, slightly narrowed above and reaching costa at $^3/_4$, its posterior half deeper tawny; an ovate rather dark fuscous patch beyond this to before apex extending to margins of wing; an oblique black apical dot. Cilia pale ochreous, along costa opposite subapical patch suffused with fuscous, this suffusion limited by two blackish bars; around apex and opposite upper half of termen irrorated with tawny; suffused subapical greyish bar, irrorated with black; a postmedian line of black irroration from apex to opposite middle of termen; cilia beyond this whitish with a blackish patch opposite apex, another such patch opposite upper third of termen; dorsal cilia with three jet-black somewhat raised tufts of scales: on $^2/_5$ of dorsum, below middle and below $^3/_4$ of dorsum, the last tuft small. Hind wing light leaden-grey, cilia pale golden-ochreous.

Uncus with a shorter hook than in the preceding species. Valva with costa less dilated, hook shorter, somewhat curved; cucullus much shorter and broader; sacculus rounded. Anellus plicate laterally, submembraneous. Aedoeagus longer. Cornutus, a large spike with a bulbate base. (Slide no. 1081 D, type.)

Letterbox Camp, 3600 m, September 3, 1938. One specimen. Allied to the preceding.

PLUTELLIDAE

Key to the Papuan genera of Plutellidae

1. Hind wing with vein 3 absent . . . . . *Dieda* gen. nov.
   Hind wing with vein 3 present 2
2. Antenna thickened with scales towards base . . . . . *Eidophasia* Stephens
   Antenna not thickened 3
3. Fore wing with vein 7 absent; hind wing with veins 3 and 4 nearly parallel . . . . . *Erysimaga* Meyrick
   Fore wing with vein 7 present; hind wing with veins 3 and 4 approximated, connate or stalked 4
4. Fore wing with veins 7 and 8 stalked; scape of antenna with a slight pecten . . . . . *Niphodidactis* Meyrick
   Fore wing with veins 7 and 8 separate; scape of antenna with eyecap or flap of scales 5
5. Median segment of palpus smooth; scape of antenna with eyecap . . . . . *Scaeophanes* Meyrick
   Median segment of palpus with a tuft beneath; scape with a flap of scales . . . . . *Plutella* Schranck

Eidophasia Stephens, 1842

Eidophasia Stephens, 1842, Ill. Brit. Ent. Suppl., p. 418. Meyrick, Lepid. Catal., fasc. 19, p. 48, 1914. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 74, 1929.

Eidophasia peristigma spec. nov. (fig. 814)

περί = throughout, *στίγμα* = a dot

♂ 17 mm. Head and antenna white, flagellum of the latter indistinctly ringed with fuscous along anterior half, towards base moderately thickened with white scales above, scape in front with a large flap of white scales with infuscated tips. Palpus white, slightly infuscated along anterior edge. Thorax sorded white, edged throughout with a narrow blackish-fuscous suffusion, forming more or less distinct marginal dots, a faint median blackish-fuscous streak anteriorly, tegula white, shoulder blackish. Abdomen whitish. Legs whitish, densely suffused with dark fuscous, except on articulations of segments, posterior leg creamy-white, not suffused. Fore wing elongate-ovate, costa curved, more so towards extremities, apex pointed, termen rounded, oblique. White, slightly suffused throughout with pale ochreous-fuscous. A rather broad longitudinal streak of cloudy grey suffusion from base of costa towards fold beyond base, thence tolerably parallel to dorsal edge, limited below by fold; beyond lower angle of cell this streak dissolved into grey irroration which does not reach tornus; other markings formed by small blackish transversely erect dots: a rather indistinct costal row terminating in two to three larger transverse marks at about $^3/_4$, a subcostal row reaching to middle of wing, some two more longitudinal rows in disc beyond middle, followed by a denser irroration and a slight fuscous suffusion beyond cell,

occupying about the third fourth of disc from below costa to above middle; a few dots scattered between this and tornus; a row of larger and darker subtriangular dots along dorsum from beyond base to before end of cell; a row of such dots along termen from tornus, interneural, terminating in a larger apical black spot. Cilia white, a subapical row of some four to five distant small dots. Hind wing pale grey, cilia whitish.

Tegumen membranous. Uncus absent. Gnathos (?) two transverse bristly lobes touching each other ventrally. Anus large. Valva elongate-ovate, slightly sinuate. Vinculum strong, broad, with long saccus. Anellus lobes short, truncate. Aedoeagus long, straight. (Slide no. 1098 D, type.)

Letterbox Camp, 3600 m, August 30, 1938. One specimen.

Dieda gen. nov. (fig. 813)

$\delta\iota\alpha$ = apart, $\varepsilon\tilde{\iota}\delta o\varsigma$ = shape

Head smooth. Ocellus posterior. Proboscis developed. Antenna $^2/_3$, in male pubescent, scape moderate, with a large flap of scales anteriorly. Labial palpus curved, ascending, basal segment with a rough projecting hair-brush beneath, median segment smooth, slender, rather long (terminal

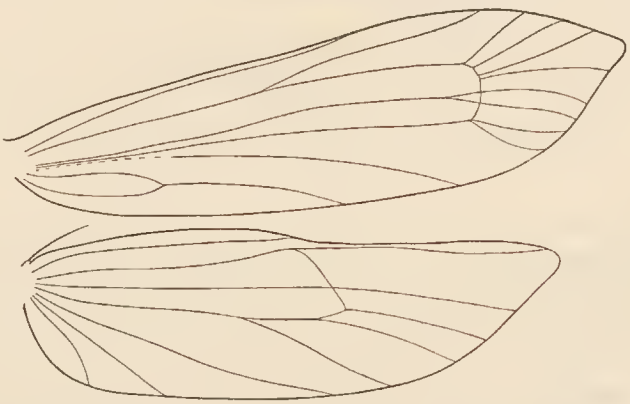


Fig. 813: *Dieda scuticornis* gen. nov., spec. nov., female, head and wing neuration.

segment missing). Maxillary palpus absent. Thorax without crest. Anterior and median legs normal (posterior legs missing). Fore wing elongate, gradually dilated, moderately pointed; 1b furcate, 2 and 3 closely approximated from angle, 2 weak, 4 absent, 5 and 6 somewhat converging with 3 towards margin of wing, diverging from 7 which is separate, to termen, 8—10 approximated from upper angle of cell, 11 from somewhat beyond middle, indication of a pleurostigma above this vein, no accessory cell, parting vein present, furcate, weak. Hind wing 1, elongate-semiovate, cilia 1; 2 from $^3/_4$, 3 from angle, 4 from angular projection of discoidal vein, remote and parallel to 5 which is median, 6 absent, 7 widely remote, discoidal inwardly oblique between 5—7, a strong parting vein from base, terminating in base of 5.

Genotype *Dieda scuticornis* spec. nov., male.

Perhaps correlated with the otherwise isolated *Macarophantha* MEYRICK, from Kashmir, with the neuration perhaps chiefly differing in the interpretation of the absent veins, but also with longer palpi and a large smooth flap of scales on the scape of the antenna. The unique specimen of the present species is in a damaged condition but we describe the genus nevertheless, as the neuration is quite distinct and peculiar.

Dieda scuticornis spec. nov. (fig. 813)

♂ 13 mm. Head, palpus and thorax sordid creamy-white, the latter slightly mixed with pale fuscous anteriorly. Antenna creamy-white, moderately infuscated above. (Abdomen missing.) Anterior leg whitish-fuscous, tibia dark fuscous, tarsus pale-ringed (other legs missing). Fore wing elongate, gradually dilated, broadest at $^4/_5$, thence rather abruptly pointed, posterior $^1/_5$ of costa and termen equally oblique. Creamy-white, slightly suffused with isabel-colour, markings formed by brownish irroration tending to form transverse strigulae; some scattered brown points below costa anteriorly, below fold beyond base, and along fold to beyond its middle; a series of irregular transverse strigulae along dorsum from about $^1/_4$ to tornus; indication of an almost vertical transverse brown fascia at $^3/_4$, formed by a dot below costa and two larger brown spots: above and below cell, respectively; an ill-defined elongate patch of fuscous suffusion in disc above middle, from middle to $^3/_4$ of wing. Cilia (imperfect) creamy, with pale golden gloss. Hind wing thinly scaled, scales hair-like; creamy-isabel, appearing pale bluish between veins by slight opalescence. Cilia pale golden-ochreous.

Mist Camp, 1800 m, January 19, 1939. One specimen.

LYONETIIDAE

Key to the Papuan genera of Lyonetiidae

1. Head roughly or loosely haired or with a tuft on vertex 2
   Head smooth 4
2. Hind wing with reduced neuration: cell obliterate, vein 7 from base to apex, 4 absent, 5 and 6 stalked, out of 7 . . . . . *Orochion* gen. nov.
   Hind wing with normal neuration, vein 4 present, 5 and 6 stalked, out of discoidal vein 3
3. Fore wing with veins 5 and 7 absent. Scape of antenna with a flap of scales forming a small eyecap . . . . . *Dolerothera* MEYRICK
   Fore wing with vein 5 present, 7 absent. Scape of antenna normal . . . . . *Decadarchis* MEYRICK
4. Fore wing with veins 6, 7 and 8 stalked, ... *Opogona* ZELLER .
   Fore wing with all veins separate . . . . . *Asymplecta* MEYRICK

Opogona Zeller, 1853

Opogona Zeller, 1853, Bull. Soc. Ent. Mosc. 26, part 2, no. 4, p. 507, t. 4, ff. 13–16. Spuler, Schmett. Eur., vol. 2, pl 421, 1910. Meyrick, Trans. N. Zeal. Inst., vol. 47, p. 232, 1915. Exot. Micr., vol. 3, p. 398, 1928. Fletcher, Mem. Dept. Agr. Ind., Ent., vol. 11, pp. 153–154, 1929.

Loxostoma Stainton, 1859, Trans. Ent. Soc. Lond. (n. s.) vol. 5, p. 129.

Conchyliospila Wallengren, 1861, Resa Eugenie, Ins., pp. 387–386.

Cachura Walker, 1864, List Lep. Het. Brit. Mus., vol. 30, p. 910.

Deudroneura Walsingham, 1892, Proc. Zool. Soc., vol. 1891, pp. 509–510.

Hieroxestis Meyrick, 1892, Proc. Linn. Soc. N. S. Wales, vol. 17, p. 567.

Key to the Papuan species of *Opogona*

1. Fore wing dark purple or purple-fuscous with a broad reddish-orange or orange transverse fascia 2
   Not thus 3
2. Transverse fascia reddish-orange, from $^1/_6$ to $^1/_2$ . . . . *pyrangela* Meyrick
   Transverse fascia orange, from $^1/_5$ to beyond $^2/_3$ . . . *chrysangela* spec. nov.
3. Purple-fuscous or light fuscous, markings orange-yellow or whitish-yellow 4
   Pale fuscous-golden or yellow with fuscous markings 5
4. An elongate orange-yellow spot at $^1/_3$ of costa . . . . *trichoceros* Meyrick
   A triangular whitish patch on middle of costa . . . . *salpictes* spec. nov.
5. Greenish-yellow; apical third brownish, edged by a blackish-brown line followed by blue-metallic scales; apparently no dark spot at base of costa [1] . . . . . *autophyta* Meyrick
   Not thus 6
6. Ground colour pale fuscous-golden, pale tawny-golden or light tawny; markings, if present, dark fuscous, suffused 7
   Ground colour sulphur-yellow or pale yellow 10
7. Pale fuscous-golden with dark fuscous markings; larger species: 18–23 mm 8
   Pale tawny-golden or light tawny without any markings; smaller species 8–13 mm 9
8. A basal patch, an inwardly oblique interrupted postmedian transverse fascia, and a marginal line along termen and in apex . . *nephelodesma* spec. nov.
   A streak on base of costa and a discal suffusion forming several longitudinal streaks posteriorly which run to termen . . . . . *perisema* spec. nov.
9. Head with vertex light tawny; larger species: 13 mm *chrysocapna* spec. nov.
   Head whitish-golden; smaller species: 8 mm. . . . . *subtilis* spec. nov.
10. Dark mark at base of costa wedge-shaped, transverse, reaching below middle of disc . . . . . *taochroa* Meyrick
    Dark mark at base of costa longitudinal 11
11. Ground colour sulphur-yellow . . . . . *saccharella* Swezey
    Ground colour pale yellow, scattered with fuscous scales *melanopasta* spec. nov.

Opogona chrysangela spec. nov. (figs. 820, 821)

χρυσός = gold, ἄγγελος = angel

♀ 18 mm. Head and fillet above shining dark fuscous, fillet below and face shining pale ochreous. Antenna shining dark fuscous, apical half of

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[1] It is possible that the dark spot on base of costa is simply omitted from Pagenstecher's brief description of this species (= *O. fumiceps* Pagenstecher, *nec* Felder, *Zoologica*, vol. 29, p. 237, 1900).

flagellum pale ochreous. Palpus pale ochreous-greyish. Thorax shining dark fuscous, becoming paler posteriorly, apical third yellow. Abdomen light ochreous-yellow, sides infuscated, venter pale ochreous. Legs shining pale ochreous tinged greyish; coxae strongly flattened and dilated, with a smooth fringe of scales; femora moderately flattened; median and posterior tibia and tarsus broadly banded with light violet-purple; anterior tibia and tarsus short-bristled, median tibia with strong brownish bristles above, tarsus thickened with dense fine appressed bristles; posterior tibia with long stiff ochreous bristles above, tarsus with whorls of spreading bristles at apices of segments, spurs short-bristled. Fore wing moderately broad, costa almost straight, apex pointed, not produced, termen little rounded, very oblique, tornus indefinite, dorsum sinuate anteriorly. Glossy dark fuscous-purple, base paler fuscous; a broad transverse deep orange-yellow band, extending along costa from before $^1/_4$ to about $^4/_5$, along dorsum from $^1/_3$ to where cilia begin, its anterior edge somewhat irregular, concave, slightly inwardly oblique, posterior edge more irregular, angularly projecting above middle, more oblique below angulation than above this. Cilia purplish-fuscous, becoming sordid ochreous-fuscous towards tips. Hind wing glossy bright orange-yellow, posterior fourth purple, edge of this colour concave, suffused, tolerably vertical; anterior half of costa as far as middle of disc glossy pale ochreous. Cilia along anterior half of costa pale ochreous, along posterior half and opposite purple apical area fuscous with pale ochreous tips, along $^3/_4$ of dorsum deep orange-ochreous.

Ostium small, an erect weak clavate plate at each side of it, bristled above. Limen, a small blunt rising projection, bristled at apex. Genital segment sclerotized. Ductus bursae long, minutely denticulate throughout, a small sclerotized semioval piece at entrance of bursa copulatrix which is ovoid, covered throughout with short round hyaline spikes. (Slide no. 1089 D, type.)

Bernhard Camp, 50 m, October 7, 1938. One specimen. Nearest to *O. pyrangela* Meyrick.

Opogona melanopasta spec. nov. (figs. 822, 823)

μέλας = dark, *παστός* = strewn

♀ 13 mm. Head, scape of antenna above, palpus and thorax fuscous-grey, fillet below, face, scape of antenna below and flagellum glossy ochreous-whitish. Abdomen sordid whitish-ochreous. Legs whitish-ochreous, more or less infuscated above, except posterior leg; posterior tibia with sparse long hairs above, spurs slightly thickened with minute appressed bristles (posterior tarsi missing). Fore wing lanceolate, rather small, costa gently curved throughout, apex pointed, not produced, termen little rounded, extremely oblique, tarsus indefinite. Pale yellow, scattered with coarse dark fuscous scales tending to form irregular dots posteriorly; a

longitudinal greyish-fuscous spot occupying less than basal fifth of costa, edge well-defined, anterior half with an invert-trapezoid dilatation reaching to base of fold, beyond this edge horizontal, posterior margin inwardly oblique, somewhat irregular; apical and terminal fifth of wing fuscous-purple with bluish gloss, with edge running from beyond $^4/_5$ of costa to dorsum before end of fold, bluntly projecting in middle, preceded by dark fuscous irroration which forms denser, inwardly oblique transverse patches: along upper third of this edge and across purple area before its anterior extremity; this extremity preceded by a small dorsal dot of blackish-fuscous scales; purple area obscured by dull fuscous suffusion along costa, in apex and along termen, extending opposite middle of the latter so as to occupy about the middle third of the purple area. Cilia pale fuscous, a group of dark fuscous scales on basal half opposite middle of termen, another such group, darker and larger, forming a raised tuft on dorsum before end of cilia. Hind wing light greyish-purple, cilia dull pale ochreous-fuscous.

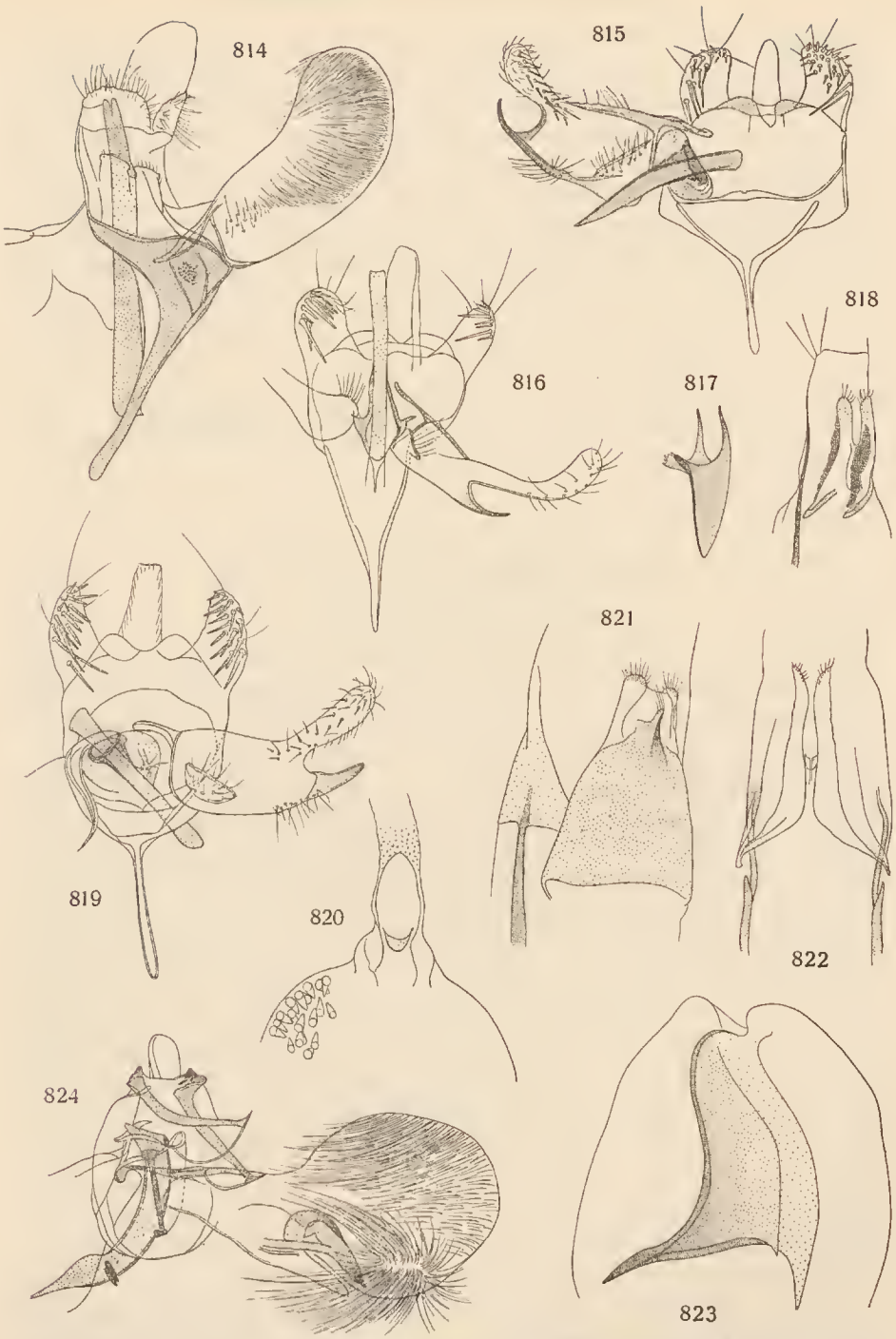
Ostium, a narrow slit at each side supported by a long plate; these plates connected ventrally with each other, each with a long slender projection laterally and a row of minute bristles at the top. Ductus bursae simple. Bursa copulatrix upturned, with emarginate distal extremity, signum a large plate with a sinuate edge and two pointed projections below. (Slide no. 1090 D, type.)

Rattan Camp, 1200 m, March 4, 1939. One specimen. Nearest to *O. glaphyra* Diakonoff, 1948, from Buru, differing by the narrower wing, the paler ground colour and by the absence of a dark fuscous transverse line at three-fourths of the fore wing.

Opogona nephelodesma spec. nov. (fig. 819)

νεφέλη = cloud, *δεσμός* = band

♂ 18 mm. Head pale fuscous, vertex fuscous, face fuscous-whitish, no fillet, a smooth flap of scales over frons and face, making the former somewhat prominent. Antenna fuscous, scape elongate, pale straw-fuscous. Palpus moderately long, little curved, median segment blackish-fuscous, terminal under 1, pale fuscous mixed with darker. Thorax pale straw-colour, anteriorly and on shoulder fuscous. Abdomen pale straw-colour. Legs pale ochreous-fuscous, anterior leg suffused with dark fuscous, posterior tibia with long fine appressed hairs above, projecting in a pencil beyond apex, shorter fine hairs below between pairs of spurs which are covered with fine appressed bristly hairs, tarsus bristly below. Fore wing ovate-lanceolate, costa gently curved, more so towards extremities, apex acute, moderately produced. Pale golden-straw-colour, faintly glossy; markings brownish-fuscous, suffused. A moderate, much suffused fuscous basal patch, edge indefinite, on dorsum slightly extended posteriorly, on costa with a suffused blackish-fuscous attenuated streak; an inwardly



Genitalia of Plutellidae and Lyonetiidae. Fig. 814: *Eidophasia peristigma* spec. nov., male. Fig. 815: *Opogona perisema* spec. nov., male. Fig. 816: *O. salpictes* spec. nov., male. Fig. 817: *O. subtilis* spec. nov., signum. Fig. 818: *idem*, female. Fig. 819: *O. nephelodesma* spec. nov., male. Fig. 820: *O. chrysangela* spec. nov., female. Fig. 821: *idem*, upper part of bursa copulatrix. Fig. 822: *O. melanopasta* spec. nov., female. Fig. 823: *idem*, bursa copulatrix. Fig. 824: *Asymplecta phorbiophora* spec. nov., male.

oblique transverse band from $^3/_5$ of costa to dorsum before middle of wing, formed by three interconnected rather irregular subquadrate spots, downward becoming smaller in size; a rather irregular marginal streak from costa before apex, around apex and along termen to tornus, its tornal extremity continued as an attenuated short slender subdorsal streak to about $^2/_3$ of wing length; some scattered pale brownish-fuscous scales in middle of disc before fascia, denser and occupying entire breadth of wing beyond it, both tending to form longitudinal strigulation. Cilia pale straw-colour. Hind wing pale golden-fuscous, cilia pale straw-colour.

Lobes of uncus broad, gradually rounded. Valva narrow, short, cucullus long, curved, slightly clavate, $1^1/_2 \times$ as long as disc of valva; sacculus over $^1/_2$, with a short, curved hook; harpe short, strongly raised. Saccus erect-triangular, long. Anellus strong. Aedoeagus moderately long. (Slide no. 1091 D, type.)

Scree Valley Camp, 3800 m, September 19, 1938. Two specimens.

Opogona perisema spec. nov. (fig. 815)

περί = around, *σῆμα* = mark

♂ 22—23 mm. Head shining ochreous-white, a smooth flap of scales over vertex and face, no fillet. Antenna pale ochreous, scape elongate, ochreous-whitish above, fuscous below. Palpus moderately long, glossy pale ochreous, median segment dark fuscous above or fuscous throughout, slightly tufted at apex below, terminal segment $^2/_3$, sometimes infuscated. Thorax pale glossy straw-ochreous, basal half of tegula dark fuscous. Abdomen glossy ochreous-whitish. Legs pale golden-ochreous, anterior leg suffused with dark fuscous, posterior tibia with fine dense hairs above and beneath along basal half of distance between pairs of spurs, tarsus bristly below. Fore wing very pale straw-colour with strong golden gloss, markings bronze-tawny with a faint purplish tinge. A bronze-fuscous attenuated and suffused streak along basal fifth of costa, sometimes broader, elongate-semiovate, and more greyish-fuscous tinged; an elongate, suffused spot on dorsum at $^2/_5$ of wing, in dark specimens connected with preceding beyond base of wing by a bronze-tawny irroration; two ill-defined longitudinal irrorated streaks in disc above and below middle converging at $^1/_4$ of wing, lower one continued along termen to apex, narrowed along posterior fifth of termen, thence as a short narrow projection along costa; this streak is dilated along lower $^2/_3$ of termen and bears there three parallel, outwardly oblique elongate transverse blotches of ground colour resting on termen, sometimes indistinct; upper longitudinal streak gradually curved downward and merging into preceding beyond cell (sometimes this longitudinal streak entirely absent). Cilia sordid straw-colour, along base straw-whitish. Hind wing light fuscous-golden, apex and an ill-defined narrow streak along upper part of termen golden-whitish. Cilia pale ochreous-tawny.

Lobes of uncus broad, with obliquely rounded tops, beset with strong bristles. No gnathos. Anal tube weak, long. Saccus slender, moderate. Valva rather short, slightly narrowed, cucullus separate, clavate; sacculus not defined at base, ending in a long curved slender spike; harpe, a transverse oblique bristled ridge. Anellus, a conical tube, minutely dentate. Aedoeagus moderate, slightly bent, pointed. (Slide no. 1087 D, holotype.)

Letterbox Camp, 3600 m, September 8, 1938 (holotype), Scree Valley Camp, 3800 m, November 19—26, 1938. Four specimens. Closely allied to the preceding.

Opogona salpictes spec. nov. (figs. 816, 826, 827)

σαλπιχτής = trumpeter

♂ 9 mm, ♀ 11 mm. Head purplish-fuscous, fillet and face shining whitish. Antenna ochreous-whitish. Palpus sordid light fuscous. Thorax pale golden-yellow, anteriorly edged with purplish-fuscous. Abdomen pale golden-ochreous. Legs glossy ochreous-whitish, posterior tibia clothed with very long fine appressed hairs, forming a long pencil at apex. Fore wing lanceolate, costa moderately curved, apex acute, not produced, termen slightly rounded, extremely oblique. Light fuscous-purple, slightly mixed with dark fuscous scales; base of costa suffused with dark fuscous; markings whitish-yellow, with a golden gloss: a broad patch along dorsum reaching to middle of wing length, at base occupying more than half of wing breadth, moderately attenuated posteriorly, connected with top of an elongate-triangular patch, base of which occupies median third of costa; this patch is edged anteriorly in and above middle of disc by an irroration of blackish-fuscous scales and posteriorly by a single minute blackish-fuscous point below middle and a few fuscous scales on costa. Cilia glossy yellowish-whitish, appearing pale fuscous in certain lights. Hind wing pale fuscous with a faint purplish gloss, cilia as in fore wing.

Male genitalia very much resembling those of the preceding species. Lobes of uncus somewhat less rounded. Anus more sclerotised. Valva with a less thickened cucullus, sacculus with a shorter, less pointed projection, harpe shorter. Saccus longer. Aedoeagus not pointed. (Slide no. 1084 D, holotype.)

Ostium moderate, cup-shaped, two obliquely rounded lobes above ostium, with constricted bases and bristly tops. Limen, an erect-ovate plate covering ostium. Ductus bursae somewhat sclerotized above and forming a moderate colliculum. Bursa copulatrix weak. Signum large, semilunar, with two acute horns at each extremity and two curved arms in middle. (Slide no. 1082 D, allotype.)

Top Camp, 2100 m, January 24, 1939 (holotype, male), January 21, 1939 (allotype, female). Two specimens, female rather damaged.

Opogona chrysocapna spec. nov. (figs. 828, 829)

χρυσός = gold, καπνός = smoke

♀ 13 mm. Head and thorax light tawny, broad fillet between antenna with a golden shine, face shining creamy-golden. Antenna pale ochreous, becoming tawny towards base, scape fuscous below. Abdomen fuscous-whitish, suffused with darker fuscous on dorsum. Legs whitish-fuscous, glossy, posterior leg suffused with tawny above, tibia with long fine appressed hairs projecting in a pencil beyond apex, tibia clothed with fine appressed bristly scales. Fore wing ovate-lanceolate, narrowed, apex acute. Light tawny with faint brassy tinge, posterior part finely suffused with rather light smoky grey, with a faint purplish gloss, ill-defined edge of this suffusion running parallel to fold well beyond it, i.e., from base of costa to about tornus. Cilia light sandy-fuscous. Hind wing glossy, rather deep brassy-golden, becoming pale towards base, cilia fuscous-ochreous.

Limen subtubular, covering ostium which is flanked by two erect plates, not dilated at the top. Ductus bursae simple. Signum long, dilated, trumpet-like, open at one side. (Slide no. 1088 D, type.)

Mist Camp, 1800 m, September 28, 1938. One specimen.

Opogona subtilis spec. nov. (figs. 817, 818)

♀ 8 mm. Head, antenna, palpus, thorax whitish-golden, fillet of vertex with golden shine. Abdomen pale grey with golden gloss. Legs pale ochreous, posterior tibia with long fine subappressed hairs above. Fore wing lanceolate, acutely pointed, costa gradually but moderately curved. Pale tawny-golden with faint purplish gloss in certain lights; base of costal edge with a fine fuscous streak. Cilia concolorous. Hind wing very pale fuscous with golden gloss. Cilia rather dull, pale fuscous.

Ostium, a narrow split, an erect plate at each side, bristled apically, ventrite below ostium with reticulate surface. Ductus bursae simple. Signum, a concave elongate plate, with one extremity pointed, other forming two straight acute horns and a median thick projection perpendicular to these. (Slide no. 1092 D, type.)

Rattan Camp, 1200 m, February 4, 1939. One specimen.

Asymplecta Meyrick, 1921

Asymplecta Meyrick, 1921, Zool. Meded. Mus. Leiden, vol. 6, pp. 193—194. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 26, 1929.

Pycnobela Turner, 1923, Trans. Roy. Soc. South Austral., vol. 47, pp. 182—183.

Asymplecta phorbiophora spec. nov. (fig. 824)

φορβειά = halter, *φέρω* = to wear

♂ 14 mm. Head with vertex fuscous-grey, orbits narrowly edged with white, frons and face shining white. Antenna fuscous-grey above, banded with white below, scape white, a dorsal streak and a subapical ring dark grey. Palpus with median segment rather long, terminal segment distinctly under 1; white, dorsum of median and terminal segments with a dilated black streak from beyond base, terminal segment with anterior fringe of scales slightly mixed with fuscous. Thorax fuscous-grey with golden gloss, a broad suffused transverse anterior band extending over tegulae, extreme anterior edge and shoulder suffused with blackish. Abdomen fuscous, posterior halves of segments whitish-fuscous, venter whitish, anal tuft pale grey-fuscous. Legs whitish, anterior tibia and tarsus blackish, segments with narrow white apical rings, posterior tibia with long rough projecting bristly hairs above, short hairs beneath. Fore wing rather narrow, elongate-ovate, pointed, costa moderately curved, termen gently rounded, extremely oblique. Fuscous-grey with bright golden gloss; a whitish costal streak from base to apex, gradually moderately dilated towards base, so as to occupy one fourth of wing breadth there, narrowest at $^3/_5$, gradually dilated again towards apex and extending over upper fourth of termen; this streak bears three small fuscous marks along extremities of veins 10—8, a faint longitudinal mark before these and a short marginal dark fuscous streak on termen below apex; base of costal edge suffused with dark grey. Cilia (imperfect) white, along lower half of termen and in tornus pale grey. Hind wing whitish suffused with fuscous-brassy-bronze, veins darker, apical third purplish-tinged. Cilia glossy fuscous with an indication of paler bars along termen.

Tegumen and saccus forming a ring together, saccus broadly rounded. Uncus absent. Gnathos paired, each arm a strong narrowed porrect rod supporting a membraneous, semicircular pending plate, base of each arm dilated and articulating with a strong bristly knob at top of tegumen. Anal tube wide. Valva large, narrowed towards base, cucullus circular, covered with fine bristles, forming a thicker patch towards dorsal edge, sacculus separate posteriorly, harpe, a strong sclerotization opposite top of sacculus. Anellus elongate, caulis shaped like a strong and long rod. Aedoeagus strong, curved, cuspidate. Cornuti, two moderate spikes. (Slide no. 1083 D, type.)

Sigi Camp, 1500 m, February 27, 1939. One specimen. Closely allied to *A. circumflua* Meyrick, from Java, differing chiefly in the presence of a transverse white band on the thorax and by the larger size.

Orochion gen. nov. (fig. 825)

ὄρος = mountain, χιών = snow

Head smooth, vertex with a rough erect tuft between antennae. Ocellus absent. Proboscis short. Antenna $^{5}/_{6}$, filiform, scape strongly dilated with scales, so as to form a short, broad eyecap. Labial palpus moderate, porrect or drooping, median segment moderately thickened towards apex

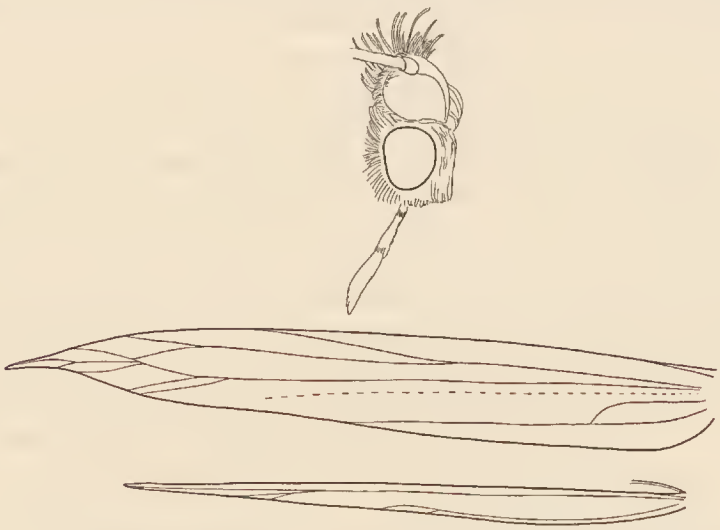


Fig. 825: *Orochion undulosa* gen. nov., spec. nov., female, head and wing neuration.

with scales somewhat roughish above and beneath, terminal segment 1, moderately thickened, smooth, subobtuse. Maxillary palpus vestigial. Posterior tibia with bristly projecting scales above, forming a small tuft at apex, first and second basal segments of posterior tarsus with a small whorl of blackish bristles. Fore wing without tufts of raised scales, lanceolate, apex narrowly produced. 1b long-furcate, 2 from angle, 4 vestigial (basal stump perceptible), 5 approximated to 6 at abse, convergent posteriorly, 6 to termen, 7 out of 6, to apex, 8 absent, 9 approximated, 11 from slightly before middle. Hind wing $^{1}/_{3}$, linear-lanceolate, cilia 7; one strong anal vein furcate at base; 2 long, close to margin, 4 absent, cell open between 3 and 5, 5 and 6 stalked, stalk apparently out of 7, 6 to termen, 7 running from base to apex, 8 short.

Genotype *Orochion undulosa* spec. nov., female.

Belongs to the *Bedellia* group, and characteristic by a strong reduction of the veins in the hind wing, contrasted by only a moderate reduction of the veins in the fore wing. The neuration in the hind wing reminds of that in the Douglasiidae, but there is no actual relationship with that family.

Key to the species of *Orochion*

1. White with golden-fuscous markings . . . . . *undulosa* spec.nov.
   Fuscous-golden-tawny with white markings . . . . . *sororcula* spec. nov.

Orochion undulosa spec. nov. (figs. 825, 830, 831)

♀ 9—11 mm. Head snow-white, tuft on vertex mixed with fuscous, face shining fuscous-whitish. Antenna whitish becoming fuscous on posterior half, eyecap snow-white. Palpus greyish-white. Thorax white, a narrow longitudinal median bronze-fuscous line; somewhat suffused similar lines, just at the border of tegulae, minute. Abdomen and legs whitish, tarsi with basal halves of segments greyish, anterior leg rather infuscated throughout. Fore wing narrowly lanceolate, apex produced, narrow, acute, somewhat curved downward, termen extremely oblique, appearing sinuate. Snow-white, markings tawny-fuscous with golden-coppery shine. A narrow suffused streak along basal third of costal edge; from beyond this to beyond $^2/_3$ of costa five outwardly oblique tolerably equidistant transverse streaks becoming longer posteriorly, fourth reaching to middle of disc; fifth streak merging in a moderate transverse direct band beyond $^3/_4$ reaching to termen, followed by a narrower transverse band of white ground colour; apical area and cilia beyond this transverse band pale bronze with three transverse white fasciae extending over cilia, ultimate fascia broad, including a well-defined, jet-black, round dot in apex; dorsal markings much darker than costal: four irregular, elongate, inwardly oblique marks in the horizontal series above dorsum, well or not touching it, from beyond base to slightly beyond middle of wing; ultimate pair of these marks sometimes interconnected, so as to form a prostrate-S-shaped mark, with posterior extremity erect, so as to form a well-defined, strongly inwardly oblique slender transverse mark, reaching to apex of third costal streak and forming together with this a strongly angulate transverse fascia. Both dorsal and especially costal markings sometimes ill-defined or almost obsolete. Cilia around apical fifth as described, along dorsum whitish. Hind wing whitish-grey, cilia whitish.

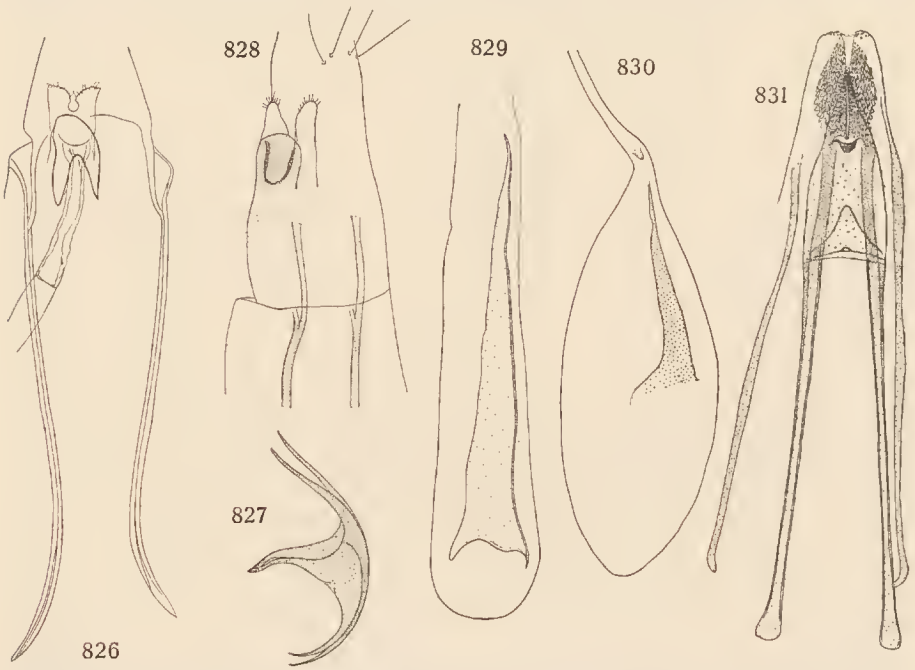
Ovipositor adopted for cutting or boring purposes: lobes naked, strong, on inner surface dentate; anapophyses, strong rods, united, so as to form a cuspidate process ventral of ovipositor lobes. Limen, a weak triangular plate with acute top. Ductus bursae with a small invert-conical plate at base. Signa, two long concave bands gradually dilated distad. (Slide no. 1093 D, holotype.)

Scree Valley Camp, 3800 m, September 22, 1938 (holotype, paratypes). Letterbox Camp, 3600 m, August 30, 1938 (paratype). Five specimens.

Orochion sororcula spec. nov.

♀ 13 mm. Head whitish (partially denuded). Antenna bronzy-grey, scape white. Palpus pale fuscous. Thorax (imperfect) pale fuscous, mixed with white, tegula white. (Abdomen missing.) Legs pale fuscous, posterior tibia pale ochreous with a yellowish postmedian band, tarsus pale fuscous, articulations darker ringed. Fore wing narrowly lanceolate, apex produced,

slightly arcuate, termen appearing sinuate. Pale fuscous with a golden shine, irrorated with blackish-fuscous, posteriorly suffused with tawny-bronze, markings white. Three wedge-shaped costal spots: at $^1/_4$, before $^1/_2$ and before $^2/_3$, respectively; a dorsal patch at $^1/_4$, rather large, erect-semiovate, slightly inwards-oblique, together with the first costal spot



Genitalia of Lyonetiidae. Fig. 826: *Opogona salpictes* spec. nov., female. Fig. 827: *idem*, signum. Fig. 828: *Opogona chrysocapna* spec. nov., female. Fig. 829: *idem*, bursa copulatrix. Fig. 830: *Orochion undulosa* spec. nov., bursa copulatrix. Fig. 831: *idem*, ovipositor.

edged anteriorly by an ill-defined, direct, transverse blackish suffusion; a larger, semiovate patch on middle of dorsum, with top narrowly extended posteriorly across wing and connected with top of third costal spot, so as to form an angulate transverse band, slightly edged anteriorly with a blackish-fuscous irroration; a white direct transverse fascia at $^4/_5$, narrow above, triangularly dilated below, interrupted in middle by a triangular blackish-fuscous spot with top directed apicad, base slightly extended, so as to form a minute dark edge to white fascia; three white transverse lines on costa from beyond preceding to before apex, first vertical, each following more inwardly oblique, all more obliquely extended over costal cilia; a blackish-fuscous dot in apex. Cilia tawny-golden along costa, fuscous mixed with white and with darker tips along termen, whitish-fuscous along dorsum. Hind wing whitish, cilia whitish-fuscous, tinged pale ochreous.

Scree Valley Camp, 3800 m, September 22, 1938. One specimen. Allied to the preceding.

TINEIDAE

Key to the Papuan genera of Tineidae

1. Maxillary palpus several-jointed, folded 2
   Maxillary palpus not folded, or absent 9
2. Maxillary palpus loosely long-ciliate, moderately thickened, apical segments porrect . . . . . *Tinissa* WALKER
   Maxillary palpus not ciliate, filiform 3
3. Labial palpus with rough projecting hairs beneath throughout; diurnal moths, mostly with orange markings . . . . . *Coryptilum* ZELLER
   Not thus 4
4. Labial palpus long, curved, ascending, median segment with a tuft of rough projecting scales beneath 5
   Labial palpus sometimes loosely scaled but not tufted beneath 6
5. Fore wing with vein 7 to apex; posterior tibia hairy above . . *Scardia* TREITSCHKE
   Fore wing with vein 7 to termen; posterior tibia smooth . . *Sematoplusia* gen. nov.
6. Scape of antenna with pecten 7
   Scape of antenna without pecten 8
7. Fore wing with a naked depression in end of cell . . . *Monopis* HÜBNER
   Fore wing without such depression . . . . . *Crypsitricha* MEYRICK
8. Antenna $^5/_6$; labial palpus obtuse; hind wing with vein 3 present . . . . . *Tinea* LINNÉ
   Antenna 1; labial palpus pointed; hind wing with vein 3 absent . . . . . *Neophylacella* FLETCHER
9. Posterior tibia and basal segment of tarsus exceptionally long, anterior tibiae with apical spines . . . . . *Gerontha* WALKER
   Posterior legs normal or, if long, then anterior tibiae without apical spines 10
10. Terminal segment of palpus 1, penicillate with equally long rough scales, fore wing with vein 6 absent. . . . . *Tyrsochares* MEYRICK
    Not thus 11
11. Fore wing with vein 7 to costa 12
    Fore wing with vein 7 to apex or termen 19
12. Labial palpus with terminal segment 1, broad, strongly compressed laterally, furrowed, obtuse . . . . . *Cyathaula* MEYRICK
    Labial palpus with terminal segment not thus modified 13
13. Labial palpus short; antenna in both sexes with small whorls of scales, also short-scaled above throughout . . . . . *Apoecis* gen. nov.
    Labial palpus moderate or long; antenna not scaled 14
14. Fore wing with veins 7 and 8 stalked; antenna bipectinated, dentate or serrulate 15
    Fore wing with veins 7 and 8 separate; antenna ciliate, sometimes fasciculate-ciliate 17
15. Hind wing with costa narrowly folded over on basal half; antenna short-bipectinated along basal half . . . . . *Ptychoxena* MEYRICK
    Not thus 16
16. Hind wing with veins 3 and 4 connate . . . . . *Heloscopa* gen. nov.
    Hind wing with veins 3 and 4 remote . . . . . *Micrerethista* MEYRICK
17. Hind wing with veins 5 and 6 connate . . . . . *Lophosetia* FLETCHER
    Hind wing with all veins separate 18
18. Antenna with scape pectinate; labial palpus porrect; hind wing with veins 5 and 6 nearly parallel . . . . . *Narycia* STEPHENS
    Antenna with scape not pectinate; labial palpus curved, ascending; hind wing with veins 5 and 6 approximated towards base . . . . *Hyalaula* gen. nov.

19. Head tolerably smooth; fore wing with veins 2 and 3 stalked . . . . . *Trachycentra* Meyrick
Head with appressed scales or rough; fore wing with veins 2 and 3 separate 20
20. Fore wing with vein 7 to apex . . . . . *Myrmecozela* Zeller
Fore wing with vein 7 to termen 21
21. Scape of antenna with a flap of dense scales projecting anteriorly . . . . . *Themeliotis* Meyrick
Scape of antenna without such flap 22
22. Scape of antenna with pecten . . . . . *Endothetis* Meyrick
Scape of antenna without pecten . . . . . *Holacarta* Meyrick

Hyalaula gen. nov. (fig. 832)

ὕαλος = glass, ἄυλος = incorporeal

Head and face with short, rough hairs. Ocellus absent. Proboscis absent. Antenna over $^1/_2$, in male filiform, ciliated throughout, ciliations $1^1/_2$, scape rather short, moderately thickened, without pecten. Labial palpus moderately long, curved, ascending, basal and median segments with a fringe of

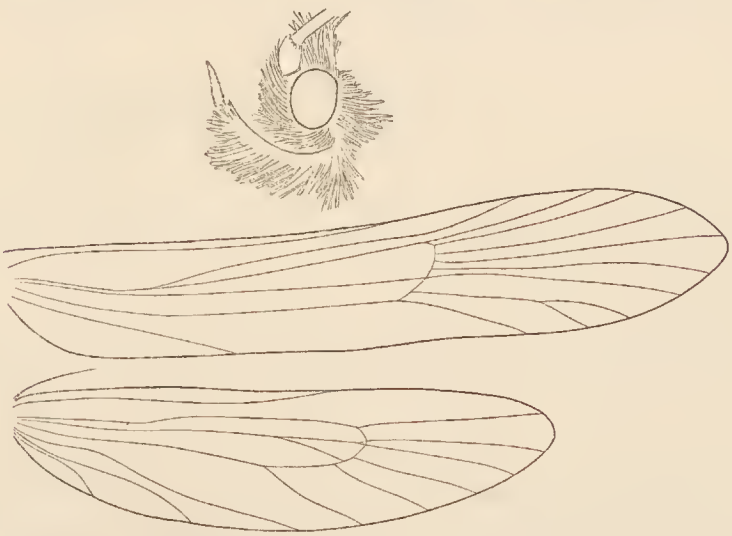


Fig. 832: *Hyalaula apatelia* gen. nov., spec. nov., male, head, and wing neuration.

rough projecting scales below throughout, smooth above, median segment reaching base of antenna, with a few appressed lateral bristles towards apex, terminal segment over $^1/_3$, thickened, smooth, pointed. Maxillary palpus absent. Thorax strong, strongly projecting beyond bases of fore wings, not crested. Abdomen slender, long. Legs long, anterior femur with a fringe of hairs below, median femur less distinctly fringed, posterior femur smooth, posterior tibia very long, with sparse projecting fine hairs above and beneath, tarsus as long as tibia, slender, smooth. Fore wing obtusely lanceolate, narrow, partially hyaline, no accessory cell, parting vein present, 1b short-furcate, 2 from angle, 3 and 4 long-stalked, 5, 6, 7

approximated, 7 separate, to costa, 9 out of upper angle of cell, 10 closely approximated, 11 from $^1/_3$, upper edge of cell impressed at $^1/_3$. Hind wing 1, elongate-ovate, hyaline, cilia $^1/_3$; 2 from beyond $^3/_4$, 3 from angle (angle ill-defined), 4 remote, tolerably parallel to 5, 5 and 6 approximated at base, 7 remote, parallel, 8 free, median stem perceptible throughout, furcate posteriorly, upper fork short-furcate again, branches to bases of 5 and 6, respectively, lower branch to between 3 and 4.

Genotype *Hyalaula apatelia* spec. nov., male.

A curious genus, structurally apparently related to *Gerontha* WALKER, but with a striking aspect of a small Aegeriid. Probably it is a mimic of some Hymenopteron. Outside Aegeriidae such mimics are known also in Heliodinidae and Glyphipterygidae.

Hyalaula apatelia spec. nov. (figs. 832, 833, 834)

ἀπατελιός = deceiving

♂ 18 mm. Head black. Antenna black, scape with a broad apical silvery-white ring. Palpus black, terminal segment slightly mixed with white at base. Thorax black with slight metallic-green gloss. Abdomen black, venter with four basal ventrites white, anal tuft white. Legs black, anterior femur silvery-white outwardly, tarsus white-ringed; median leg with coxa white, tibia with two, tarsal segments each with one (apical) whitish band above; posterior leg with coxa enlarged, white, femur with whitish-green gloss, tibia strongly mixed with whitish-green, hairs whitish, tarsus black. Fore wing dark greenish-grey, irrorated with black, so as to form more or less distinct vertical transverse strigulae, more distinct beyond cell; veins black; costal area black as far as cell and vein 9; a broad slightly outwards-oblique transverse black band out of this area running along closing vein as far as base of vein 5; white, hyaline patches arranged as follows: elongate patch between cell and costa from beyond base to $^1/_3$ of wing; a clavate streak in cell from below posterior extremity of preceding patch to transverse black band; a narrow less distinct streak above lower edge of cell from beyond base to closing vein, separated from preceding by black line along parting vein; an elongate patch between vein 9 and 8 from cell, by far not reaching costa, a small streak between bases of 8 and 7, a semihyaline patch between 5 and stalk of 3 + 4. Cilia black, apical half whitish. Hind wing hyaline with deep purple-blue gloss in certain lights, base with pale green gloss; a black moderate streak along costa, and a black narrow marginal line, except along base of dorsum; veins ochreous, on posterior half of wing narrowly black; some pale green shining scales along vein 1c and below this scattered over dorsal area. Cilia whitish, basal half black except on dorsum, tuft of hairs at base of dorsum pale ochreous.

Tegumen bipartite. Saccus long. Valvae united. (Slide no. 1133 D, type.)

Top Camp, 2100 m, January 26, 1939. One specimen.

Monopis Hübner, 1826

Monopis Hübner, 1826, Verz. bek. Schmett., p. 401. Walsingham, Catal. Lep. Het. Mus. Oxon., p. 577, 1900. Spuler, Schmett. Eur., vol. 2, p. 463, fig. 215, 1910. Meyrick, Rev. Handb., p. 821, 1928. Fletcher, Mem. Agric. Ind., Ent., vol.11, p. 143, 1929. Pierce, Genit. Brit. Tin., pp. 96, 97, pl. 59, 1935.

Blabophanes Zeller, 1852, Linn. Ent., vol. 6, p. 100. Meyrick, Proc. Linn. Soc. N. S. Wales, vol. 8, pp. 526—527, 1892.

Hyalospila Herrich-Schäffer, 1853, Schmett. Eur., vol. 6, Microl., p. v, pl. 10, fig. 14. Etc.

Rhitia Walker, 1864, List Lep. Het. Brit. Mus., vol. 29, p. 818. Etc.

Eusynopa Lower, 1903, Trans. Roy. Soc. S. Austral., vol. 28, p. 237. Etc.

The following four species are represented by female specimens only. It was a great surprise to find the abdomina of all the examined specimens stuffed with developed larvae! Apparently we stumbled — quite incidentally — upon a case of viviparity.

The classical observation of the process of deposition of living larvae in a *Monopis* species, viz., *M. meliorella* Walker, was made by Scott in Australia long ago (*Trans. Ent. Soc. N. S. Wales*, vol. 1, p. 33, pl. 4, 1863). Nobody saw it again since. The anatomy of the female genital apparatus was studied recently and discussed elborately in another place (Diakonoff, *Trans. IXth Intern. Congr. Entom.*, vol. 1, pp. 91—96, 1952). It will be sufficient now to make the following remarks. Kusnezov (1910) once found a developed larva in a dilatation of the oviduct in certain Pieridae of boreal an alpine regions. He ascribed this phenomenon to a possible ovo-viviparity, and surmised that it might be a useful adaptation of the species concerned to the short summer in those barren regions. The present case seems to be that of true ovo-viviparity. Whatever its significance is for the tropical species in question, it must be something else than suggested by Kusnezov.

The material of *Monopis* concerned was collected in lamp traps and the insects were killed at once in bottles with potassium cyanide where they remained for several hours. It is highly improbable that mature eggs inside the insects would outlive this treatment. Afterwards the insects were transferred to paper triangles and at once stored in tins equipped with naphthaline, and also with quicklime, in order to keep the contents entirely dry. In case the eggs did outlive the treatment in killing bottles, their further development under these conditions would be impossible. Therefore we must accept that developed larvae were present inside the abdomen of the mother insect at the time of its capture.

The shape of the female genitalia supports our surmise of viviparity. The ovipositor is of a common tineid type, i.e., slender and extensile, but bears distinct marks of reduction, though not equally far proceeded in all the species concerned. It is still rather long in *M. hypochrysa*, but with lobes devoid of the usual sensile bristles which shows the decadent nature of this organ. The same may be the case in *M. cuspidigera* in which,

unfortunately, the distal part of the ovipositor is missing. In *M. lacticaput* and still more so in *M. victa*, the reduction of this organ is evident: the postapophyses are unusually short for the genus and the lobes with their sensile hairs and bristles are entirely atrophied.

We could find no traces of egg-shells around the larvae; apparently they were resorbed during the larval development.

It would be extremely interesting to observe living insects in the process of the deposition of larvae. There is little chance in near future to lay hands on living material of the Papuan species described below. But more exotic species of this extensive group proved to us to have the same singular biology. As far no deviations from the common oviposition were ever observed in the European species of *Monopis*.

The ostium is little modified and concealed by the limen being a moderate bilobed plate, bristly at the top. The shape of the colliculum provides specific characteristics. Through the mass of the larvae, which we did not remove from the mounts, the shape of the bursa copulatrix and of the signa was not traceable.

The genitalia of the four species described are drawn under an equal magnification.

Key to the Papuan species of *Monopis*

1. Fore wing with veins 7 and 8 stalked 2
   Fore wing with veins 9 and 10 stalked or connate, 7 and 8 separate 3
2. A dorsal and a costal pale yellow spots . . . . . *thiantha* MEYRICK
   A large yellow costal blotch, no dorsal markings . . *trapezantha* MEYRICK
3. Fore wing with veins 2 and 3 out of 4 . . . . . *hypochrysa* spec. nov.
   Fore wing with vein 2 separate 4
4. Fore wing with transverse yellow fasciae: before and beyond middle 5
   Fore wing without a basal or an antemedian fascia, sometimes with a dorsal patch by far not reaching costa 6
5. Head orange-yellow; first transverse fascia antemedian . *crateroxantha* MEYRICK
   Head pale ochreous-yellow; first transverse fascia subbasal . *congestella* WALKER
6. A yellow streak from dorsum beyond base running just below second fourth of costa . . . . . *cuspidigera* spec. nov.
   Costal spots postmedian 7
7. Costal spot pear-shaped . . . . . *ochnodelta* MEYRICK
   Costal spot more or less distinctly triangular or narrowed-trapezoidal 8
8. Head yellow . . . . . *eudochina* MEYRICK
   Head snow-white or sordid white. 9
9. Costal and dorsal spots sharply edged, veins 9 and 10 stalked . . . . . (*trimaculella* SNELLEN)
   Costal and dorsal spots with irregular edges, rather suffused 10
10. Fore wing with the hyaline discal spot distinctly antemedian . . . . . *lacticaput* spec. nov.
    Fore wing with the hyaline spot median . . . . . *victa* spec. nov. .

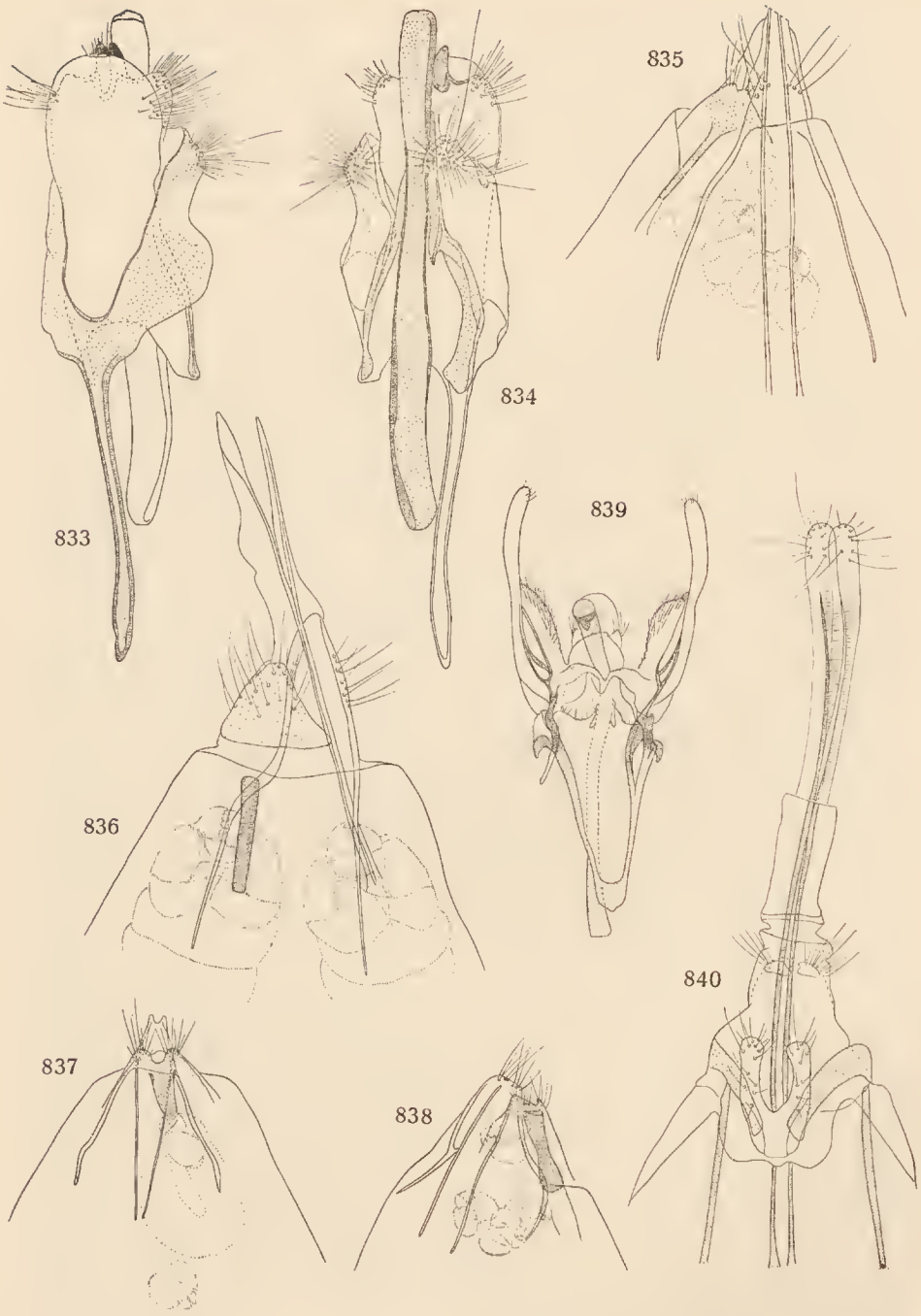
Monopis victa spec. nov. (fig. 838)

♀ 15 mm. Head sordid white. Antenna dark fuscous, scape white. Palpus dark fuscous, tip whitish. Thorax dark fuscous. Abdomen glossy pale fuscous. Legs glossy pale fuscous-ochreous, anterior and median legs dark fuscous above, articulations of segments pale ochreous. Fore wing with veins 3 and 4 short-stalked, 9 and 10 connate; hyaline discal spot median; elongate, moderately dilated, costa curved at base, considerably bent along posterior two-thirds, apex obtusely pointed, termen moderately rounded, oblique. Dark fuscous-brown, hardly purplish-tinged, markings white with irregular edges. A patch extending from $^1/_4$ to beyond middle of dorsum, broadly rounded above, reaching more than $^3/_4$ across wing, slightly outwards-oblique, edges rather irregular, serrate, a small dentation anteriorly below fold; this patch is centred with faint pale yellow suffusion and bears a series of minute curved transverse dark fuscous strigulae along dorsum, median strigula continued across the white patch, sinuate, tolerably vertical; a large subtriangular spot from before middle to before $^3/_4$ of costa, inwardly oblique, with irregular edges, indefinitely truncate in cell, centred with pale yellow suffusion and marked with a series of small transverse fuscous marks along costal edge; a small transverse white streak along closing vein, separated from preceding; a rather obscure moderate semicircular patch on dorsum before tornus, with irregular edge: sordid white somewhat irrorated with fuscous points, tending to form transverse strigulae; a transverse whitish fascia from costa before apex to upper half of termen, inwardly angulated in middle, with irregular edges, obscured by fuscous strigulation, containing a rounded fuscous spot and isolating a rounded spot of dark ground colour in apex which contains a few white points anteriorly. Cilia (imperfect) dark brownish-fuscous mixed with white towards apex, white bars opposite extremities of the subapical fascia, cilia in tornus whitish. Hind wing fuscous-golden-bronze, glossy, cilia bronze-whitish.

Ovipositor apparently entirely atrophied, postapophyses short for the genus, very slender. Limen triangularly notched. Colliculum moderate, somewhat constricted in middle. Anapophyses rather weak. (Slide no. 1140 D, type.)

Bernhard Camp, 50 m, September 8, 1938. One specimen. Closely allied with the following species, differing by connate veins 9 and 10 in the fore wing and by the median position of the hyaline spot. Both *M. lacticaput* and *victa* can easily be distinguished from *M. trimaculella* (Snellen, 1905) by the rather suffused costal and dorsal spots which in the latter species are sharply edged, while the second dorsal spot is of more regular triangular shape.

By the courtesy of Dr. C. O. van Regteren Altena of the Leiden Museum we received in Buitenzorg at the time Snellen's cotype (a female) of *Blabophanes trimaculella* from Celebes, Bonthain, for comparison.



Genitalia of Tineidae. Fig. 833: *Hyalaula apatelia* spec. nov., male, latero-ventral aspect. Fig. 834: *idem*, latero-dorsal aspect. Fig. 835: *Monopis cuspidigera* spec. nov. female. Fig. 836: *M. hypochrysa* spec. nov., female. Fig. 837: *M. lacticaput* spec. nov., female. Fig. 838: *M. victa* spec. nov., female. Fig. 839: *Apoecis stenomorpha* spec. nov., male. Fig. 840: *Crypsitricha oeceotypa* spec. nov., female.

SNELLEN did not fix the type of this species and therefore we will use this opportunity to do so. The choice in this case is easy: the species has been described in the *Tijdschrift voor Entomologie*, vol. 28, p. 21, 1905, after two specimens from Celebes (now in the Leiden Museum), one of which, a male from Makassar, still in perfect condition, is figured on plate 2, figs. 5—7 and this specimen we appoint now as lectotype. The other specimen has been erroneously indicated by SNELLEN as a male, but appears to be a female instead.

Monopis lacticaput spec. nov. (fig. 837)

♀ 18 mm. Head white tinged creamy. Antenna dark bronze-fuscous, lighter towards apex. Palpus dark fuscous, terminal segment except base whitish with brassy gloss. Thorax dark fuscous. Abdomen fuscous. Legs pale ochreous (anterior and median pairs missing). Fore wing with vein 2 from towards angle, 3 and 4 stalked from angle, 9 and 10 short-stalked from upper angle of cell, hyaline spot slightly but distinctly antemedian; elongate-subovate, costa rather curved along posterior half, slightly so at base, apex rather pointed, termen little curved above, oblique. Whitish, suffused and irrorated with fuscous, also suffused with pale yellow. A dark fuscous basal patch, a costal streak of fuscous irroration along anterior half dotted with dark fuscous along costal edge and an irregular transverse slightly outwards-oblique streak of the same colour from $^1/_3$ of costa to middle of dorsum, attenuated below; these markings enclose a large rounded-ovate, slightly outwards-oblique patch of ground colour, with base from $^1/_5$ to $^3/_5$ of dorsum, speckled with dark fuscous posteriorly, suffused with pale yellow anteriorly, with fuscous along dorsum; furthermore, a broad, irregular vertical transverse band of dark fuscous irroration at $^3/_4$, becoming rather abruptly narrowed and paler on lower half; a suffused streak connecting middle of the anterior edge of this band with $^2/_3$ of posterior edge of the first transverse streak, thus enclosing an inwardly oblique transverse patch of ground colour from $^3/_5$ of costa, much suffused with pale yellow, its point containing the hyaline discal spot; finally, the fuscous markings enclose also an ill-defined semicircular patch of ground colour from beyond middle of dorsum to tornus, moderately transversely strigulated with fuscous; a rounded subapical patch of ground colour occupying about $^1/_5$ of wing, traversed by a median streak of pale purple suffusion ending by a fuscous apical spot. Cilia light ochreous mixed with fuscous, dark fuscous opposite apex and above tornus. Hind wing dark brassy-fuscous, with purplish gloss in certain lights, cilia whitish-grey, glossy.

Ovipositor short, top indent, lobes and sensillae atrophied. Postapophyses short for the genus, slender. Limen shortly bilobed. Colliculum distinctly narrowed, rather short. Anapophyses slightly longer than in preceding species. (Slide no. 1139 D, type.)

Mist Camp, 1800 m, January 17, 1939. One specimen. Allied to *M. trimacullella* (SNELLEN), but when compaired with SNELLEN's paratype of this species (from the Leiden Museum) it appears to differ in the following points: the hyaline patch antemedian, the costa more curved, the apex more pointed, light spots strongly obscured and more suffused with yellow.

Monopis cuspidigera spec. nov. (fig. 835)

♀ 23 mm. Head light yellow. Antennae light fuscous, dark fuscous towards base. Palpus dark fuscous, terminal segment under $^1/_2$, with apical half light ochreous. Thorax deep bronze-fuscous. Abdomen pale ochreous tinged brownish with a golden gloss. Legs light ochreous with a golden gloss, anterior femur and tibia and median tibia dark fuscous above. Fore wing with vein 2 from towards angle, 3 and 4 stalked from angle, 9 and 10 stalked, from upper angle of cell, hyaline patch slightly antemedian; costa moderately curved posteriorly, apex obtusely pointed, termen gently curved, oblique. Glossy, light lilac-purple, bright purple in apex and along termen, strewn with dull purple-brown dots forming sparse more distinct dotting along edges of markings. Base of wing suffused with fuscous; costal edge light orange-ochreous, basal fourth suffused with dark fuscous, minutely marked pale ochreous, a row of subcostal fine dark fuscous dots. Markings glossy light yellow: a streak just below the second fourth of costa curved anteriorly and extending to dorsum beyond base; a subquadrate patch on dorsum from beyond $^1/_4$ to beyond middle, slightly narrowed above, terminated by lower margin of cell, edged by sparse dark purplish-brown dots; a strongly inwards-angulate transverse fascia formed by an elongate slightly subcostal spot at $^3/_4$, an obliquely oval larger spot on dorsum before tornus and a transverse spot edging cell posteriorly, connections between these three spots rather narrow; a very oblique, irregular whitish-ochreous spot from costa before apex not reaching halfway towards cell, slightly suffused with pale yellow towards end and with some three short vertical strigulae from its lower edge; some whitish-ochreous transverse strigulation on middle of termen. Cilia pale orange-ochreous mixed with fuscous between light markings, opposite apex with a fuscous blotch. Hind wing light golden-bronze-fuscous. Cilia (damaged) sordid yellowish-white, with a coppery gloss.

Apparently ovipositor rather long (top missing). Postapophyses long, very slender. Limen slightly notched. Colliculum long, slender. Anapophyses long. (Slide no. 1138 D, type.)

Mist Camp, 1800 m, January 8, 1939. One specimen. Allied to the preceding.

Monopis hypochrysa spec. nov. (fig. 836)

ὑπό = under, *χρυσός* = gold

♀ 25—26 mm. Head light yellow. Antenna glossy light fuscous, towards base dark fuscous. Palpus with terminal segment over $^1/_2$, compressed,

obtuse; blackish-fuscous, apex of terminal segment pale ochreous. Thorax dark fuscous with a purplish gloss, a semicircular light yellow spot on the anterior extremity. Abdomen pale golden-ochreous. Legs light golden-ochreous, anterior and median deeper ochreous, with knee infuscated. Fore wing with veins 2 and 3 out of 4, from angle, 7 to costa, 9 and 10 stalked, from upper angle of cell; ovate-lanceolate, moderately broad, hyaline patch slightly before middle, costa moderately curved towards apex, less so at base, straight in middle, apex rather obtusely pointed, termen straight above, oblique. Glossy light lilac-purple, irrorated with dull purplish-brown scales, except on markings which are glossy light yellow. Basal fourth of costa dark fuscous, a subcostal row of small dark fuscous scales below this; costal edge from preceding row of scales to apex, light fulvous-ochreous; a broad ill-defined pale yellow transverse streak from basal fifth of dorsum to $^1/_3$ of costa, moderately attenuated above and hardly separated by a few purple scales from a large subtrapezoid patch occupying the median three fifths of dorsum, anterior edge very oblique, posterior less oblique, angularly indent above fold, truncate top terminated by the lower edge of cell; an invert-triangular discal spot with concave anterior edge enclosing hyaline patch, posterior angle connected with point of an oblique wedge-shaped spot on $^3/_4$ of costa, lower angle connected by a narrow streak along basal half of vein 5 with an irregular oblique transverse spot halfway towards termen and parallel to it; top of this transverse spot almost touching a suffused semioval pale yellow spot on costa before apex; a subtrapezoid patch on dorsum before tornus, top confluent with the streak along vein 5, anterior edge bluntly projecting above dorsum, posterior edge concave; dark brown irroration especially dense in middle of disc at $^3/_4$ and forming some dark dots along lower edge of cell and in fold. Cilia along costa light fulvous-ochreous, mixed with purplish-fuscous on $^1/_5$ of costa, ochreous-yellow elsewhere, with a fulvous-brassy suffused patch opposite apex and one between veins 2—4. Hind wing shining deep golden, costal $^3/_4$ pale ochreous. Cilia pale golden ochreous.

Ovipositor moderately long, top deeply split, lobes naked, sensile hairs and bristles atrophied. Postapophyses moderately long, slender. Limen indent. Colliculum short, wide. Anapophyses moderately long, sinuate. (Slide no. 1137 D, holotype.)

Top Camp, 2100 m, January 25, 1939 (holotype). Patrol, 1800 m, October 21, 1938. Lake Habbema, 3250—3300 m, August 8, 1938. Three specimen. Very distinct by yellow markings and golden coloured hind wings.

Crypsitricha Meyrick, 1915

Crypsitricha Meyrick, 1915, Trans. N. Zeal. Inst., vol. 47, p. 235. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 60, 1929.

Crypsitricha oeceotypa spec. nov. (fig. 840)

οἰκεῖος = related, *τύπος* = type

♀ 23 mm. Head sordid pale fuscous. Antenna serrulate, fuscous, pale-ringed, joints closely set. Palpus sordid pale ochreous, basal segment and $^2/_3$ of median fuscous, apical segment with a narrow basal and a broad subapical greyish rings. Thorax pale ochreous speckled with fuscous, dark fuscous anteriorly. Abdomen pale greyish-ochreous, broadly ringed with fuscous. Legs light ochreous, infuscated, anterior tibia short, dark fuscous above, median tibia with two dark fuscous bands above. Fore wing with a pecten of hair-scales along median third of vein 1c on the underside, elongate, dilated, broadest beyond $^3/_4$, costa moderately curved towards extremities, apex obtusely pointed, termen long, rounded, oblique. Pale ochreous, moderately and finely speckled with brown, markings dark brown. Base of costal edge infuscated; costa with a round spot beyond base, lower edge slightly produced towards base of wing, an elongate-rectangular, twice as large spot before $^1/_4$, a small transverse mark at $^1/_3$; a large round spot in $^1/_6$ of disc, a small dot below this; an elongate invert-trapezoid discal patch from before $^1/_3$ to beyond middle, terminated above by media, below by fold, anterior upper angle slightly projecting, posterior extended, so as to form an inwardly concave, somewhat zigzag broad band to $^3/_5$ of costa, narrowed above, with a serrate posterior edge; lower anterior angle of this patch connected with dorsum by two small wedge-shaped spots; an inwardly oblique rather slender wedge-shaped mark on $^3/_4$ of costa reaching $^1/_3$ across wing and an irregularly clavate spot on lower angle of cell, its stem reaching dorsum on termination of vein 1c; these two marks together run tolerably parallel to posterior edge of preceding marking; an obliquely semioval subterminal discal patch; all markings along anterior $^3/_4$ of costa alternating with series of small costal dots; posterior fourth of costa with four dots quickly becoming larger towards apex, subapical dot rounded; termen also with a row of four dots, subapical semiovate, ultimate in tornus, penultimate transversely extended and connected with the subterminal discal patch; dorsum with a triangular dot beyond base and some small transverse marks towards tornus. Cilia pale golden-ochreous, a brownish subbasal fascia forming darker blotches opposite terminal dots and a subapical row of suffused brownish dots corresponding with the preceding. Hind wing pale fuscous-golden, cilia pale fuscous-ochreous, glossy, a faint fuscous antemedian line around apex and along upper half of termen.

Ostium supported by a curved sclerotized plate at each side, ventrally both plates are connected by limen which is a rising horseshoe-shaped weakly bristled plate. Ovipositor lobes deeply separated from each other. Ductus bursae simple. Bursa copulatrix not perceptible in mount. (Slide no. 1141 D, type.)

Moss Forest Camp, 2800 m, November 13, 1938. One specimen. The

possession of a pecten of hairs on the under side of vein 1c instead of 1b is the only discrepancy with the description of *Crypsitricha*, and is certainly not important enough for generic separation of the present species. *Crypsitricha* occurs also in New Zealand and Australia.

Sematoplusia gen. nov. (fig. 841)

σῆμα = sign, *πλούσιος* = rich

Head roughly haired, face with long rough hairs forming loose sublateral tufts. Ocellus posterior. Proboscis vestigial. Antenna $^1/_2$, in male serrate, ciliated (over 1), scape somewhat dilated and flattened, with pecten. Labial palpus moderately long, little curved, porrect, median

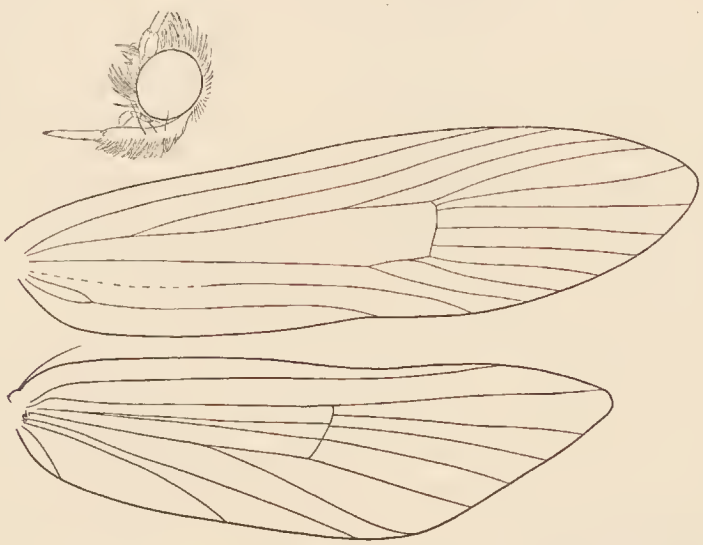


Fig. 841: *Sematoplusia acibdela* gen nov., spec. nov., male, head and wing neuration.

segment with rough fringe of scales below, terminal segment $^2/_3$, somewhat thickened, smooth, tolerably pointed. Maxillary palpus long, several-jointed, folded, moderately compressed, obtuse. Thorax without crest. Posterior tibia smooth. Fore wing with 1b furcate, 2 from beyond $^4/_5$, 3 from towards angle, 4 from angle, 7 separate from below upper angle of cell, to termen, 8 and 9 rather approximated towards base, 10 remote, 11 from towards base. Hind wing 1, elongate-semiovate, cilia $^1/_2$; 2 from $^3/_5$, 3 from angle, widely remote from 4, 4—7 separate, tolerably parallel, 4 more remote, 5—7 almost equidistant; short-furcate median vein distinct in cell.

Genotype *Sematoplusia acibdela* spec. nov., male.

Allied to *Scardia* but readily recognised by vein 7 in the fore wing running to the termen, and by the smooth hind tibiae.

Sematoplusia acibdela spec. nov. (figs. 841, 848, 849)

ἀκίβδηλος = true

♂ 14.5 mm. Head pale grey mixed with fuscous, hairs along sides of face dark fuscous. Antenna dark fuscous mixed with whitish, scape ochreous-whitish with base suffused with brown. Palpus dark grey-fuscous, median segment with an apical ring, terminal segment with a white submedian ring and white tip. Thorax and abdomen fuscous-whitish, shoulder dark fuscous. Legs fuscous-whitish, anterior leg infuscated above. Fore wing elongate-ovate, costa moderately curved, more so towards extremities, apex obtusely pointed, termen rounded, oblique. Whitish, tinged very pale ochreous, finely irrorated with light brownish-fuscous, towards apex also slightly suffused with fuscous, markings dark fuscous. An invert-trapezoid spot on base of costa and an irregular costal streak from beyond this to middle; a transverse fasciate blotch on the middle of costa, somewhat narrowed below, slightly inwards-oblique, reaching to middle of disc, paler than other markings; an elongate, subrectangular rather large spot on $^3/_4$ of costa reaching to angle of cell, vertical edges moderately inwards-oblique, posterior continued as a moderate streak running to beyond base of vein 3, abruptly bent there, running to lower angle of cell; two suffused costal dots on veins 10 and 9, ultimate dot largest, continued by an ill-defined, suffused and inwardly oblique fascia across upper half of disc; seven small dark marginal dots on veins 8 to 2; a small dark spot on dorsum beyond base; indications of dark markings along fold. Cilia glossy pale fuscous, with an indication of a greyish supramedian line around apex. Hind wing white tinged very pale ochreous with pale gloss, cilia pale fuscous, somewhat darker fuscous along costa.

Tegumen broad and short. Uncus bipartite, each half rather narrow, long, ending in a flattened, acute blade. Valva short, subquadrate, thickened, a strong erect acute hook in disc before top of costa; sacculus not indicated, with an ovate haired tumescence before its top (indicated in fig. 849 by a broken line); base of costa produced in a long pointed process. Vinculum very large. Saccus moderate, bipartite. Anellus (?), a haired trifid knob at each side. Aedoeagus rather long, cylindrical, with a cleft and pointed top. No cornuti (Slide no. 1142 D, type.)

Rattan Camp, 1250 m, February 4, 1939. One specimen.

Tinissa Walker, 1864

Tinissa Walker, 1864, List Lep. Het. Brit. Mus., vol. 29, p. 780. Meyrick, Exot. Microl., vol. 3, p. 424, 1928 (redescr.). Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 224, 1929.

Key to Papuan species of *Tinissa*

1. Hind wing purple-bronze-fuscous or bronze-grey 2
   Hind wing grey, fuscous or whitish, not bronze coloured 3

2. Fore wing with veins 7 and 8 stalked; costa with whitish strigulae and dots . . . . . *heterograpta* MEYRICK
   Fore wing with veins 7 and 8 separate; costa with distinct ochreous-whitish round dots . . . . . *chloroplocama* MEYRICK
3. Fore wing with ground colour white; veins 7 and 8 stalked; hind wing whitish-fuscous . . . . . *rigida* MEYRICK
   Ground colour not thus or, if whitish, then veins 7 and 8 separate 4
4. Glossy purple, strigulated dark fuscous; terminal segment of palpus with two fuscous rings . . . . . *eumetrota* MEYRICK
   Whitish-ochreous or light brown; terminal segment of palpus with one ring or without rings 5
5. Fore wing with veins 7 and 8 separate; whitish-ochreous *cinerascens* MEYRICK
   Fore wing with veins 7 and 8 stalked; light brown . . . *palmodes* MEYRICK

Tinissa chloroplocama MEYRICK, 1938

Tinissa chloroplocama MEYRICK, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 526, 1938.

Distribution: Papua, Mafulu, 4000 feet.

Araucaria Camp, 800 m, March 26, 1939. One female. We were able to compare this insect with a topotypical specimen. Details of the neuration of fore wing were omitted from the original description. These are: veins 4 and 5 connate, 7 and 8 separate.

Tinea LINNÉ, 1758

Tinea LINNÉ, 1758, Sept. Nat., ed. X, I, p. 496. SPULER, Schmett. Eur., vol. 2, p. 458, fig. 211, 1910. MEYRICK, Proc. Linn. Soc. N. S. Wales, vol. 8, pp. 529—530, 1892. Rov. Handb., p. 825, 1928. Tran. N. Zeal. Inst., vol. 47, p. 238, 1915. FLETCHER, Mem. Agric. Ind., Ent., vol. 11, p. 223, 1929.

Tinaea GEOFFROY, 1762, Hist. abrégé Ins., vol. 2, pp. 25, 173. CORBET & TAMS, Entomologist, vol. 76, pp. 113—114, 1943.

Nemapogon SCHRANK, 1902, Fauna Boica, vol. 2, part 2, p. 167.

Ses HÜBNER, 1806, Tentamen, p. 2 (*non descr.*).

Brosis HÜBNER, 1806, *ibidem*, p. 2 (*non descr.*).

Autoses HÜBNER, 1826, Verz. bek. Schmett., p. 401.

Acedes HÜBNER, 1826, *ibidem*, p. 401.

Diaphtirusa HÜBNER, 1826, *ibidem*, p. 404.

Cephimallota BRUAND, 1847, Catal. Microl. Doubs., p. 66.

Edosa WALKER, 1866, List Lep. Het. Brit. Mus., vol. 35, pp. 1818-1819.

Chrysoryctis MEYRICK, 1886, Ann. Mag. Nat. Hist., ser. 5, vol. 17, p. 530.

Perissomastix WARREN, 1905, Novit. Zool., vol. 12, p. 33.

Tryptodema DIETZ, 1905, Trans. Amer. Ent. Soc. ,vol. 31, p. 74, p.l 6, fig. 2.

Triptodema FORBES, 1924, Lep. N. York, p. 138 (emend).

Key to Papuan species of *Tinea*

1. Ground colour clear yellow 2
   Ground colour not clear yellow 5
2. A dark basal patch occupying one-fifth or one-fourth of wing 3
   A short wedge-shaped fuscous costal streak and base of dorsum fuscous . . . . . *cymopelta* MEYRICK

3. Hind wing dark coppery-grey; fore wing with purple terminal fascia containing an ovate dark bronze-brown patch on upper half and a small spot on termen . . . . . *nesocharis* MEYRICK
   Hind wing dark bronze-grey or fuscous-bronze; purple terminal fascia of fore wing with one large rounded dark fuscous patch; viz., in apex and on termen, or without patches 4
4. Fore wing with terminal fascia containing a rounded dark fuscous spot in apex and along tornus; basal patch with straight, vertical edge; abdomen light yellow-fuscous . . . . . *isocharis* MEYRICK
   Fore wing with terminal fascia unicolorus; basal patch with slightly inwards-oblique edge, with two small projections, concave between these; abdomen brownish-ochreous . . . . . *anisoxantha* spec. nov.
5. Deep fuscous with violet shine . . . . . *cirrhoceros* spec. nov.
   Ochreous-whitish, suffused with yellow . . . . . *mellitacta* spec. nov.

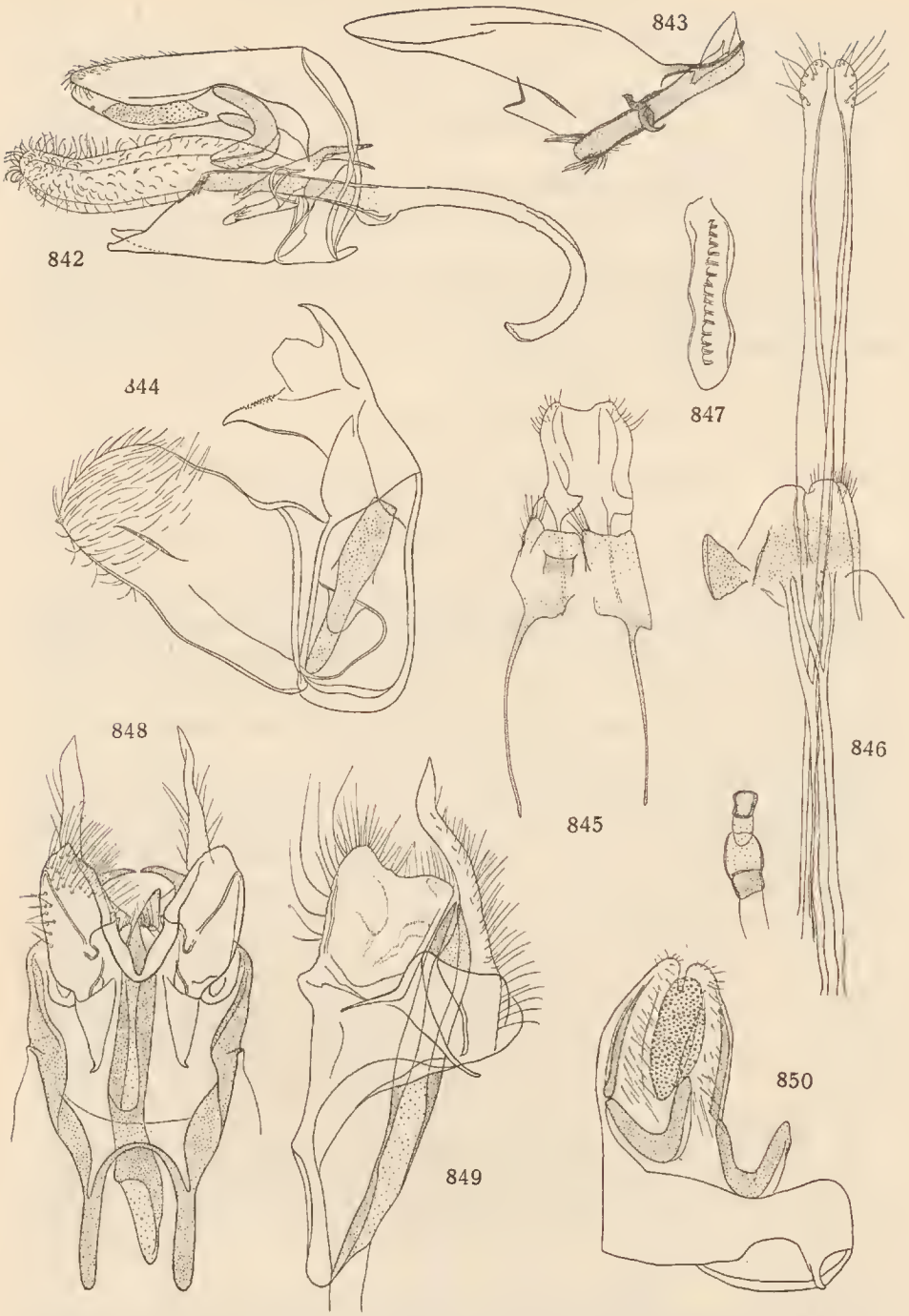
Tinea anisoxantha spec. nov. (figs. 846, 847)

αν = not, *ἰσος* = equal, *ξανθός* = yellow

♀ 18 mm. Head sordid ochreous-yellow. Antenna fuscous becoming ferruginous-brown towards base. Palpus and thorax dark ferruginous-brown. Abdomen brownish-ochreous. Legs light ochreous-bronze, anterior and median femora and tibiae dark fuscous-bronze. Fore wing elongate-ovate, costa curved anteriorly, apex obtusely pointed, termen rounded, oblique. Light yellow; a dark ferruginous-brown basal patch occupying somewhat more than basal fifth of wing, edge well-defined, slightly inwards-oblique, irregularly serrulate, with a small triangular projection below costa, and a small indentation below middle, gently concave between these; apical third of wing glossy purple, irrorated with dull dark fuscous, edge irrorated with blackish-fuscous, well-defined, from before $^3/_4$ of costa to dorsum before tornus, convex from costa to below upper angle of cell, with a pointed triangular projection on closing vein, convex again from above lower angle of cell to dorsum. Cilia (damaged) pale fuscous mixed with darker fuscous. Hind wing fuscous-bronze, paler in cell and at base, a whitish attenuated streak along anterior $^3/_5$ of costa. Cilia (imperfect) paler bronze-fuscous.

The genitalia are surrounded and entirely concealed by an exceedingly dense tuft of hair-scales. Ostium simple, narrow. Colliculum developed, a short tube with wider upper half. Ductus bursae simple. Signum, a weak elongate plate with rolled up edges and a longitudinal series of transverse bars in middle. (Slide no. 1143 D, type.)

Rattan Camp, 1150 m, February 9, 1939. One specimen. Intermediate between *T. isocharis* MEYRICK and *T. nesocharis* MEYRICK, very near to former, but in that species the edge of basal patch in fore wing is straight, direct, and the abdomen is light yellow-ochreous.



Genitalia of Tineidae. Fig. 842: *Micrerethista eustena* spec. nov., male, lateral aspect. Fig. 843: *idem*, left valva and aedoeagus, dorsal aspect. Fig. 844: *Heloscopa petricola* spec. nov., male. Fig. 845: *Apoecis anholoxantha* spec. nov., female. Fig. 846: *Tinca anisoxantha* spec. nov., female. Fig. 847: *idem*, signum. Fig. 848: *Sematoplusia acibdela* spec. nov., male, ventral aspect. Fig. 849: *idem*, lateral aspect. Fig. 850: *Micrerethista eustena* spec. nov., male, tegumen with saccus, uncus and gnathos.

Tinea cirrhoceros spec. nov. (fig. 851)

κίρρος = pale yellow, κέρας = horn

♂ 14.5 mm. Head sordid light ochreous, vertex mixed with a few dark fuscous hairs, face and collar dark fuscous. Antenna pale ochreous. Palpus blackish, tip pale ochreous; terminal segment under $^1/_2$. Thorax dark fuscous with a violet gloss. Abdomen pale fuscous-tawny. Legs pale ochreous, anterior leg blackish, posterior tibia with smoothly appressed bristly hairs projecting beyond apex. Fore wing ovate, costa curved, apex and termen rounded. Dark fuscous, with a violet gloss. Costa suffused with dull dark fuscous, cilia brownish-fuscous, a broad pale ochreous bar in tornus. Hind wing glossy olive-coppery-golden. Cilia glossy, pale fuscous.

Tegumen elongate, soldered with uncus which is triangular, with a strong, tolerably pointed top. Transtilla rising, erect-triangular, with long slender legs. Valva rather narrow, elongate-ovate. Vinculum strong. Saccus short. Aedocagus long, gradually dilated towards extremities. Cornuti, numerous minute bristles (vesica partially extruded in mount). Slide no. 1144 D, type.

Rattan Camp, 1150 m, February 4, 1939. One specimen. Of the group of *Tinea glabrella* Walker.

Tinea mellitacta spec. nov.

♂ 10 mm. Head pale yellow. Antenna dark fuscous. Palpus dark fuscous, tip pale ochreous; terminal segment over $^1/_2$. Thorax and abdomen pale yellowish-ochreous, venter whitish (somewhat rubbed; tip of abdomen missing). Legs pale ochreous, anterior leg fuscous above. Fore wing elongate-ovate, costa curved, apex obtusely pointed, termen rounded, oblique. Ochreous-whitish suffused with golden-yellow, coarsely scattered with dark brown scales, forming an ill-defined basal patch; indication of a transverse outwardly oblique submedian fascia, formed by a very sparse dark brown irroration and a somewhat denser band at $^3/_4$, parallel to the preceding, extended to before apex but becoming less dense towards costa posteriorly. Cilia sordid yellow mixed with dark brown. Hind wing greyish-coppery-bronze, rather light, a whitish streak along basal half of costa, cilia whitish with a suffused antemedian grey fascia.

Rattan Camp, 1200 m, March 2, 1939. One specimen.

Micrerethista Meyrick, 1938

Micrerethista Meyrick, 1938, Trans. Entom. Soc. Lond., vol. 87, p. 527.

This interesting genus may be redescribed as follows.

Head with long dense rough hairs, sometimes forming two strong erect lateral and one median (longitudinal) keels on vertex. Ocellus posterior.

Proboscis absent. Antenna $^1/_2$, in male dentate, strongly fasciculate-biciliated, ciliations 2, scape thickened, with a moderate pecten of bristly hairs or with a large fan-like pecten of long scales. Labial palpus moderate or rather long, curved, ascending, sometimes strongly diverging and appressed to face and eyes; basal segment of palpus with a tuft of long scales beneath, median segment densely rough-haired, above mostly with long dense erect scales, laterally towards apex also with a few bristly projecting scales, terminal segment short (hardly $^1/_6$), stout, scaled, rather obtuse. Maxillary palpi obsolete. Thorax with a strong posterior crest. Anterior tibia thickened, smooth, laterally compressed, with a shallow furrow at each side, and two keels or a tuft of scales towards apex below; basal segment of tarsus much dilated with smoothly appressed scales, roughly projecting at apex; other segments normal, long; posterior tibia long, with sparse loose very long erectile hairs above and beneath. Fore wing very elongate, narrow, 1b furcate, 1c strongly developed; 2 from towards angle, 3 from angle, approximated, stalked or almost connate with 4, 5 and 6 approximated towards base; 7 and 8 short-stalked, 7 to costa, stalk from below angle; 9 from angle, 11 apparently from towards base, anterior half of this vein and upper edge of cell from base of vein 10 to base of wing almost obliterate; lower parting vein strong from beyond base, to halfway between 5 and 6; sometimes discoidal between the last mentioned veins distinctly angulate inward, upper parting vein weak, to stalk of 7 + 8. Retinaculum, a strong oblique transverse sclerotized bar. Hind wing $1^1/_2$—$1^1/_4$, semiovate-lanceolate, pointed, tornus angulate, distinct, cilia over $^1/_2$; 1a and 1b anastomosing beyond base, 1c furcate at base, 2 from $^3/_4$, 3 from angle, 4 approximated towards base, 5 and 6 approximated towards base, 7 parallel, parting vein distinct, to below base of 6.

Allied to *Ptychoxena* Meyrick and might even prove to be a synonym of that genus. Belongs to the group of *Gerontha* Walker. Meyrick's statement that the terminal segment of the labial palpus is $^1/_2$ of the median is erroneous. Set specimens of this genus become quickly greasy which indicates a great development of the fat body, probably in connection with wood-boring life-habits of the larvae, which are, however, unknown.

Key to the species of *Micrerethista*

1. Fore wing with veins 3 and 4 stalked in male, connate in female . . . *eustena* spec. nov.
   Fore wing with veins 3 and 4 approximated in both sexes. . . *mochlacma* Meyrick

Micrerethista mochlacma Meyrick, 1938

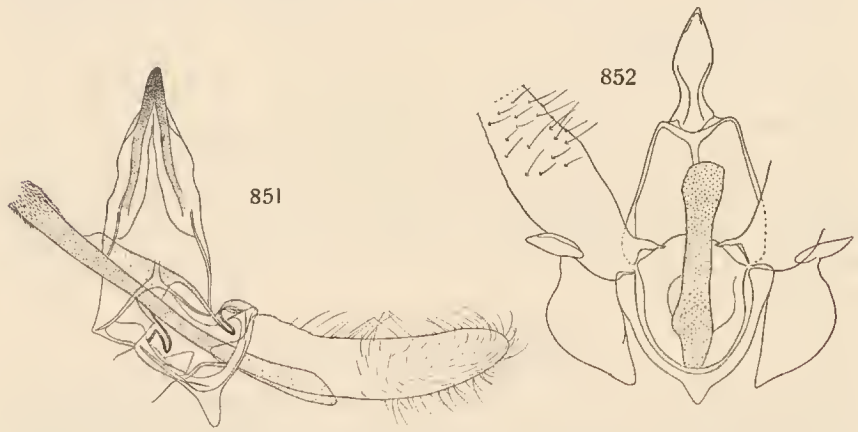
Micrerethista mochlacma Meyrick, 1938, Trans. Ent. Soc. Lond., vol. 87, p. 527.

Distribution: Papua, Mount Tafa, 8500 feet.
Mist Camp, 1800 m, January 12, 15, 1939. One male, one female.

Micrerethista eustena spec. nov. (figs. 842, 843, 850)

ευ = true, *στενός* = narrow

♂ 18—26 mm. Head and palpus white densely strewn with blackish, palpus outwardly black, terminal segment short, long erect fringe of median segment apparently along medio-lateral edge, appressed to face. Thorax whitish irrorated with dark fuscous-grey; an expanded posterior tuft of sparse scales, white with dark fuscous tips. Abdomen white. Legs greyish-



Genitalia of Tineidae. Fig. 851: *Tinea cirrhoceros* spec. nov., male. Fig. 852: *Narycia negligata* spec. nov., male.

white, anterior femur and tibia dark grey, in both sexes femur with a comb of scales below, tibia short, expanded with dense, appressed scales, tarsus light fuscous, normal; posterior leg normal, long, slender: femur greyish, apical $^1/_3$ of tibia and entire tarsus fuscous-grey, mixed with white. Fore wing with 3 and 4 stalked or connate; lanceolate, slightly dilated, costa moderately curved at base, straight posteriorly, apex pointed, termen rounded, oblique. Greyish-white, sparsely irrorated with fuscous, markings fuscous or blackish. A small blackish streak along base of costa; costal edge irrorated with fuscous throughout, sometimes a row of some four blackish-fuscous dots along vein 12; indistinct lines of fuscous irroration in disc forming transverse strigulation and retination; six cloudy costal dots on terminations of veins along costa from $^3/_5$ to before apex; a row of four larger dark fuscous or blackish dots along termen, these terminal dots more or less confluent; an ill-defined longitudinal patch of coarse irroration in middle of disc beyond cell, more or less connected by finer irroration with posterior fourth of dorsum. Cilia fuscous-white, speckled with dark fuscous or blackish, except towards base, blackish-fuscous towards apex. Hind wing triangular-lanceolate, costa bent and prominent in middle, tornus rather prominent; very pale fuscous-bronze, veins dark fuscous. Cilia fuscous-white, base tinged darker fuscous.

Tegumen broad, short, soldered with uncus which is broadly ovate, with top incised, and bears a large ventral tumescense with globulose surface. Gnathos bipartite, each arm hooked. Valva with an elongate, sinuate, slender and hairy cucullus part, and a rhomboidal, pointed, naked sacculus part; costal base with a pointed projection. Vinculum, a strong ring. Saccus very short. Anellus, a small ring with two subacute rather slender lobes, haired below top. Aedoeagus moderate, distal part of ductus bursae apparently sclerotized, forming a long curved tube. Cornuti, a series of spikes at the top of the aedoeagus. (Slides no. 1148 D, holotype, no. 1149 D, paratype.)

Sigi Camp, 1500 m, February 19, 1939 (holotype), February 22, 1939. Araucaria Camp, 800 m, March 19, 1939. Four males. Allied to *M. mochlacma* Meyrick, 1939, but smaller, distinct by the neuration, by the very narrow fore wing and by a somewhat longer terminal segment of the palpus. Unfortunately all the specimens are in bad condition and greasy, markings being discernable only with difficulty. Still they can easily be distinguished from *mochlacma*.

Coryptilum Zeller, 1839

Coryptilum Zeller, 1839, Isis, vol. 32, p. 181. Walsingham, Cat. Lep. Het. Mus. Oxon., vol. 2, p. 580, 1900. Meyrick, Proc. Linn. Soc. N. S. Wales, vol. 32, pp. 82—83, 1907. Trans. Ent. Soc. Lond. 1910, p. 475, 1910. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 66, 1929.

Sippharara Walker, 1866, List Lep. Het. Brit. Mus., vol. 35, p. 1821.

Sagora Walker, 1869, Charact. Undescr. Lep. Heter., p. 101.

Coryptilum klugii Zeller, 1839

Coryptilum Klugii Zeller, 1839, Isis, vol. 32, p. 181. Walsingham, Catal. Lep. Het. Mus. Oxon., vol. 2, p. 580, 1900. Meyrick, Proc. Linn. Soc. N. S. Wales, vol. 32, p. 83, 1907 (redescr.).

Sippharara euchromella Walker, 1866, List Lep. Het. Brit. Mus., vol. 25, p. 1822.

Sippharara Woodfordi Druce, 1888, Proc. Zool. Soc. Lond., 1888, p. 579, pl. 29, fig. 8.

Distribution: New Guinea, Milore Bay. Solomon Islands. Rossel Island. Moluccas, Halmaheira, Batjan. Philippines, Mindanao. Celebes. Sumatra. Borneo. Java. Malaya.

Coryptilum klugii subspec. biagina Strand, 1920

Coryptilum Klugii Zeller var. (ab.?) *biagina* Strand, 1920, Arch. Naturg., A 12, vol. 85, p. 165, 1920.

Distribution: British New Guinea, Biagi, Mambare River, 5000 feet.

Bernhard Camp, 50 m, August 19, 1938. Araucaria Camp, 700 m, March 31, 1939. Rattan Camp, 1150 m, February 9, 1939. Three females.

Narycia Stephens, 1836

Narycia Stephens, 1836, Ill. Brit. Ent., Mandib., vol. 6, p. 154. Walsingham, Catal. Lep. Het. Mus. Oxon. vol. 2, p. 581, 1900. Spuler, Schmett. Eur., vol. 2, p. 456, fig. 208, 1910. Meyrick, Rev. Handb., p. 836, 1928. Fletcher, Mem. Agric. Ind., Ent., vol. 11, p. 145, 1929.

Diplodoma Zeller, 1852, Linn. Ent., vol. 7, p. 332.

Xysmatodoma Zeller, 1852, *ibidem*, pp. 332, 362—363.

Conoeca Scott, 1865, Austral. Lep., vol. 1, p. 26, pl. 9.

Oecobia Scott, 1865, *ibidem*, p. 27, pl. 9.

Sapheneutis Meyrick, 1907, Journ. Bomb. Nat. Hist. Soc., vol. 18, p. 155.

Thranitica Meyrick, 1908, Proc. Zool. Soc. Lond., 1908, p. 743.

Narycia negligata spec. nov. (fig. 852)

♂ 8.5 mm. Head, thorax fuscous-grey. Antenna, palpus whitish. Abdomen dark grey, anal tuft whitish. Legs whitish-fuscous. Fore wing elongate-ovate, dilated, broadest at $^3/_5$, costa gently curved, apex obtusely pointed, termen slightly curved, long, very oblique. Greyish-white, coarsely and evenly irrorated with dark fuscous, denser so towards apex. Cilia fuscous-whitish, mixed with fuscous, along tips a few dark dots. Hind wing and cilia rather dark grey.

Tegumen moderate. Uncus cuspidate. Valva divided in three parts: an elongate, weakly bristled cucullus (top of both cuculli missing), a short and broad sacculus, and a small flap between this and the cucullus. Vinculum moderate, rounded, top produced. Anellus, a weak plate. Aedoeagus moderate, with a clavate top. (Slide no. 1146 D, type.)

Iebèlè Camp, 2250 m, November 9, 1938. One specimen.

Heloscopa gen. nov. (fig. 853)

ἕλος = lake, σκοπός = sentinel

Head roughly haired, face rough. Ocellus posterior. Proboscis absent. Antenna $^1/_2$, in male ciliate (2), serrulate, scape somewhat flattened, with a distinct pecten. Labial palpus moderate, slightly curved, porrect, median segment moderately thickened with appressed scales, terminal segment under 1, thickened, pointed. Maxillary palpi minute, drooping. Fore wing elongate-ovate, moderate; 1b simple, 2—4 from before angle, separate, 5 from angle, 7 and 8 rather long-stalked, 7 to termen, 9 moderately approximated, 10 remote, 11 from middle. Hind wing ovate-lanceolate, over $^1/_2$, cilia about 2; 2 from before angle, 3 and 4 connate from angle, 5 distant, 6 and 7 hardly approximated towards base, 8 separate, remote.

Genotype *Heloscopa petricola* spec. nov., male.

Related to *Narycia* Stephens, but differing by the stalked veins 7 and

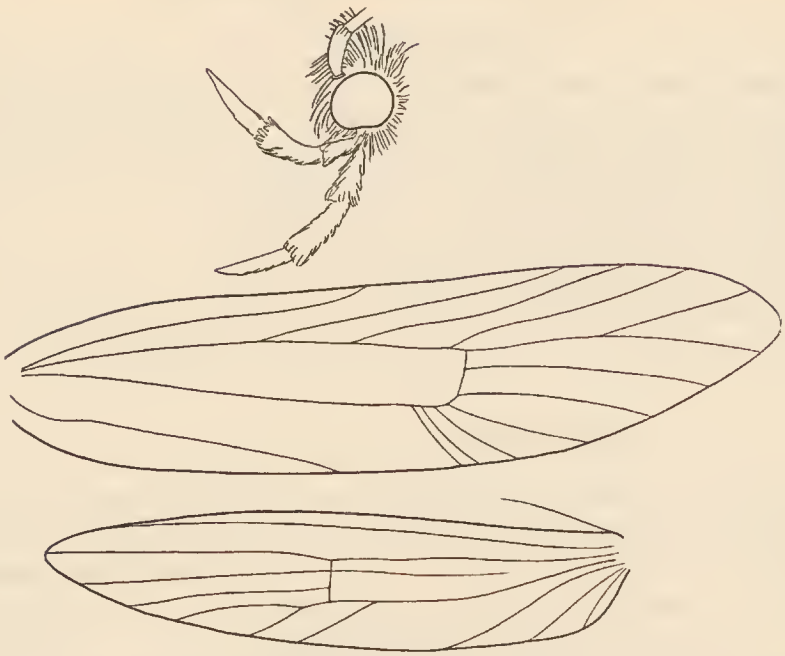


Fig. 853: *Heloscopa petricola* gen. nov., spec. nov., male, head and wing neuration.

8 in the fore wing and by the connate veins 3 and 4 in the hind wing. Probably also related with *Xyloscopa* Meyrick, with which it has in common the neuration of the hind wing, but differs by that of the fore wing. The neuration of the fore wing is identical with that of *Talaeporia*. The male genitalia are of the Yponomeutid type.

Heloscopa petricola spec. nov. (figs. 844, 853)

♂ 12 mm. Head fuscous-whitish. Antenna, thorax dark fuscous. Palpus ochreous-whitish, median segment with an imperfect subapical ring, terminal segment with a fine antemedian fuscous ring. Abdomen dark fuscous-grey, valvae sordid pale ochreous. (Legs missing.) Fore wing elongate-ovate, rather narrow, costa straight in middle, moderately curved at base and apex, apex moderately pointed, termen gently curved, extremely oblique. Ochreous-whitish, densely suffused with fuscous, costa narrowly suffused with blackish-fuscous, this suffusion dilated from beyond middle to before apex, so as to form an elongate-ovate dark patch; a round blackish-fuscous spot on closing vein; irregular small spots of not suffused pale ground colour: one at $^3/_4$ of costa, others more or less interconnected, forming a strongly curved irregular series running from costa halfway between the preceding spot and apex towards middle of termen, thence along lower part of the termen, submarginal, then further along vein 3 to the lower angle of cell; an ill-defined pale elongate spot on middle of

dorsum. Cilia fuscous, suffusedly barred with ochreous-whitish along lower part of termen and in tornus, a median dark fuscous line, distinct around apex. Hind wing and cilia light fuscous, with a pale gloss.

Tegumen rather small, conical. Uncus moderate triangular, pointed. Gnathos strong, porrect, pointed, denticulate above, anal tube dilated towards base. Valva broad, slightly narrowed, cucullus rounded, with a short point at apex below. Vinculum elongate. Anellus, a subtriangular plate. Aedoeagus moderate, with dilated apical half. No cornuti. (Slide no. 1147 D, type.)

Lake Habbema, 2250—3300 m, August 23, 1938. One specimen.

Apoecis gen. nov. (fig. 854)

ἀποικίς = of a settlement

Head and face clothed with rough scales, frons conical. Ocellus absent. Proboscis absent. Antenna $^1/_2$—$^3/_4$, in both sexes with small whorls of loose scales from base to apex, in male also shortly scaled above throughout, shortly ciliated below, scape elongate, clavate, slightly concave at base

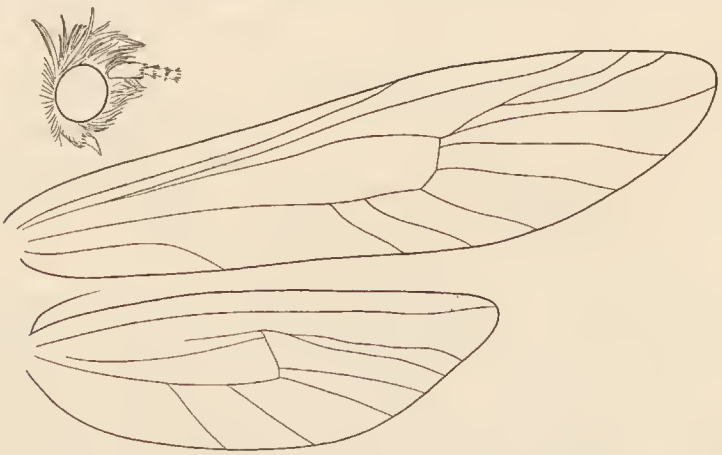


Fig. 854: *Apoecis anholoxantha* gen. nov., spec. nov., female, head and wing neuration.

beneath. Palpus short, porrect, tolerably straight, with appressed scales, median segment thickened, terminal segment $^1/_2$, much more slender, slightly roughish, pointed. Maxillary palpus absent. Thorax hairy, without a crest. Legs long, slender, smooth-scaled, or posterior tibia loosely haired above and beneath. Fore wing corrugated, especially between costal veins. 1b weak, simple, 2 from $^2/_3$—$^4/_5$, 3 from $^4/_5$ or from angle, 4—6 remote, 6 approximated to 7, 7 to termen just below apex, 7 and 8 stalked, 9 out of stalk near base, or 8 and 9 stalked, their stalk out of 7 near its base (sometimes both situations present in right and left wing of the same specimen), or 7 absent, 8 to costa, 9 from angle; 10 absent, 11 from towards base.

Hind wing $^3/_4$, ovate-trapezoid, dilated, cilia $^1/_2$; 2 from beyond middle, 3 from $^3/_4$, 4 from angle, 5 hardly approximated at base, 6 and 7 short-stalked, 7 to termen, 8 straight, to apex, or 6 absent, 8 almost costal along basal half then abruptly bent downward, subcostal, to apex.

Genotype *Apoecis anholoxantha* spec. nov., female.

Allied to *Solenobia* Duponchel but greatly differing by the fact that the females are normally winged and also by many details of structure. Apparently it belongs to a group ancestral to the *Solenobia* stock. The two species described below differ considerably in neuration of both wings, but all other characters are so much alike that we regard them as certainly congeneric. The differences in neuration may be sexual.

Apoecis anholoxantha spec. nov. (figs. 845, 854)

αν-ὅλος = not entirely, *ξανθός* = yellow

♀ 14.5—15 mm. Head, thorax rather dark fuscous, tegula along basal half of outer edge with a pale yellowish streak, pronotum slightly mixed with pale ochreous in middle, mesonotum and metanotum suffused with orange except in middle; pectus pale orange. Antenna $^1/_2$; pale ochreous, with fuscous whorls of scales. Palpus pale fuscous. Abdomen dark fuscous, first and anterior half of second segment light yellow-orange, on venter this colour extends posteriorly as far as fourth segment. Legs light orange, tibiae and tarsi infuscated. Fore wing with veins 7 and 8 stalked, 9 out of stalk near base or 8 and 9 stalked, out of 7 near its base; oblong-ovate, costa curved at base, hardly concave anteriorly, moderately prominent at $^2/_3$, little rounded posteriorly, apex rounded, termen rounded, strongly oblique, dorsum rounded. Dark fuscous-brown with faint bronze gloss; a large suffused light orange patch on dorsum from base to before middle of wing, reaching above $^2/_3$ of disc, upper edge horizontal, posterior slightly outwards-oblique. Cilia dark fuscous with a faint gloss. Hind wing with veins 6 and 7 short-stalked, 8 straight, to apex; dark fuscous brown with bronze gloss, an attenuated costal orange-whitish streak along anterior $^4/_5$ of costa, basal half of wing below this streak light orange, with edge tolerably vertical, ill-defined, obscured by fuscous irroration. Cilia dark fuscous, light orange opposite orange patch.

Ostium, a simple cup. (Slide no. 1096 D, holotype.)

Sigi Camp, 1500 m, February 21, 1939, holotype, paratypes. Three specimens.

Apoecis stenomorpha spec. nov. (fig. 839)

στενός = narrow, *μορφή* = shape

♂ 23 mm. Head, thorax blackish-fuscous, metanotum, pectus, mixed with orange. Antenna $^3/_4$; pale ochreous, scaled and ringed with blackish. (Palpi missing.) Abdomen black, basal half dull orange above, venter somewhat suffused with pale ochreous. Legs pale ochreous densely suffused

with blackish-fuscous, posterior tibia light orange, spurs and tarsus fuscous. Fore wing with vein 7 absent, 8 to costa, 9 separate, from upper angle of cell; narrowly elongate-lanceolate, broadest beyond $^4/_5$, costa undulate: with a slight prominence at about $^1/_5$ and another one beyond middle, evenly rounded beyond this; apex rather rounded, termen rounded, extremely oblique, dorsum straight. Dull blackish-fuscous; a broad inwardly oblique transverse light orange band beyond base, occupying about $^1/_5$ of wing, slightly narrowed on costa, edges irregular, obscured by blackish-fuscous irroration, anterior edge serrate by acute projections of ground colour between veins; this patch narrowly streaked along costa and dorsum with ground colour. Cilia blackish. Hind wing with vein 6 absent, 7 to termen, 8 almost costal along anterior half, then abruptly curved, subcostal, to apex; dull blackish-fuscous, slightly paler than fore wing; somewhat more than basal third light orange, with edge tolerably straight, irregular, projecting below costa, broadly incised from projection to base, top of incision on lower edge of cell. Cilia blackish-fuscous, opposite basal half of orange area: light orange.

Male genitalia, fig. 839. (Slide no. 1097 D, holotype.)

Top Camp, February 9, 1939. One specimen. Allied to the preceding.

INCURVARIIDAE

There are no previous records of this family from the Papuan region. A conspicuous novel form is introduced below.

Ectropoceros gen. nov. (fig. 855)

ἐκτροπός = deviating, κέρας = horn

Head conical, somewhat compressed dorso-ventrally, clothed with rough hairs, frons with a small tuft of rough hairs projecting between bases of antennae, upper part of face rough, lower part with loosely appressed hairs directed from orbit to middle of face. Ocelli and proboscis absent. Eye moderate, somewhat ovate. Antenna implanted before the eye, $^3/_4$, in female strongly thickened, compressed from beyond base to apex, becoming more compressed posteriorly, apex entirely flattened, obtuse; clothed with short, appressed scales throughout, giving rise to slight serrulation, apex with a pencil of very short hairs, scape rather small, smooth, cylindrical, not thickened, without pecten. Labial palpus moderate, straight, drooping, slender, clothed with loosely appressed short scales throughout, terminal segment about $^1/_2$, pointed, or longer, stout, obtuse, roughish. Maxillary palpus small, several-jointed, folded, smooth, appressed to face. Posterior tibia with closely appressed hairs slightly projecting beyond apex, inner spur of first pair very long ($^3/_4$). Fore wing subovate, obtusely pointed. 1b simple, 2 from beyond $^3/_5$, 3 from before angle, 4, 5, 6 remote, tolerably equidistant, 5—6 parallel, 7 and 8 slightly approximated towards base, 7 to termen, 8—10 separate and equidistant, 11 from towards base,

accessory cell indefinite. Hind wing $^3/_5$, semiovate, apex pointed, termen slightly sinuate below apex, gradually curved elsewhere, cilia almost 1; 2 from before $^3/_4$, 3 from angle, 4 remote, slightly approximated towards base, 5 from middle of discoidal vein, 5—7 slightly diverging, stem of media indicated, simple, straight, to base of vein 6.

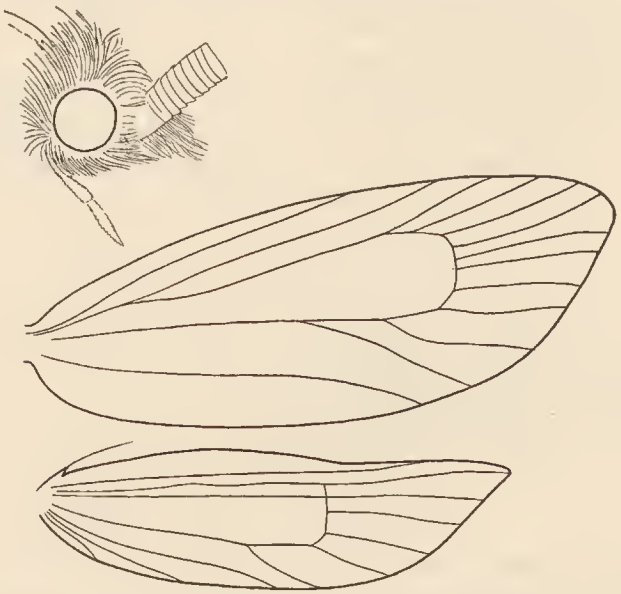


Fig. 855: *Ectropoceros acrotoma* gen. nov., spec. nov., female, head and wing neuration.

Eighth tergite sclerotized, of broadly conical shape, with two small bristly papillae at the top, eighth ventrite weak, forming a blunt lobe between concave lateral parts of tergite, with a group of subapical bristles; anapophyses strong, tightly connected with tergite. Ovipositor cutting, consisting of three stilettoes: two ventral ones formed by postapophyses which are dilated into thin blades, apically with serrulate and finely ciliate edge, united each other apically and with some 2—3 stout ventral teeth, apex bifid; dorsal stiletto shorter, slender. Ostium indefinite. Ductus bursae simple, gradually becoming wide below. Bursa copulatrix ovoid. Signa, two blunt external projections, each with an ovate basal plate, forming a short internal horn at its lower extremity.

Genotype *Ectropoceros acrotoma* spec. nov., female.

An interesting novel form, apparently of the *Incurvaria*-stock, but with somewhat degraded neuration: 1b simple, no accessory cell in fore wing; and with peculiar thickened antennae which character is unique in the family.

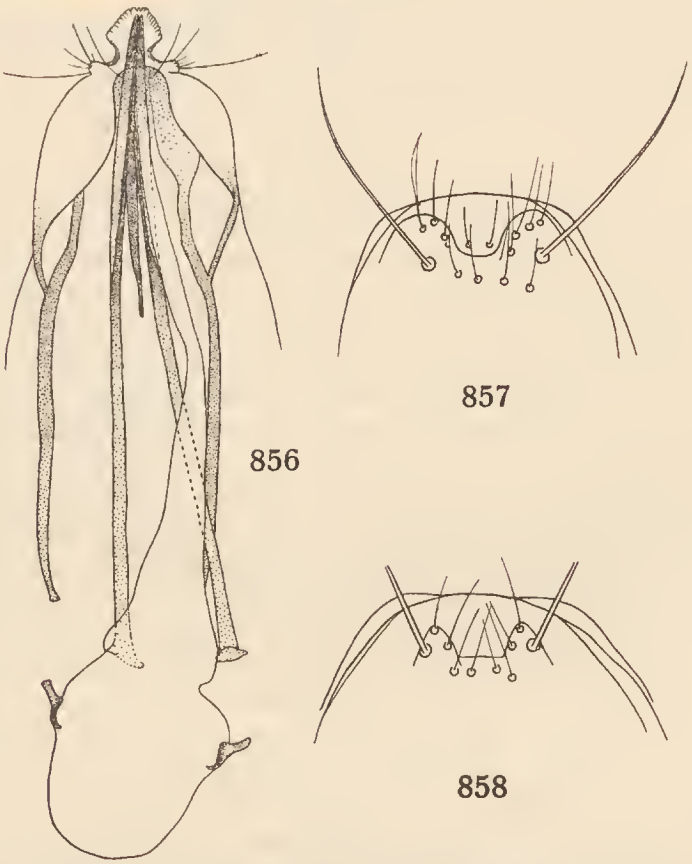
Key to the species of *Ectropoceros*

1. Fore wing with a straight transverse fascia . . . . . *acrotoma* spec. nov.
   Fore wing with an erect-triangular dorsal transverse spot . . . *leucosphena* spec. nov.

Ectropoceros acrotoma spec. nov. (figs. 855, 856, 857)

ἄκρον = marge, *τέμνω* = to cut

♀ 12 mm. Head purple-black, face with lower half entirely, white, upper half white in middle. Labial and maxillary palpi white. Antenna rather dull purple-black, extreme tip white. Thorax blackish-purple. Abdomen and legs fuscous-black, anterior leg paler. Fore wing subovate,



Genitalia of *Ectropoceros* gen. nov. Fig. 856: *acrotoma* spec. nov. female. Fig. 857: *idem*, limen, strongly magnified. Fig. 858: *leucosphena* spec. nov., limen.

broadest in middle, costa curved, more so anteriorly, apex obtusely pointed, termen long, rounded, oblique. Bronze-black, densely suffused with dull black. Somewhat less than the basal half shining violet, edge of this colour well-defined, straight, vertical; a moderate shining yellowish-white transverse fascia at $^1/_4$, tolerably straight, hardly outwards-oblique, edged on both sides with black; a large elongate-ovate shining violet patch extending from dorsum before tornus to above middle of termen, in middle almost reaching halfway across wing; posterior extremity of this patch extended into a strongly curved, outwardly convex transverse

projection before apex of wing, not reaching costa, preceded by a second transverse projection that is straight, vertical, clavate above, and is shorter than the preceding; a small triangular subapical dot on termen, extending over cilia and thus forming a conspicuous yellowish-white triangle. Costal and apical cilia bronze-black, two very outwards-oblique narrow whitish lines above costa before apex, terminal cilia shining violet. Hind wing brassy golden, slightly infuscated, apical half moderately suffused with fuscous-purple. Cilia purplish-fuscous.

Genital ventrite with a slightly pointed projection at each side, bearing four small and one long bristles. (Slides no. 1094, type.)

Sigi Camp, 1500 m, February 26, 1939. One specimen.

Ectropoceros leucosphena spec. nov. (fig. 858)

λευκός = white *σφήν* = wedge

♀ 12.5—14 mm. Head purple-black, face with lower half entirely white, upper half white in middle. Labial palpus black, median segment with white base, maxillary palpus white. Antenna entirely dull purple-black. Thorax blackish-purple or violet. Abdomen and legs purple-black, anterior leg paler. Fore wing shaped as in the preceding species. Bronze-black, densely suffused with dull black. Basal $^2/_5$ of wing shining violet, edge of this area straight, slightly outwards-oblique; an erect-triangular, inwardly oblique yellowish-white transverse spot, narrowly edged with dull black, situated on dorsum well beyond base, with acute top reaching more than $^3/_4$ across wing, its black edge extended to costa before $^1/_4$; a broad shining violet streak from before middle of wing running along dorsum, in middle occupying almost the lower half of wing, curved upwards before apex but not reaching costa, before posterior extremity forming a horizontal branch to apex; a triangular yellowish-white spot on tornus before apex extending over cilia as a conspicuous triangular notch; costa before apex with a longitudinal pale bronze spot. Cilia as in the preceding species. Hind wing and cilia as in the preceding species.

Seventh ventrite with a blunt projection at each side bearing some seven small and one long bristles. (Slide no. 1095, holotype.)

Sigi Camp, 1500 m, February 24, 1938 (holotype). Rattan Camp, 1200 m, March 6, 1939. Three specimens. Closely allied to the preceding species. The specimens from Rattan Camp may belong to a distinct species but are in a too damaged condition to allow a better identification.

ADELIDAE

Nemophora Hoffmannsegg, 1798

Nemophora Hoffmannsegg, 1798 (*nec* Hübner 1926; *Nemotois auctorum*), *in* Illiger, Verz. Käfer Preussens, p. 499, no. 176. Leach, *in* Brewster, Edinb. Encycl., vol. 9, p. 133, no. 452, 1815. Durrant, Lep. B. O. U. & Wollast. Exp., pp. 161—162, 1915 (synon.). Fletcher, Mem. Agr. Ind., Ent., vol. 11, p. 146, 1929.

Elasmion HÜBNER, 1806, Tentamen, p. 2 (*non deser.*).
Eutyphia HÜBNER, 1826, Verz. Eur. Schett., p. 416.
Epityphia HÜBNER, 1826, *ibidem*, p. 416.
Nemotois HÜBNER, 1826, *ibidem*, p. 416.
Nematophora AGASSIZ, 1846, Nom. Zool. Lep., vol. 46, Ind. Univ., p. 247. *Ibidem*, 8th edit., pp. 713—714, 1848.
Nematois WALSINGHAM, 1858, Oxf.-Cambr. Acc. List Brit. Lep., p. 81. Etc.
Uccetia WALKER, 1866, List Lep. Het. B. M., vol. 35, p. 1820.

The genitalia of the British representatives of this genus are described and figured by PIERCE (*Genit. Brit. Tineina*, p. 109, pl. 66, 1935), but his figures are rather simplistic and the aedoeagus is reproduced erroneously. The genitalia of the Indonesian species were treated recently (DIAKONOFF, *Treubia*, vol. 21, p. 174 et seq., 1951).

Tegumen short, broad. Uncus rounded, cap-like, ventral edge slightly emarginate. Socii rounded, pending pads. Gnathos strong, united, narrow, with a short rising point in middle, strongly dilated towards extremities. Valva cardinate, apparently but little articulated. Aedocagus, a narrow long and strong rod, sometimes furcate or finely spinose and with a few short spines towards orifice, vesica with a single and most peculiar cornutus: arrow-shaped and not retractile, but folding like a pen-knife in the body behind the saccus. Anellus small. Saccus very large, concave, tapering rostrad.

When the aedocagus is extruded before the copulation the arrow-shaped cornutus apparently unbends and serves as an anchor in the female genitalia. It seems that this arrow can be removed again, and is not thrown off in the bursa copulatrix, as it was present in all the male specimens studied by us.

Specific differences of the genitalia are slight and difficult to describe.

Key to the Papuan species of *Nemophora*

1. A fasciate postmedian orange costal patch not reaching dorsum 2
   A complete postmedian orange fascia 4
2. Postmedian orange patch dilated below; eyes in male contiguous . . . . . *cyanochrysa* MEYRICK
   Postmedian orange patch narrowed below; eyes in male separate 3
3. Postmedian orange patch connected with dorsum by a black streak . . . . . *profusella* WALKER
   This patch not connected with dorsum . . . . . *photodoxa* MEYRICK
4. Basal patch and postmedian fascia separated by a straight, direct fascia of ground colour . . . . . *hippophylax* MEYRICK
   Basal patch and postmedian fascia separated by a broad fascia of ground colour, more or less curved outward, and distinctly dilated towards dorsum . . . 5
5. Eyes in male separate; frons black; postmedian fascia on costa twice as narrow as the preceding fascia of ground colour . . . . . *chrysorrhabda* spec. nov.
   Eyes in male contiguous; frons ochreous; postmedian fascia on costa broader than the preceding fascia of ground colour . . . . . *homoeotropa* spec. nov.

Nemophora profusella (WALKER, 1866) (fig. 860)

Nemotois profusella WALKER, 1866, List Lep. Het. Brit. Mus., vol. 28, p. 1816. MEYRICK, Gener. Ins., fasc. 133, p. 6, 1912. Trans. Ent. Soc. Lond., vol. 87, p. 528, 1938.

Nemophora profusella, DURRANT, Lep. B. O. U. & Woll. Exp., p. 162, 1915.

Distribution: Netherlands New Guinea, Canoe Camp; British New Guinea, Papua, Kokoda, 1200 feet.

Uncus bluntly pointed. Socius moderate, rounded. Valva extending beyond top of uncus, bluntly pointed, cucullus gently curved outwards, sacculus with a rounded projection at base and a short process beyond this. Anellus erect-ovate. Aedoeagus finely spinose towards end, with a short, separate, and two approximated, small spikes. (Slide no. 994 D.)

Araucaria Camp, 800 m, March 18, 1939. One male.

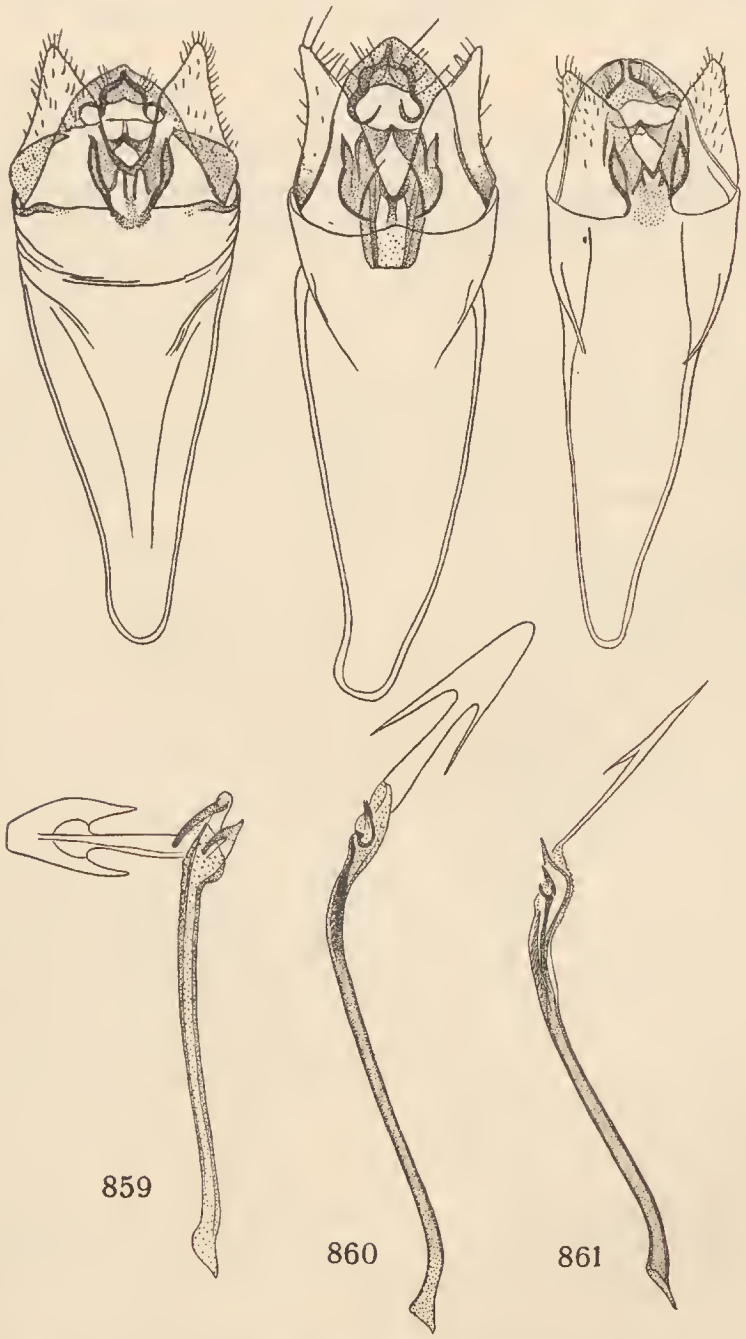
Mr. J. D. BRADLEY kindly sent us fine photographs of the genitalia of the type specimen (a male) in the British Museum which enabled us to identify the specimen with certainty.

Nemophora chrysorrhabda spec. nov. (fig. 859)

χρυσός = gold, ῥάβδος = a bar

♂ 12 mm. Head and thorax black. Antenna bronze, dark-ringed, scape swollen, metallic-grey. Palpus greyish, black-haired. Abdomen greyish-black or blackish-bronze. Legs purple-bronze, tarsi broadly whitish-ringed. Fore wing ovate-subtriangular, strongly dilated, broadest beyond middle; costa hardly curved anteriorly, moderately and gradually curved along posterior fourth, apex subobtuse, termen long, rounded, very oblique, tornus angulate. Brightly shining metallic purple-violet, mixed with golden scales. Basal patch rather dull, yellow, occupying less than $^1/_3$ of wing, edged with a rather irregular dull purplish-black line from $^1/_3$ of costa to about $^2/_5$ of dorsum (inwardly oblique), with two shining pale greenish-golden metallic longitudinal streaks: upper one along costa, narrowly edged with blackish above and beneath, to before posterior margin of basal patch, lower one just above fold, not edged, pointed, almost reaching that margin; an almost vertical transverse rather dull, yellow fascia from beyond middle of costa to dorsum before tornus, slightly dilated on costa, sometimes originating from middle of wing towards costa; with second fourth somewhat curved outward, edged above and below this curve straight; this fascia edged with dull purplish-black: anterior edge broad, narrowed towards dorsum, posterior linear, abruptly dilated along costal fifth; an irrorated small spot of purplish-black scales before middle of termen. Cilia fuscous-purple, shining. Hind wing semipellucent, thinly scaled: pale fuscous-greyish with purplish-golden gloss, becoming less transparent, fuscous-purplish towards apex. Cilia pale purple-fuscous.

Uncus bluntly pointed but more depressed than in the foregoing species. Socius smaller. Valva shorter, extending beyond top of uncus, more pointed, with a dark fold towards articulation, sacculus rounded at base, without a process beyond base, broader and shorter. Anellus much smaller,



Male genitalia of *Nemophora* HOFFMANNSEGG. Fig. 859: *chrysorrhabda*, spec. nov. Fig. 860: *profusella* WALKER. Fig. 861: *homoeotropa* spec. nov.

narrow. Saccus shorter than in the preceding. Aedoeagus finely denticulate towards the end, top short-furcate, each furca with a strong spine. (Slides no. 995 D, holotype, no. 996 D, paratype.)

Top Camp, 2100 m, January 25, 1939 (holotype, male), January 22—25, 1939. Sigi Camp, 1500 m, February 22, 1939. Six specimens.

Nemophora homoeotropa spec. nov. (fig. 861)

ὁμοιότροπος = equal of character

♂ 16 mm. Head yellowish-ochreous, a projecting tuft of scales on vertex above bases of antennae, face deep purple-metallic, eyes large, contiguous anteriorly. Palpus weak, hairy below, pale ochreous, terminal segment angularly bent downward, drooping, fuscous. Antennae silvery white, basal fourth ringed with dark fuscous, scape swollen, dark fuscous. Thorax fuscous ? (rubbed). Abdomen fuscous, indistinctly banded with pale ochreous. Legs pale ochreous-golden, anterior and median tarsus ringed and posterior tibia suffused with dull fuscous. Fore wing triangular-ovate, moderately broad, costa straight anteriorly, moderately curved towards apex, apex rather obtuse, termen slightly concave, very oblique, tornus broadly rounded, dorsum rather rounded. Bright metallic brassy-purple, markings rather dull yellow, edged with dull purple-black. Basal patch occupying somewhat less than $^1/_3$ of wing, margin slightly convex, from before $^1/_3$ of costa to before $^2/_5$ of dorsum, dark edge narrow; this patch traversed by two moderate metallic pale silvery-greenish longitudinal streaks: along costa and somewhat above middle respectively, costal one somewhat mixed with ground colour and narrowly edged below towards base with black; a rather broad transverse fascia from middle of costa to $^3/_4$ of dorsum, slightly inwards-oblique, gradually dilated towards costa, on costa less than twice as broad as basal patch, inner edge very bluntly bent below middle and appearing convex, dark edge broadest in middle, becoming very narrow towards costa and dorsum; posterior edge of fascia tolerably straight, dark-edged along upper half, edge moderate, lower extremity truncate; a moderate irroration of purple-black scales before termen somewhat below middle. Cilia bright metallic brassy-purple with an olive shine in certain lights. Hind wing semipellucent, thinly scaled, pale yellowish-golden, less than apical half opaque, glossy purple. Cilia pale yellowish-golden.

Uncus rounded. Socius moderate. Valva shorter than in the preceding species, just reaching top of uncus, broad, rather abruptly pointed, sacculus as in *chrysorrhabda*. Anellus moderate, erect-ovate. Aedoeagus finely spinose posteriorly, with one curved and one longer, straight apical spike. Saccus less narrowed than in the other two species. (Slide no. 997 D, type.)

Top Camp, 2100 m, January 19, 1939. One specimen. Nearest to the preceding.

LIST OF THE MICROLEPIDOPTERA COLLECTED BY THE EXPEDITION

The names of the collecting stations are those adopted by the Netherlands party of the Expedition; these are also the names used throughout the text. For the indications of the stations as used by the American party we may refer to the explanation of the map on page 8 of part I of this paper. The stations are listed in a geographical sequence and indicate vertical distribution of species and subspecies. The Baliem River Camp is placed in the last column, as the fauna of the Grand Valley had special attention of other authors.

As indicated in the Introduction a collection of Lepidoptera chiefly from the environs of the Humboldt Bay and Bewani Mountains was purchased in Hollandia and added to the collection of the Expedition. It contained only four species of Microlepidoptera which are listed here but not numbered and not included in the totals at the end of this list.

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebélè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
ALUCITIDAE															
1. *Diacrotricha guttuligera* spec. nov.						+									
2. *Deuterocopus famulus* MEYRICK				+	+										
3. *Fletcherella niphadothysana* spec. nov.															
4. *Platyptilia monotrigona* spec. nov.											+				
5. *Platyptilia phanerozona* spec. nov.												+			
6. *Oidaematophorus mesoleucus* spec. nov.												+		+	
7. *Oidaematophorus irenaeus* spec. nov.						+									
8. *Stenoptilia galactostacta* spec. nov.												+	+	+	
9. *Stenoptilia iriana* spec. nov.														+	
10. *Steganodactyla bürgersi* GAEDE															+
PHALONIIDAE															
11. *Arachniotes dactylota* spec. nov.								+							
12. *Clysiana scytalephora* spec. nov.												+			
TORTRICIDAE, TORTRICINAE															
Zacoriscini															
13. *Zacorisca cyprantha* MEYRICK										+					

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebélé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Ballem
14. *Zacorisca aptycha* spec. nov.				+		+									
15. *Zacorisca thiasodes* (MEYRICK)															+
16. *Zacorisca basilica* spec. nov.				+	+										
17. *Zacorisca toxopei toxopei* DIAKONOFF [1]	+			+											+
18. *Zacorisca tetrachroma* DIAKONOFF									+						
19. *Zacorisca aquamarina* spec. nov.				+											
20. *Zacorisca bovisanguis* spec. nov.									+			+			
21. *Chionothremma mesoxantha* spec. nov.									+		+				
22. *Chionothremma ferratilis* spec. nov.											+				
23. *Chionothremma sanguens* spec. nov.									+						
24. *Chionothremma patarea* (MEYRICK)															+
25. *Chionothremma melanoleuca* (DIAKONOFF)															+
26. *Chionothremma obscura* spec. nov.				+		+									+
27. *Chionothremma gracilis* spec. nov.															+
28. *Chionothremma ochricauda* spec. nov.					+			+							
29. *Chionothremma nebulicola* spec. nov.								+							
30. *Chionothremma auripes* spec. nov.					+										
31. *Chionothremma caelestis* spec. nov.						+									
32. *Chionothremma combusta* spec. nov.								+							
33. *Chionothremma ocellata* spec. nov.								+	+						
34. *Chionothremma placida* spec. nov.											+	+			
35. *Chionothremma citricaput* spec. nov.									+						
36. *Chionothremma carbonifera* spec. nov.									+						
37. *Chionothremma nigrangula* spec. nov.											+				
38. *Chionothrsmma marginata* spec. nov.											+				
39. *Chionothremma euxantha* spec. nov.									+		+				
40. *Chionothremma mutans* spec. nov.											+	+			
41. *Chionothremma palleseens* spec. nov.											+				
42. *Choinothremma nivisperennis* spec. nov.											+	+	+	+	
43. *Chionothremma auriflua* spec. nov.											+				
44. *Chionothremma soligena* spec. nov.												+			
45. *Diphteropyga niphadea* spec. nov.												+			
46. *Isotenes megalea* spec. nov.											+				
47. *Isotenes melanotes* spec. nov.												+			
48. *Isotenes pudens* spec. nov.									+		+				
Isotenes spec.													+		
49. *Isotenes mesonephela* spec. nov.											+				
Isotenes mesonephela modesta var. nov.										+	+				
50. *Isotenes marmorata* spec. nov.						+		+			+			+	
51. *Isotenes prosantes* spec. nov.				+											

[1] Also from Cyclops Mountains.

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebèlè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
52. *Isotenes erasa* spec. nov.								+			+				
53. *Isotenes rhodosphen* spec. nov.										+	+				
54. *Isotenes crobylota* (MEYRICK)				+											
55. *Isotenes sematophora* spec. nov.				+											
56. *Isotenes melanopa* spec. nov.						+									
57. *Isotenes melancalymma* spec. nov. (= *epiperca* DIAKONOFF)															
Cacoeciini															
58. *Leptochroptila daratua* (DIAKONOFF)				+											
59. *Anisotenes cacotechna* spec. nov.											+				
60. *Anisotenes phanerogonia* spec. nov.									+	+	+				
61. *Anisotenes schizolitha* spec. nov.								+							
62. *Anisotenes dracontodonta* spec. nov.											+		+		
63. *Anisotenes leucophthalma* spec. nov.												+			
64. *Anisotenes bathygrapha* spec. nov.												+		+	
65. *Anisotenes libidinosa* spec. nov.														+	
66. *Anisotenes stemmatostola* spec. nov.									+		+				
67. *Anisotenes decora* spec. nov.												+			
68. *Anisotenes pyrra* spec. nov.											+				
69. *Anisotenes amphiloga* spec. nov.											+				
70. *Anisotenes fallax* spec. nov.											+				
71. *Anisotenes scoliographa* spec. nov.											+				
72. *Anisotenes ellipegrapha* spec. nov.								+							
73. *Anisotenes oxygrapta* spec. nov.												+			
74. *Anisotenes spodotes* spec. nov.						+		+			+				
75. *Anisotenes acrodasys* spec. nov.											+				
76. *Parachorista apheles* spec. nov.						+									
77. *Parachorista mimcla* spec. nov.						+		+							
78. *Parachorista oligosta* spec. nov.								+							
79. *Parachorista pityrochroa* spec. nov.						+									
80. *Parachorista rhopalodes* spec. nov.					+	+									
81. *Parachorista colobodesma* spec. nov.						+									
82. *Parachorista anthracograpta* spec. nov.						+									
83. *Parachorista verecunda* spec. nov. (*Paradichelia*)						+									
84. *Parachorista acmemorpha* spec. nov.								+							
85. *Parachorista anassa* spec. nov.											+				
86. *Parachorista cricophora* spec. nov.											+				
87. *Parachorista psara* spec. nov.						+									
88. *Parachorista lagaroptycha* spec. nov.											+				
89. *Parachorista stenoptera* spec. nov.											+				
90. *Parachorista ochra* spec. nov.									+						
91. *Parachorista euphycs* spec. nov.											+				

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebelè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
92. *Parachorista trulligera* spec. nov.											+				
93. *Parachorista basalis* (Diakonoff)					+					+					
94. *Parachorista anisographa* spec. nov.									+						
95. *Parachorista lutescens* spec. nov.									+						
96. *Heterochorista dispersa* spec. nov.											+				
97. *Isochorista papuana* spec. nov.															+
98. *Isochorista sulcata* spec. nov.											+				
99. *Isochorista polysperma* spec. nov.															+
100. *Thrincophora archboldi* spec. nov.											+	+			
101. *Thrincophora ostracopis* (Meyrick)					+										
102. *Thrincophora leucotorna* spec. nov.								+	+	+					
103. *Thrincophora nebulosa* spec. nov.											+				
104. *Adoxophyes controversa* spec. nov.					+										
105. *Adoxophyes vindicata* Meyrick		+		+	+										+
106. *Adoxophyes templana* (Pagenstecher)	+		+												
107. *Adoxophyes nebrodes* Meyrick			+	+											
108. *Adoxophyes acropeta* spec. nov.									+						
109. *Adoxophyes aniara* Diakonoff					+			+	+	+					
110. *Adoxophyes marmarygodes* spec. nov.									+	+	+				
111. *Chresmarcha sibyllina* Meyrick							+								
112. *Chresmarcha enaemargyrea* spec. nov.	+														
113. *Choanographis diagrapha* spec. nov.									+		+				
114. *Choanographis paragrapha* spec. nov.						+									
115. *Choanographis argyrocyma* spec. nov.											+				
116. *Choanographis tetraulax* spec. nov.							+								
117. *Choanographis hamuligera* spec. nov.												+	+		
118. *Choanographis diaphora* spec. nov.								+							
119. *Epagoge conspersa* spec. nov.					+			+			+				
120. *Paradichelia clarinota* spec. nov.											+				
121. *Paradichelia fulvitacta* spec. nov.									+						
122. *Paradichelia ocellata* spec. nov.											+				
123. *Homona aestivana* (Walker)			+	+	+										
124. *Neocalyptis monotoma* spec. nov.								+							
125. *Harmologa arcnicolor* spec. nov.														+	
126. *Diadelomorpha clavigera* spec. nov.											+				
127. *Syndemis plumosa* spec. nov.								+			+				
128. *Acolostoma melanostoecha* spec. nov.														+	
129. *Acolostoma orophila* spec. nov.													+		
130. *Hiceteria heptatoma* spec. nov.											+	+			
131. *Hiceteria heterogona* spec. nov.											+				
132. *Hiceteria stannosa* spec. nov.								+							
133. *Carphomigma leontodes* spec. nov.										+		+			
134. *Arizelana margaritobola* spec. nov.						+	+								

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebèlè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
135. *Arizelana pyroplegma* spec. nov.								+		+	+				
136. *Arizelana bibatrix* spec. nov.										+					
137. *Aphthonocosma plutarcha* spec. nov.				+											
138. *Nikolaia melanopsygma* spec. nov.						+					+				
139. *Arctephora iubata* spec. nov.						+		+							
Cnephasiini															
140. *Capnoptycha thelea* spec. nov.								+	+						
141. *Rhomboceros barbata* spec. nov.								+	+						
142. *Rhomboceros pulverulenta* spec. nov.								+	+						
143. *Rhomboceros iridescens* spec. nov.								+							
144. *Rhomboceros ethica* spec. nov.											+				
145. *Aplastoceros dentifera* spec. nov.											+				
146. *Aplastoceros plumbata* spec. nov.											+				
147. *Aplastoceros peneploca* spec. nov.											+				
148. *Aplastoceros carphalea* spec. nov.											+				
149. *Aplastoceros euetrias* spec. nov.										+					
150. *Cleptacaca tryphera* spec. nov.							+								
151. *Tremophora scintillans* spec. nov.										+	+				
152. *Tremophora carycina* spec. nov.											+				
153. *Tremophora alopex* spec. nov.							+	+							
154. *Tremophora guttulosa* spec. nov.											+				
155. *Tremophora coniortus* spec. nov.										+	+				
156. *Mesocalyptis morosa* spec. nov.											+				
157. *Mesocalyptis zonata* spec. nov.							+								
158. *Taeniarchis acrotoma* spec. nov.					+										
159. *Taeniarchis poliostoma* spec. nov.												+			
160. *Dicellitis acrographa* spec. nov.					+										
161. *Dicellitis chrysonetha* spec. nov.						+									
162. *Pternozyga melanoterma* spec. nov.											+				
163. *Beryllophantis cochlias* MEYRICK										+					
164. *Pandurista encarsiotoma* spec. nov.						+									
Peroneini															
165. *Spatalistis perusta* spec. nov.												+			
166. *Spatalistis argyrosperma* spec. nov.											+	+			
167. *Spatalistis violacea* spec. nov.												+			
168. *Eremas polystalagma* spec. nov.										+					
169. *Polyortha ornithopora* spec. nov.										+					
EUCOSMINAE															
Argyroplocini															
170. *Bactra stramenticia* spec. nov.														+	

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigl	Lower Mist	Mist	Top	Iebèlè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Ballem
171. *Lobesia paradisea* spec. nov.											+				
172. *Lobesia tritoma* spec. nov.					+										
173. *Endotlcnia simplissima* spec. nov.										+					
174. *Metascliistis hemicyclica* spec. nov.									+						
175. *Metasehistis hcmieapnodes* spec. nov.														+	
176. *Metaschistis haematina* spec. nov.											+				
177. *Metaschistis purpurescens* spec. nov.								+			+				
178. *Metaschistis sappiroflua* spec. nov.						+					+				
179. *Metasehistis gypsopa* spec. nov.											+				
180. *Metaschistis cretata* spec. nov.						+									
181. *Anathamna chionopyra* spec. nov.										+					
182. *Argyroploce hemeronyx* spec. nov.										+	+				
183. *Argyroploce margaritopa* spec. nov.										+					
184. *Argyroploce rivulosa* spec. nov.				+											
185. *Argyroploce lamyra* Meyrick		+													
186. *Argyroplocc harmoniea* Meyrick						+									
187. *Argyroploce leucoeteis* spec. nov.											+				
Eucosmini															
188. *Peridaedala hierograpta* Meyrick								+							
189. *Peridaedala erastidoehroa* spec. nov.									+	+					
190. *Peridaedala prasina* spec. nov.									+			+			
191. *Peridaedala archaea* spec. nov.													+		
192. *Hermenias niphobola* spec. nov.						+									
193. *Hermenias terminata* spec. nov.													+		
194. *Hermenias saxieolor* spec. nov.												+			
195. *Hermenias seoliomelas* spec. nov.												+			
196. *Hermenias merodelta* spec. nov.									+						
197. *Hermenias angulata* spec. nov.											+				
198. *Hermenias psimythographa* spec. nov.											+				
199. *Hermenias dirupta* spec. nov.												+			
200. *Hermenias conglomerata* spec. nov.											+	+			
201. *Hermenias platysplena* spec. nov.												+			
202. *Hermenias dendrosema* spec. nov.												+			
203. *Hermenias serrula* spec. nov.												+			
204. *Hermenias pollostes* spec. nov.						+									
205. *Hermenias gracilis* spec. nov.												+			
206. *Hermenias eugena* spec. nov.									+						
207. *Hermenias textrix* spec. nov.												+			
208. *Hermenias eorticina* spec. nov.												+			
209. *Hermenias tristis* spec. nov.												+			
210. *Hermenias xylogena* spec. nov.												+			
211. *Bathrotoma angeliea* spec. nov.								+							

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Tebété	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
212. *Allohermenias tenuitexta* spec. nov.											+			+	
213. *Allohermenias subpetraea* spec. nov.											+				
214. *Spilonota selene* spec. nov.														+	
215. *Spilonota pyrochlora* spec. nov.															
216. *Spilonota lobata* spec. nov.					+					+	+	+			
217. *Acroclita allodapa* spec. nov.					+										
218. *Eucosma inconspicua* spec. nov.				+											
219. *Pseudogalleria toxogramma* (Meyrick)				+											
220. *Pseudogalleria toxotis* spec. nov.				+				+							
221. *Pseudogalleria amethystina* spec. nov.															
♂22. *Crocostola hyperphyes* spec. nov.						+	+								
Enarmoniini															
223. *Enarmonia pulverula* (Meyrick)						+	+								
224. *Enarmonia alternans* spec. nov.						+									
225. *Sereda myodes* spec. nov.															
Schoenotenidae															
Proselena spec.										+					
226. *Obligotenes polylampes* spec. nov.					+					+	+				
227. *Oligotenes chrysoteuches* spec. nov.											+				
228. *Stenotenes acroptycha* spec. nov.									+		+				
229. *Stenotenes incudis* spec. nov.										+	+				
230. *Metachorista hierophantis* spec. nov.											+	+			
231. *Metachorista megalophrys* spec. nov.											+		+		
232. *Metachorista refracta* spec. nov.									+		+				
233. *Metachorista deltophora* spec. nov.											+				
234. *Metachorista ursula* Meyrick										+	+		+		
235. *Metachorista austera* spec. nov.											+				
236. *Metachorista loepa* spec. nov.								+							
237. *Metachorista mesata* spec. nov.											+				
238. *Copidostoma chrysodoris* spec. nov.											+		+		
239. *Schoenotenes xenographa* spec. nov.						+					+				
240. *Schoenotenes oenographa* spec. nov.											+				
241. *Schoenotenes tineoides* spec. nov.						+									
242. *Schoenotenes leptomorpha* spec. nov.								+		+					
243. *Schoenotenes triangulum* spec. nov.						+		+							
244. *Schoenotenes infuscata* spec. nov.										+	+				
245. *Schoenotenes farinata* spec. nov.						+			+						
246. *Schoenotenes oligosema* spec. nov.														+	
247. *Schoenotenes rubiginosa* spec. nov.											+				
248. *Schoenotenes megalops* spec. nov.											+				
249. *Schoenotenes sitochroma* spec. nov.											+				

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebélé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
250. *Schoenotenes metagrapha* spec. nov.					+			+							+
251. *Schoenotenes pallida* spec. nov.										+					
252. *Schoenotenes trachygrapha* spec. nov.					+			+							
253. *Schoenotenes affinis* spec. nov.									+						
254. *Schoenotenes subtilis* spec. nov.														+	
255. *Schoenotenes vana* spec. nov.									+						
256. *Schoenotenes chalcotypa* spec. nov.								+							
257. *Schoenotenes argentea* spec. nov.											+				
258. *Schoenotenes coccyx* spec. nov.											+				
259. *Schoenotenes cuspidata* spec. nov.											+				
260. *Schoenotenes virens* spec. nov.									+		+				
261. *Schoenotenes beryllodes* spec. nov.										+	+				
262. *Schoenotenes olivacea* spec. nov.											+				
263. *Schoenotenes lithodes* spec. nov.												+			
264. *Schoenotenes anthracospila* spec. nov.												+	+	+	
265. *Schoenotenes acrogonia* spec. nov.											+	+			
266. *Schoenotenes rhodantha* spec. nov.											+				
267. *Schoenotenes orphnina* spec. nov.											+	+			
268. *Schoenotenes glaucops* spec. nov.											+				
269. *Schoenotenes ophiodora* spec. nov.												+			
270. *Schoenotenes dimorpha* spec. nov.						+					+				
271. *Schoenotenes teratographa* spec. nov.														+	
272. *Schoenotenes chrysauges* spec. nov.											+	+			
273. *Schoenotenes chrysopluta* spec. nov.											+	+			
274. *Schoenotenes agama* spec. nov.											+				
275. *Schoenotenes microphthalma* spec. nov.											+	+			
276. *Schoenotenes nanodes* spec. nov.						+									
277. *Schoenotenes chrysoconis* spec. nov.											+				
278. *Schoenotenes chalcitis* spec. nov.												+			
279. *Schoenotenes aurispersa* spec. nov.												+			
280. *Schoenotenes latenota* spec. nov.												+			
281. *Schoenotenes plagiostibus* spec. nov.										+	+				
282. *Schoenotenes velutina* spec. nov.									+						
283. *Schoenotenes prophanes* spec. nov.											+				
284. *Schoenotenes lichenochroma* spec. nov.								+							
285. *Schoenotenes mesotrauma* spec. nov.						+									
286. *Schoenotenes sufflava* spec. nov.											+				
287. *Schoenotenes phloeotis* spec. nov.											+				
288. *Schoenotenes platyptila* spec. nov.											+	+			
289. *Schoenotenes halirrhothia* (Meyrick)							+	+							
290. *Schoenotenes petraea* spec. nov.								+							
291. *Schoenotenes aphrodes* spec. nov.											+				
292. *Schoenotenes irresoluta* spec. nov.															+

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebélè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
293. *Schoenotenes argyrolemma* spec. nov.									+		+				
294. *Schoenotenes cylicophora* spec. nov.										+	+				
295. *Schoenotenes octostieta* Meyrick				+											
296. *Schoenotenes operosa* spec. nov.					+			+							
297. *Schoenotenes paehydesma* spec. nov.				+		+		+		+					
298. *Schoenotenes croceosema* nom. nov.						+									
299. *Schoenotenes conioplegma* spec. nov.				+				+							
300. *Schoenotenes caneseens* spec. nov.															
301. *Xenotenes mierastra* spec. nov.				+											
Chlidanotidae															
302. *Demeijerella xanthorhina* spec. nov.					+										
Carposinidae															
303. *Meridarchis cosmia* spec. nov.									+	+					+
304. *Meridarchis anisopa* spec. nov.										+					
305. *Meridarchis oculosa* spec. nov.							+				+				
306. *Meridarchis globosa* spec. nov.												+			
307. *Meridarchis pentadrachma* spec. nov.									+		+				
308. *Meridarchis chionochalca* spec. nov.											+				
309. *Meridarchis eapnographa* spec. nov.											+				
310. *Meridarchis melanantha* spec. nov.											+				
311. *Meridarchis melanopsaeas* spec. nov.											+	+			
312. *Meridarchis cophoxylon* spec. nov.							+								
313. *Meridarchis niphoptila* Meyrick											+				
314. *Meridarchis goes* spec. nov.									+						
315. *Spartoneura xerocrastis* spec nov.											+				
316. *Camacostoma mesosapra* spec. nov.										+					
317. *Carposina mnia* spec. nov.												+	+		
318. *Anomoeosis phanerostigma* spec. nov.												+	+		
319. *Anomoeosis barbara* spec. nov.													+		
320. *Anomoeosis carphopasta* spec. nov.													+		
321. *Anomoeosis conites* spec. nov.													+		
322. *Actenoptila cucosma* spec. nov.												+			
323. *Actenoptila eustales* spec. nov.													+		+
324. *Actenoptila heliotropia* spec. nov.													+		
325. *Heterogymna anterastes* spec. nov.												+			
326. *Heterogymna xenochroma* spec. nov.														+	
327. *Heterogymna parthenia* spec. nov.													+		
328. *Heterogymna stenygra* spec. nov.												+			
329. *Heterogymna melanocoeca* spec. nov.											+				
330. *Heterogymna polystigma* spec. nov.												+			
331. *Blipta technica* spec. nov.															

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebéïé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
332. *Xyloides lamproxylon* spec. nov.									+						
333. *Hystrichomorpha acanthina* spec. nov.											+				
COPROMORPHIDAE															
334. *Copromorpha lignisquama* spec. nov.								+							
GELECHIIDAE															
335. *Aristotelia schistopa* spec. nov.						+									
336. *Aristotelia triclasma* spec. nov.								+							
337. *Emmetrophysis lanceolata* spec. nov.														+	
338. *Thiotricha chionochrysa* spec. nov.															+
339. *Atasthalistis gnophrina* (FELDER)		+													
340. *Prodosiarcha catadamanta* spec. nov.	+														
341. *Hemiarcha melanogastra* spec. nov.								+							
342. *Anarsia anisodonta* spec. nov.						+									
343. *Homotima purpurata* spec. nov.								+							
344. *Hypatima subdentata* spec. nov.								+	+						
345. *Hypatima artochroma* spec. nov.									+		+				
346. *Hypatima cryptopluta* spec. nov.					+										
347. *Hyptiastis microcritha* spec. nov.		+													
348. *Crocanthes protoma* spec. nov.					+										
349. *Crocanthes sceptrophora* spec. nov.	+	+	+												
350. *Crocanthes megalophthalma* spec. nov.				+	+										
351. *Crocanthes pyrostola* spec. nov.				+											
352. *Crocanthes heliocharis* spec. nov.				+	+										
353. *Crocanthes heliograpta* MEYRICK					+										
354. *Crocanthes philotima* spec. nov.	+	+													
355. *Crocanthes xanthorrhoca* spec. nov.	+	+	+												
356. *Crocanthes leucodonta* spec. nov.				+											
357. *Crocanthes anactostola* spec. nov.							+								
358. *Gonaepa dysthyma* spec. nov.					+										
359. *Periphorcetis disperma* spec. nov.							+								
360. *Sphenocrates neptis* spec. nov.						+									
361. *Asmenistis semifracta* spec. nov.						+									
362. *Lecithocera nitens* spec. nov.						+	+	+	+						
363. *Lecithocera abrasa* spec. nov.											+				
364. *Lecithocera rhinoceros* spec. nov.				+											
365. *Lecithocera capra* spec. nov.							+								
366. *Lecithocera induta* spec. nov.					+										
367. *Lecithocera brachyptila* spec. nov.						+									
368. *Lecithocera purpurea* spec. nov.							+								
369. *Lecithocera hemitoma* spec. nov.										+	+				
370. *Lecithocera lutescens* spec. nov.										+					

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebelé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
371. *Leeithoeera baryoma* spec. nov.								+							
372. *Lecithocera rhabdostoma* spec. nov.					+			+							
373. *Lecithoeera liberalis* spec. nov.												+	+		
374. *Lecithoecra perspicua* spec. nov.								+							
375. *Leeithoeera sextaeta* spec. nov.								+							
376. *Lecithoeera pachystoma* spec. nov.											+				
377. *Lecithocera megalosperma* spec. nov.											+				
378. *Lecithocera submersa* spec. nov.								+							
379. *Lecithocera spinigera* spec. nov.					+	+	+								
380. *Lecithoccra sublunata* spec. nov.				+	+										
381. *Brachmia subsignata* spec. nov.					+										
COSMOPTERYGIDAE															
382. *Neachandella desis* spec. nov.								+							
383. *Labdia citroglypta* MEYRICK							+								
384. *Dorodoca melanostigma* spec. nov.						+									
385. *Proterocosma marginata* spec. nov.										+					
386. *Proterocosma dualis* spec. nov.					+					+					
387. *Acleracra pancarphalea* spec. nov.												+			
388. *Dynatophysis perichrysa* spec. nov.								+							
389. *Melanesthes disema* spec. nov.						+									
390. *Limnaecia simplex* spec. nov.				+											
391. *Limnaecia thiosima* spec. nov.											+				
392. *Limnaecia bilineata* spec. nov.								+	+						
393. *Limnaecia parallelograpta* spec. nov.					+										
394. *Limnaecia nephelochalca* spec. nov.								+							
395. *Limnaecia nigrispersa* spec. nov.											+				
396. *Limnaecia megalochlamys* spec. nov.											+				
397. *Limnaecia ensigera* spec. nov.					+										
SCAEOSOPHIDAE															
398. *Cosmiosophista traehyopa* spec. nov.						+									
399. *Bathybalia microsperma* spec. nov.						+									
XYLORYCTIDAE															
400. *Chironeura ehrysocyma* spec. nov.					+										
401. *Pansepta tunsa* spec. nov.		+													
402. *Pansepta tactica* spec. nov.				+											
403. *Pansepta splendens* spec. nov.										+					
404. *Pansepta languescens* spec. nov.											+				
405. *Pansepta amoerocera* spec. nov.						+									
406. *Athrypsiastis chionodes* spec. nov.		+													
407. *Athrypsiastis delicata* spec. nov.				+											
408. *Niphorycta hemipercna* spec. nov.					+	+									

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebèlè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
409. *Paralecta conflata* spec. nov.					+										
410. *Paralecta hexagona* spec. nov.				+	+										+
411. *Paralecta acutangula* spec. nov.										+					
412. *Paralecta rhodometallica* spec. nov.												+			
413. *Paralecta rhodometallica flagellatta* subspec. nov.						+									
414. *Arignota decipiens* spec. nov.									+						
415. *Arignota clavatrix* spec. nov.											+				
416. *Cryptophasa arythmologa* Meyrick				+	+				+						
417. *Cryptophasa pseudogramma* Meyrick								+							+
418. *Cryptophasa obscura* spec. nov.											+				
419. *Cryptophasa curialis curialis* (Meyrick)				+											
420. *Cryptophasa curialis clarinota* subspec. nov.					+	+									
421. *Cryptophasa curialis pallida* subspec. nov.								+	+	+	+				
422. *Cryptophasa iorhypara* spec. nov.															+
423. *Cryptophasa aggesta* Meyrick				+	+										
424. *Cryptophasa chlorotis* spec. nov.					+										
425. *Cryptophasa niphadobela* spec. nov.					+										
426. *Cryptophasa ranunculus* spec. nov.					+										
427. *Cryptophasa chionotarsa brunnea* subspec. nov.				+											
428. *Cryptophasa hades* spec. nov.					+										
Cryptophasa psammochta Meyrick [1]															
429. *Cryptophasa dryoxantha* Meyrick				+	+				+						
430. *Cryptophasa nesograpta* Meyrick								+	+						
431. *Crypthopasa crocochorda* Meyrick [1]								+							
432. *Cryptophasa chionacra* spec. nov.				+											
Cryptophasa geron spec. nov. [1]															
433. *Cryptophasa ensigera* Meyrick		+													
434. *Stachyneura sceliphrodes* (Meyrick)		+													
435. *Eriogenes mesogypsa* Meyrick		+													
436. *Xylorycta hypatolimnas* spec. nov.												+			
437. *Phthonerodes anthracopsara* spec. nov.											+				
438. *Phthonerodes aristaepennis* spec. nov.											+				
439. *Phthonerodes cryptoleuca* spec. nov.							+								
Stenomidae															
440. *Nothochalara sordida* spec. nov.				+											
441. *Proscedes torquigera* spec. nov.				+	+										
442. *Agriophara parallela* spec. nov.							+								
443. *Agriophara virescens* spec. nov. [2]	+														
444. *Agriophara heterochroma* spec. nov.										+					
445. *Agriophara bradleyi* spec. nov.				+				+							

[1]) Purchased, from Mount Hager, Netherlands New Guinea, 1650—1750 meters.

[2]) Cyclops Mountains.

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Iebélé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
446. *Agriophara biornata* spec. nov.										+					
447. *Agriophara nephelopa* spec. nov.									+		+				
OECOPHORIDAE															
448. *Xylesthes asper* spec. nov.											+				
449. *Acriotes saprocarpodes* spec. nov.						+									
450. *Hypercallia sarcodes* spec. nov.				+											
451. *Euzelotica acrosperma* spec. nov.											+				
452. *Scorpiopsis diplancta* MEYRICK											+				
453. *Chezala cathara* spec. nov.											+				
454. *Epicurica cinnamomea* spec. nov.											+				
455. *Epicurica bilineata* spec. nov.											+				
456. *Epicurica nebuligera* spec. nov.				+											
457. *Epicurica hystata* spec, nov.														+	
Epicurica spec.															+
458. *Eulylecoctes rhodophylla* spec. nov.											+				
459. *Cormotypa leucochrysa* spec. nov.											+				
460. *Antiopala copiara* spec. nov.													+		
461. *Machaeritis epidela* spec. nov.					+										
462. *Ocystola fumosa* spec. nov.												+			
463. *Delonoma pyrrhoplecta* MEYRICK				+	+										
Tonica cyanodoxa MEURICK [1])															
464. *Tonica nigrimarginata* spec. nov.			+												
ORNEODIDAE															
465. *Orneodes semophantis* MEYRICK								+	+						
466. *Orneodes eudasys* spec. nov.										+					
467. *Orneodes xanthozona* spec. nov.										+					
468. *Orneodes micrographa* spec. nov.									+						
469. *Orneodes niphadosema* spec. nov.											+				
470. *Orneodes argyrospodia* spec. nov.										+					
AEGERIIDAE															
471. *Trilochana smaragdina* spec. nov.			+												
472. *Melittia gigantea tigripes* subspec. nov.	+														
473. *Melittia amboinensis erythrina* subspec. nov.				+											
474. *Melittia nepcha xanthodes* subspec. nov.	+														
475. *Paranthrene hyalochrysa* spec. nov.				+											
HELIODINIDAE															
476. *Agalmoscelis resplendens* spec. nov.	+	+						+							
477. *Agalmoscelis xanthochares* (MEYRICK)		+			+										
478. *Agalmoscelis deceptoria* (MEYRICK)				+											

[1]) Purchased (coll. STÜBER), Bewani Mountains, Ampas.

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Jebèlè	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
479. *Protanystis familiaris* spec. nov.					+		+		+						
480. *Agrioscelis erythracra* spec. nov.									+						
481. *Sipsa tritoma* spec. nov.				+											
482. *Hethmoscelis chaleothysana* spec. nov.						+									
483. *Xestocasis antirrhopa* spec. nov.		+													
484. *Eudaemoneura haematosema* spec. nov.								+							
485. *Adamantoscelis eucyanea* spec. nov.				+											
486. *Thriambeutis deuterarcha* MEYRICK				+											
GLYPHIPTERYGIDAE															
487. *Hilarographa spermatodesma* spec. nov.									+						
488. *Imma niphopelta luteseens* subspec. nov.				+											
489. *Imma aristogiton* spec. nov.				+											
490. *Imma selenaea* spec. nov.						+									
491. *Imma inelinata* spec. nov.								+							
492. *Imma atrotacta* spec. nov.									+						
493. *Imma arenaria* spec. nov.		+													
494. *Tortyra divitiosa* (WALKER)				+											
495. *Anthophila basalis* (FELDER)		+													
496. *Polygiton pachypus* spec. nov.		+		+											
497. *Choreutis simplex* spec. nov.						+									
ELACHISTIDAE															
498. *Cosmiotes epicaeria* spec. nov.													+		
499. *Elachista griseola* spec. nov.													+		
SCYTHRIDAE															
500. *Seythris solitaria* spec. nov.						+									
YPONOMEUTIDAE															
501. *Argyresthia nivifraga* spec. nov.													+	+	
502. *Porphyroerates aurostricta* spec. nov.	+														
503. *Iriania mystica* spec. nov.							+								
504. *Iriania anisoptera* spec. nov.					+										
505. *Iriania tricosma* spec. nov.				+											
506. *Iriania auriflua* spec. nov.						+									
507. *Iriania minor* spec. nov.					+										
508. *Iriania ochlodes* spec. nov.						+									
509. *Iriania lutescens* spec. nov.						+									
510. *Doeostoma insignis* spec. nov.						+		+							
511. *Toxopeia demodes* spec. nov.										+					
512. *Anticrates argyroplintha chrysaema* subspec. nov.						+									
513. *Laetura empedarthra* MEYRICK						+			+						
514. *Laetura conflagrans* (WALKER)	+														

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Jebélé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
515. *Lactura floricoma* MEYRICK				+											
516. *Lactura aurosa* spec. nov.								+							
517. *Lactura erythrodendron* spec. nov.					+										
518. *Lactura pyronympha* MEYRICK				+											
519. *Lactura plectica* spec. nov.								+							
520. *Lactura ophiucha xanthodes* subspec. nov.								+	+						
521. *Lactura vulnerosa* spec. nov.			+												
522. *Lactura bisecta* spec. nov.					+										
523. *Lactura anaemoptila* spec. nov.				+											
524. *Lactura ophioglossa* MEYRICK					+										
525. *Lactura acrantha* spec. nov.				+											
AMPHITHERIDAE															
526. *Amphithera choanogena* spec. nov.									+	+	+	+		+	
527. *Amphithera euniphadopa* spec. nov.								+							
528. *Amphithera personata* spec. nov.											+				
529. *Amphithera culampra* spec. nov.									+						
530. *Amphithera poliochlamys* spec. nov.												+	+	+	
531. *Amphithera crimnodes* spec. nov.											+	+			
532. *Amphithera nivilita* spec. nov.						+									
533. *Amphithera aurea* spec. nov.														+	
534. *Chalcoteuches chlorantha* spec. nov.									+		+				
LITHOCOLLETIDAE															
535. *Guttigera rhythmica* spec. nov.											+				
536. *Guttigera albicaput* spec. nov.										+					
537. *Hypectopa ornithographa* spec. nov.												+			
538. *Acrocercops heptadrachma* spec. nov.						+									
539. *Acrocercops timia* spec. nov.				+											
540. *Acrocercops argentigera* spec. nov.												+			
541. *Acrocercops plumbilinea* spec. nov.		+													
542. *Iraina periplecta* spec. nov.				+											
543. *Parectopa ceryx* spec. nov.													+		
544. *Caloptilia euhelia* spec. nov.										+					
545. *Caloptilia tmetica* spec. nov.						+									
EPERMENIIDAE															
546. *Ochromolopis oculigera* spec. nov.													+		
547. *Ochromolopis bidentata* spec. nov.													+		
PLUTELLIDAE															
548. *Eidophasia peristigma* spec. nov.													+		
549. *Dieda scuticornis* spec. nov.								+							

Altitude in meters	0	50—150	700—750	800—850	1150—1200	1450—1650	1450—1600	1800	2150	2200	2800	3250—3300	3500—3650	3800	1600
Names of Collecting Stations	Humboldt Bay	Bernh. & Idenb. R.	Above Bernhard	Araucaria	Rattan	Sigi	Lower Mist	Mist	Top	Tebélé	Moss Forest	Lake Habbema	Letterbox	Scree Valley	Baliem
LYONETIIDAE															
550. *Opogona chrysangela* spec. nov.		+													
551. *Opogona melanopasta* spec. nov.					+										
552. *Opogona nephelodesma* spec. nov.														+	+
553. *Opogona periscma* spec. nov.													+	+	
554. *Opogona salpictes* spec. nov.									+						
555. *Opogona chrysocapna* spec. nov.								+							
556. *Opogona subtilis* spec. nov.					+										
557. *Asymplecta phorbiophora* spec. nov.						+									
558. *Orochion undulosa* spec. nov.													+	+	
559. *Orochion sororcula* spec. nov.														+	+
TINEIDAE															
560. *Hyalaula apatelia* spec. nov.									+						
561. *Monopis victa* spec. nov.		+													
562. *Monopis lacticaput* spec. nov.								+							
563. *Monopis cuspidigera* spec. nov.								+							
564. *Monopis hypochrysa* spec. nov.									+			+			
565. *Crypsitricha oeceotypa* spec. nov.											+				
566. *Senatoplusia acibdela* spec. nov.					+										
567. *Tinissa chloroplocama* MEYRICK				+											
568. *Tinea anisoxantha* spec. nov.					+										
569. *Tinea cirrhoceros* spec. nov.					+										
570. *Tinea mellitacta* spec. nov.					+										
571. *Micrerethista mochlacma* MEYRICK								+							
572. *Micrerethista eustena* spec. nov.				+		+									
573. *Coryptilum klugii biagina* STRAND		+		+	+										
574. *Narycia negligata* spec. nov.										+					
575. *Heloscopa petricola* spec. nov.												+			
576. *Apoecis anholoxantha* spec. nov.						+									
577. *Apoecis stenomorpha* spec. nov.									+						
INCURVARIIDAE															
578. *Ectropoceros acrotoma* spec. nov.						+									
579. *Ectropoceros leucosphena* spec. nov.					+	+									
ADELIDAE															
580. *Nemophora profusella* (WALKER)				+											
581. *Nemophora chrysorrhabda* spec. nov.						+			+						
582. *Nemophora homoeotropa* spec. nov.									+						
Total:	13	23	8	67	64	78	9	81	66	49	161	69	23	27	16

GENERAL REMARKS ON THE CHARACTER OF THE FAUNA OF CENTRAL NEW GUINEA

State of the present knowledge

Finishing this paper the author finds himself before a difficult task. The temptation is great to add to this study an analysis of the fauna in question; the material studied enumerating almost six hunderd species from Central New Guinea may appear to be extensive enough to justify this. At the other hand, as has already been put forward in the introduction to this paper, our knowledge of the entire South Asiatic fauna of Microlepidoptera is still in such a fragmentary state that an essay of this kind must have the disadvantage of being greatly premature, and therefore incomplete.

For, however satisfactory the present collection may be, all previous collecting ever done in New Guinea has been quite incidental as far as our group of insects is concerned. Moreover, the data on the distribution of Microlepidoptera in the adjoining regions necessary for a comparison of their faunas are even more lacunary. The knowledge of the fauna of the Malay Archipelago, for instance, which is of the greatest importance for our problem, is still in an infantile stage. Only certain parts of the island of Java are better known. We know hardly anything about the faunas of the other Sunda Islands, of the Moluccas, and of the Philippine Islands. All the available data amount to records of a couple of hundreds of species captured incidentally together with Macrolepidoptera or with other insects throughout the Archipelago by this or that individual collector in the course of many years. When we take into consideration the enormous expanse of this region, its tropical climate, and its exceedingly rich flora, the present information on its Microlepidopterous fauna may be styled as entirely inadequate. This state of affairs is disappointing and strongly reduces the worth of any remarks on the zoogeography of this group of insects in South Asia.

However, the sketched situation is, as we hope, not permanent; on the contrary, considerable collecting of Microlepidoptera of not longer incidental character has been carried out in various parts of the Archipelago during the last decade, and is being continued up to this moment. As a result several excellent collections have been made which only wait to be worked upon. Therefore the author resolved not to abstain from a summary on the distribution altogether, but to limit himself to a few general remarks on the character of the fauna concerned, although he is aware that these may be hazardous.

Choice of material

To avoid inaccuracies as much as possible we shall limit our attention to the region of Central Dutch New Guinea, comprising the camps of the Expedition from the Idenburg River at 50 meters' altitude up to the highest collecting stations at the foot of Mount Wilhelmina, and exclude from the following summary the records from Hollandia, from the environs of the Humboldt Bay, and from the Cyclops Mountains. The reasons for this procedure are first, that collecting in the last mentioned stations was more or less incidental, the material, consequently, being scanty. And second, because Humboldt Bay belongs to the coastal regions which form the thoroughfares for the dispersion of insects, where widely distributed and even circumtropical forms may be expected to occur; these are liabe to obscure the true character of the indigenous fauna. As for the Cyclops Mountains, these are rather remote, in their own isolation, from the region of the Central Mountains.

This region which henceforward we shall indicate as „the Central Region" will have our special attention on the consideration that a collection of 580 species made there by the Expedition renders fairly workable material and allows of a few conclusions.

In the following table are summarized the numbers of genera, species, and subspecies, arranged according to the families (Table I).

In order to come to a better understanding of the fauna of the Central Region we must subject the material to further selection.

Since of the 580 species collected in the region only twelve are known to occur also outside the Papuan region — as the region is circumscribed in the Introduction to this paper (part I, page 6) — a consideration of the distribution based on our knowledge of the species is not possible; we are compelled to restrict our attention to the distribution of the genera.

When we take into consideration the character of the genera collected, a further limitation appears to be necessary.

The fauna of the Central Region is represented in the collection by 196 genera, 112 of which are apodemic and 84 are endemic. The relationships of the endemic genera are often obscure; although superficial characters point to certain correlations, it is our very fragmentary knowledge of the genital characters of many of the previously described genera — one of the most reliable criteria for the determination of those relationships — which mostly prevents us from making definite statements in that respect. Our conclusions as to these correlations of newly described genera, as given in the systematic part of this paper — when ventured at all — have often too tentative a nature to allow of their use for the present discussion. Therefore in this chapter we prefer to leave the category of the endemic genera out of consideration, and to restrict ourselves to a review of the apodemic genera.

The number of the apodemic genera recorded from the Central Region amounts to 112. Of these 43 are either cosmopolitan or have a circumtropical distribution. The evidence of this category is of little value for our problem and these 43 genera may be excluded from our analysis as well. After this drastic purge 69 apodemic genera are left to work with.

TABLE I

Numbers of genea, species and subspecies collected in the Central Region, arranged according to the families

Families and subfamilies	Total		Endemic		Cosmopolite and circum-tropical genera	Their apodemic species	Their endemic species	Apodemic genera	Their apodemic species	Their endemic species
	Genera	Species and subspecies	Genera	Species and subspecies						
1. Alueitidae	7	10	1	1	4	—	7	2	—	2
2. Phaloniidae	2	2	1	1	—	—	—	1	—	1
3. Tortricidae, Tortricinae	42	157	22	98	3	4	5	17	—	50
4. Tortricidae, Eucosminae	17	56	4	14	8	3	16	5	—	23
5. Schoenotenidae	7	77	5	14	—	—	—	2	—	63
6. Chlidanotidae	1	1	1	1	—	—	—	—	—	—
7. Carposinidae	10	31	7	12	1	—	6	2	—	13
8. Copromorphidae	1	1	—	—	—	—	—	1	—	1
9. Gelechiidae	16	46	4	4	6	—	27	6	1	14
10. Cosmopterigidae	8	16	4	4	2	—	9	2	—	3
11. Scaeosophidae	2	2	2	2	—	—	—	—	—	—
12. Xyloryetidae	11	40	6	11	—	—	—	5	1	28
13. Stenomidae	3	7	2	2	—	—	—	1	—	5
14. Oecophoridae	14	17	5	5	1	—	1	8	—	11
15. Orneodidae	1	6	—	—	1	—	6	—	—	—
16. Aegeriidae	3	5	—	—	2	—	4	1	—	1
17. Heliodinidae	9	11	5	7	—	—	—	4	—	4
18. Glyphipterygidae	6	11	1	1	5	2	8	—	—	—
19. Elachistidae	2	2	—	—	1	—	1	1	—	1
20. Scythridae	1	1	—	—	1	—	1	—	—	—
21. Yponomeutidae	6	24	3	9	—	—	—	3	—	15
22. Amphitheridae	2	9	—	—	—	—	—	2	—	9
23. Lithocolletidae	6	11	3	4	3	—	7	—	—	—
24. Epermeniidae	1	2	—	—	—	—	—	1	—	2
25. Plutellidae	2	2	1	1	—	—	—	1	—	1
26. Lyonetiidae	3	10	1	2	1	—	7	1	—	1
27. Tineidae	11	18	5	7	3	—	8	3	1	2
28. Incurvariidae	1	2	1	2	—	—	—	—	—	—
29. Adelidae	1	3	—	—	1	—	3	—	—	—
Total	196	580	84	202	43	9	116	69	3	250

General aspect of the fauna as indicated by apodemic genera

The distribution of the 69 apodemic genera collected in the Central Region is represented in the following table.

TABLE II

Distribution of the apodemic genera of Microlepidoptera, endemic species of which were collected by the Expedition in the Central Region

Genera	South Asia	Malay Archipelago	Moluccas	Philippine Islands	Pacific region	Australia	New Zealand	Palaearctic region	South America	North America	Africa
Diacrotricha	+	+			+	+					
Stcganodactyla	+	+	+	+							
Clysiana	+	+						+			
Zacorisca		+	+	+							
Isotenes	+	+	+			+					
Isochorista						+					
Thrincophora						+					
Choanograptis		+				?	+				
Neocalyptis		+									
Harmologa						?	+				
Diadelomorpha			+								
Isodemis	+	+	+			+	?		?	?	?
Aeolostoma						+					
Capnoptycha						+					
Taeniarchis						+					
Dicellitis			+								
Pternozyga	+	+									
Spatalistis	+	+									
Eremas						+					
Polyortha										+	
Endothenia								+		+	
Anathamna	+				+	+					
Hermcnias	+					+					
Bathrotoma						+					
Sereda										+	
Proselena						+					
Schoenotenes	+	+				+					
Meridarchis	+	+	+		+	+				+	
Heterogymna	+	+	+								
Copromorpha	+	+			+	+					
Atasthalistis		+	+	+	+	+					
Hemiarcha						+					
Hyptiastis	+										
Crocanthes						+					
Periphorectis	+										
Asmenistis						+					+

Genera	South Asia	Malay Archipelago	Moluccas	Philippine Islands	Pacific region	Australia	New Zealand	Palaearctic region	South America	North America	Africa
Dorodoca	+										
Proterocosma					+	+					
Pansepta		+				+					
Arignota						+					
Cryptophasa			+			+					
Xylorycta						+					
Phtoncrodes						+					
Agriophara						+					+
Scorpiopsis						+					
Chezala						+					
Epicurica						+					
Cormotypa						+					+
Antiopala						+					
Machacritis						+					
Ocystola						+					
Tonica	+	+				+					
Trilochana	+			+							
Protanystis		+									
Agrioscclis	+										
Xestocasis	+	+		+							
Thriambeutis			+	+	+						
Cosmiotes								+		+	
Argyresthia	+	+				+		+	+	+	+
Anticratcs	+	+			+	+					
Lactura			+			+					
Amphithera	+	+				+			+		
Chalcoteuches						+					
Ochromolopis								+			
Eidophasia								+			
Asymplecta			+			+					
Crypsitricha						+	+				
Tinissa	+	+			+						
Coryptilum	+	+			+	+					
Total: 69	25	24	13	6	10	43	3	7	2	6	5

After a consideration of this table it becomes clear that, generally speaking, the character of the fauna of the Central Region is similar to that of the entire Papuan region. Contrary to the views of classic authors, the Papuan fauna is not a modified continuation of that of Australia; neither can it be sharply divided from that of the Indo-Malayan region. It rather represents the midst of a battlefield between these two faunas in which both elements stand fairly equal, perhaps with a slight preponderance of the Australian element. The battle is old, and both elements

have apparently had equal chances: now here, at one time Indo-Malayan, now there at another time Australian forms found optimal conditions for a development along new lines. This development has been, and probably still is, vigorous, as the conquerors of the battlefield — to speak in the terms of our metaphor — found themselves subjected to the influence of the extremely active "creative agent", peculiar to the zoocentres of the present region. Thus a rich and independent now existing Papuan fauna of Microlepidoptera was formed.

The data of Table II are summarised by numbers in Table III. We put the suggestive lines 5 and 7 in italics; these indicate, however roughly, the fairly equal chances of the Oriental elements in total represented by 37 apodemic genera as against 43 genera of Australian origin.

TABLE III

Numerical distribution of the apodemic genera of Microlepidoptera endemic species of which were collected in Central New Guinea:

Region	Recorded in common with this region but occurring also elsewhere	Recorded in common with this region only
1. South Asia from India to South China and Formosa	25	4
2. Malay Archipelago	24	2
3. Moluccas	13	2
4. Philippine Islands	6	0
5. *Total Oriental Region*	*37*	*15*
6. Pacific region	3	0
7. *Australia*	*43*	*20*
8. New Zealand	3	0
9. Palaearctic region	7	2
10. North America	6	2
11. South and Central America	2	0
12. Africa	5	0
13. Total Oriental and Australian	2	—
14. Total from outside Oriental region and Australia only	6	—

The Philippine Islands are generally regarded as having functioned as a bridge between the Papuan region on one side and the South Asiatic continent and Northern parts of the Malay Archipelago on the other. The scanty data of our tables tend towards the prevalence of the Oriental influence on the fauna of Microlepidoptera; six genera recorded which occur there in common with the Papuan region are also known from this Oriental region, one from the Moluccas, and only one from the Oriental and Australian regions together.

As to the southern bridge with the Malayan Region, the Lesser Sunda Islands, hardly anything was known about their Microlepidoptera.

However, as recently as 1949, the Swiss Sumba Expedition brought home an excellent collection of these insects. Only a beginning is made with the study of this material, but the first impression one gets is that Sumba has little in common with either New Guinea or Australia; it seems to resemble most the fauna of Java (DIAKONOFF, *Verh. Naturf. Ges. Basel*, vol. 63, p. 138, 1952).

The third, generally accepted bridge between New Guinea and the Oriental region are the Moluccas. This bridge has functioned, disappeared, and was restored again repeatedly during the complicated geological history of these islands, and the movement of animals along this track has been in both directions. This theory, well-founded on the evidence of the distribution of other animals, applies also to that of the Microlepidoptera, of which the above table bears proof as well, however scanty the available data are. Five genera occurring in the Papuan region as well as in the Moluccas were also recorded from the Indo-Malayan region, two from Oriental and Australian regions and three from the Moluccas only.

CORRELATION WITH REMOTE FAUNAS

The influence of the fauna of New Zealand appears to be not difficult to explain. Four genera occur in the Central Region in common with that country, three of which are also recorded from Australia. The fourth genus, the Tortricid *Harmologa*, very probably inhabits Australia as well; in fact it has been frequently recorded from that continent, but we are at present not able to ascertain which of the species actually belong to *Harmologa*, and which must be referred to *Isotenes*, which genus has been for short confounded with the former genus.

The Central Region has eight genera in common with the Palaearctic region. Two of these, *Thiotricha* and *Hypercallia*, are almost cosmopolitan and may as well be omitted. Of much greater interest are the six remaining genera, all of them belonging to the Alpine fauna which will be treated separately.

The North American fauna has five genera in common with our Region. One of these, *Meridarchis*, is widely distributed and not worth of special attention. The Tortricid *Polyortha* is closely allied to the cosmopolitan *Peronea* and might appear to have a wider distribution than is accepted at present. The presence of the Elachistid *Cosmiotes*, however, is very puzzling; it will be discussed with the Alpine fauna.

Some time ago the question whether any "American" element was represented in the fauna of Microlepidoptera of New Guinea was answered by MEYRICK (*Trans. Ent. Soc. Lond.*, vol. 87, p. 503, 1938) categorically in the negative. At present we are able to record one generic name, *Sereda* which North America and New Guinea have in common; this is a small genus, represented in both countries by a single specimen. For another genus, the above mentioned *Cosmiotes*, we may refer to the discussion of the Alpine fauna below.

After the general remarks on the distribution of the apodemic genera we will more closely consider various relationships of the fauna of the Central Region, starting from the families, but before doing so we wish to give a short review of the endemic genera in order to stipulate the importance of this element in the New Guinea fauna, proving its independent character.

Endemic fauna

The endemic element of the entire fauna of the Central Region is considerable and amounts to 84 genera and their 202 species, together with the 366 endemic species of the apodemic genera totalling 568 endemic species and subspecies out of the 580 collected altogether, or not less than 98 per cent. This high ratio of endemism is not surprising. In our opinion, only a small and not important part of it might be ascribed to errors due to our limited knowledge of the faunas of the neighbouring regions. Principally this endemism must be attributed to the independant character of the fauna of New Guinea. The complicated geological history of this immense island which, according to recent views, arose out of the fusion of an old archipelago; its structure bears evidence of violent tectonic movements. Its rich flora, and tropical climate, together with factors unknown, are responsible for the fact that this island is inhabited by one of the richest insect faunas of the Tropics.

It appears that in every isolated mountain range, or deep valley of Central New Guinea new species and subspecies may be expected to occur, often at a few miles' distance as the crow flies from other collecting stations, but sufficiently separated and isolated by climatological and other barriers. Toxopeus has more than once pointed out that the true distance between the habitats of two different forms living on opposite slopes of a steep mountain range is not a straight line on the map between these localities but the isoclimatic line following the valley, down to its junction with the adjoining valley and going up that valley which often means distances of many miles.

The present material offers all the more variety, since the collecting stations were separated not only in horizontal but also in vertical sense and generally are situated at intervals of about 200 meters of altitude. This variation is clearly demonstrated by such plastic genera as the Tortricids *Anisotenes*, *Parachorista*, the Gelechiid *Lecithocera*, the Yponomeutid *Lactura* and many other, every collecting station of the Expedition often housing vicarious species distinct from those in the previous and the following stations along the Expedition's route.

Not only this longitudinal and altitudinal isolation of the collecting stations seems to be responsible for a great variation of the collected material: in a single camp a true explosion of local species may occur. The Moss Forest Camp is a striking example. In one month's time in this station alone almost one-third of the entire collection has been made!

Although the Schoenotenidae and the Tortricidae were especially numerous in the Moss Forest Camp, other families were also abundantly represented at this locality. Many other groups, and also the Macroheterocera, were richer in that locality than elsewhere. It is as if some mysterious creative forces are at play in those high-elevated, humid, moss-clad woods of a comparatively uniform vegetation, only 200 meters below the cold plains surrounding Lake Habbema. One wonders what these forces may be; apparently not the abundance of plant growth. Partly that of the mosses perhaps. Nothing is known of the food-plants of the Papuan *Schoenotenes* species, of which 23 have been collected in the Moss Forest Camp; their larvae may feed on mosses; many species of this genus with their roughly tufted wings and greyish or olive coloration closely resemble the colours of mosses and seem to be adapted to that special environment. However, although moss-clad forests can be found everywhere in the Archipelago at that altitude, such an abundance of Heterocera has never been reported from anywhere else. The collector, Dr. TOXOPEUS, gives a colourful narrative about this camp in his series of impressions of the Expedition (1939, vol. 5, pp. 59—67, plates 1—2). He told us that he and his assistants could make only a choice out of hundreds of small Lepidoptera coming to light traps, and that he tried to capture as many different forms as possible, as he was simply unable to take long series of one species: so abundant were the visitors to the white screens behind the collecting lamps.

Returning to our original subject we can safely state that the most striking feature of the fauna of the Central Region is the richness of its endemic elements. In this respect we readily endorse the statement recently made by LIEFTINCK in his excellent study of the fauna of Odonata of New Guinea (1949, p. 244): ... "all the evidence at present available supports the view that the proper fauna of New Guinea is not 'Australian', nor 'Oriental', in the sense in which these terms have hitherto been understood, but 'Papuan'."

In further support of this statement we may use the important evidence of the numerous rich "zoocentres" or habitats of largest specific density of endogenic genera, e.g., *Schoenotenes* with not less than 75 Papuan species of which 62 were collected in the Central Region, and only 12 other species have been recorded from outside the Papuan region; the Eucosmid *Hermenias* with 20 endemic species (apodemic species: India 3, Australia 7); the Tortricids *Isotenes* (endemic species: 13, 12 of which also in the Central Region, apodemic: 4), *Choanographis* (endemic: 8, apodemic: 1), *Taeniarchis* (endemic: 5, apodemic: 1), etc. In the following chapter we shall mention several di-, tri- and quadri-endogenic genera which show a similar abundance of endemic species in the Papuan region.

In fact the entire family Schoenotenidae with its six endemic genera may be regarded as an endogenic group; besides these six and the extensive endogenic genus *Schoenotenes*, mentioned above, it comprises two genera

recorded also from outside New Guinea, viz., *Proactenis*, with two species in Java and one in New Guinea, and *Proselena* with one Australian and one New Guinean species. Three other small genera do not occur in New Guinea, viz., *Diactenis* with some six Indian species, *Paraselena* with one Australian and one Australian and New Zealand species, and *Palaeotoma* with one Australian species. In total 91 endemic species of this family were recorded from the Papuan region as far, and several more await description.

The same can be said of the tribe Zacoriscini of the Tortricidae, the distribution of which was already discussed in the systematic part (part I, pages 35 and 37).

As a further proof of the independence of the Papuan fauna, in particular of that of the Central Region, we may briefly review the most important endemic genera. The most remarkable of these is perhaps the Zacoriscine *Chionothremma*, a diurnal Tortricid with the singular shining silvery colour and jet-black markings perhaps in consequence of or as an adaptation to, these life-habits. *Chionothremma* possesses 29 species of which 24 were collected in the Central Region, 22 being new to science. This genus represents a zoocentre in New Guinea as remarkable and rich as that of the birds of paradise.

The endemic genera of the Tortricidae worth mentioning in this place are *Anisotenes*, being the second rich one, comprising 17 modestly coloured species, all from the Central Region; *Rhomboceros*, *Aplastoceros* and *Tremophora*, each with five species; the Eucosminae *Metaschistis* with seven, and *Peridaedala* with four species; and the Yponomeutid *Iriania* with some ten species (only seven of which could be identified on account of the bad condition of these small and delicate insects).

Now we will consider the entire collection by briefly reviewing each family represented.

Remarks on the families

The Alucitidae are characteristic by their world-wide distribution, and probably represent an ancient group. It was not surprising to find four cosmopolitan genera among our material; however, one is represented by a Papuan species already described, while three others have developed two new species each. Of the other three genera *Diacrotricha* may be of Indian origin, with pioneers reaching Christmas Island, New Guinea, and even the Solomon Islands, *Steganodactyla* shows exactly the opposite: Papuan, with one widely distributed species extending through South Asia as far as Mauritius and the Comoro Islands; *Fletcherella*, at last, is endemic and probably of Indian relationship.

The Phaloniidae are represented by *Arachniotes*, an endemic genus, and by *Clysiana* which is small but widely distributed, with several Indian and a few Javanese species, and may be of Palaearctic origin.

The Tortricinae of the Tortricidae predominate in the collection; the material available amounts to 16 apodemic genera with 50 endemic species and 22 endemic genera with 98 species. Leaving out of consideration the genera already discussed in the preceding chapter we shall briefly review the remaining ones, as far as they are of importance in connection with our problem.

Parachorista is an extensive endemic genus, represented in New Guinea by 20 species; one straggler is known from Java, another from India. Of the representatives of the Australian element of the fauna may be mentioned the exogenic genera *Isochorista*, *Thrincophora*, *Aeolostoma* and *Capnoptycha*, all being endogenic for the Australian continent; at the other hand, *Pternozyga* and *Spatalistis* are the most important exogenic genera of Indian origin. The small genus *Neocalyptis* occurs in both Java and New Guinea; its character is as far not clear, but it may be of Malayan origin.

Zacorisca and *Isotenes* occur also in the Moluccas, the former genus may probably be diendogenic for those islands and New Guinea, as the Moluccan species are considerably specialized and different from the Papuan ones. The distribution of these genera was already discussed on pages 35 and 37 of part I.

Of the endemic genera may be mentioned *Rhomboceros*, with peculiarly shaped antennae in the male; it is correlated through the nearly allied *Aplastoceros* with a group of Cnephasiini of Malayan origin; furthermore *Tremophora*, a strange genus with a paired sense organ in the basal segment of the abdomen in the two sexes, a feature unique in the entire order of Lepidoptera; the appearance of these organs in a single genus of the Tortricidae is highly intriguing, the more because the closely allied genus *Mesocalyptis* does not possess them at all. And at last the remarkable mimetic *Chresmarcha*, already discussed at some length in the systematic part (part I, pages 163—164); we shall mention this genus once more at the end of this paper.

The Eucosminae are less numerous than the preceding subfamily in the ratio of 1 as against 3 (cf. part I, pages 29—30). Of the five endogenic genera recorded in Table II, *Hermenias* is the most important; it was discussed already in the preceding chapter; *Anathamna*, of which a fifth Papuan species has been described in the second part of the present paper, seems to be endogenic, as only one species was recorded from India, one from the Pacific region and one from Australia. *Bathrotoma* occurs also in Australia, but the new species from Mist Camp is strongly differant from its Australian congeners. *Endothenia* and *Sereda*, finally, have a puzzling distribution, the former was recorded from Europe and North America, the latter from North America only.

Metaschistis is the most important of the endemic genera, because we expect that much more species than the seven described in this paper will be detected in other allied genera to which they may hitherto have

been erroneously attributed. The species are very variable, which might be an indication of the ancient character of the genus. *Allohermenias* is related with *Hermenias* and may have developed from that stock rather recently, while *Crocostola* stands quite isolated.

The extremely extensive cosmopolitan genus *Argyroploce* has developed numerous endemic species in New Guinea, five of which could be recorded from the Central Region; of the two exogenic species, *A. harmonica* from the Sigi Valley is known also from Ceylon and Java, and *A. lamyra* from the Idenburg River Camp occurs also in Ceylon. The third exogenic species of this family, *Enarmonia pulverula*, from the Sigi Camp, was also recorded from Ceylon, Assam, Borneo, Java, and China.

It was a surprise to find that two new species from the Central Region and a third one, previously described from Rook Island as an *Argyroploce*, in fact belong to the North American genus *Pseudogalleria*, up till now supposed to be monotypic. This find loses much of its importance, however, through the fact that a series of tropical species, before short known under the name of "*Argyroploce illepida*" or "*Cryptophlebia carpophaga*", that often are serious crop pests, must be attributed to *Pseudogalleria* as well.

The Schoenotenidae, an interesting endogenic Papuan family, was sufficiently discussed in a previous publication (Diakonoff, Zool. Meded. Mus. Leiden, vol. 21, pp. 165—177, 1952), in the systematic part, and in the preceding chapter. Its composition and distribution form one of the strongest arguments for the peculiar and independent character of the New Guinean fauna.

The Chlidanotidae, a small family of great taxonomic interest, is represented in the collection by a single aberrant monotypical genus. The family seems to originate from India; one species has a wide distribution, extending from India, the Andamans, Java, and New Guinea to Australia and the Fiji Islands.

The Carposinidae are rather numerous in New Guinea and are often represented by species of unusually large size which may indicate that the conditions for their development in that island are optimal. The endemic element is considerable, only three genera out of ten collected being apodemic (and almost circumtropical). Of these, *Meridarchis* has developed not less than 22 endemic species throughout the Papuan region, *Heterogymna* eight, and *Carposina* only one. No apodemic species are known.

The Copromorphidae are a small, ancient family of world-wide distribution and obscure origin. Fourteen genera are known altogether, of which *Copromorpha* occurs in India, the Malay Archipelago, New Guinea, and Australia, but the genus has few representatives in all these countries; other genera are distributed as follows: Bismarck Islands 2, Australia 2, New Zealand 2, Madagascar 1, Central and South America 4. In the Central Region one species of *Copromorpha* was collected.

The Gelechiidae, the largest family of the Microlepidoptera, abundant in the Oriental region as well as in Australia, appear to be less numerous

in the Papuan region. The present collection is almost disappointing except for two extensive genera, *Lecithocera*, with an almost cosmopolitan distribution, except for America and New Zealand, with 30 Papuan species, of which 19 from the Central Region, all of them new; and *Crocanthes*, diendogenic for the Papuan region and Australia, but probably originating from the former. Of the other sixteen genera collected by the Expedition, four are endemic and five cosmopolitan or nearly so; of the remaining four apodemic genera *Hemiarcha* and *Asmenistis* are Australian endogenics, each with one endemic species; while *Hyptiastis* and *Periphorectis*, also with one endemic species each, seem to be of Indian origin.

The Cosmopterigidae is a family of mostly small insects of which the genera are taxonomically rather insufficiently known. The collection contains two circumtropical genera, three endemic, and two apodemic. Of the apodemic genera, *Dorodoca* is of Indian, *Proterocosma* of Australian origin; once more the elements of these two faunas are equally represented. Of the endemics, *Neachandella* may be mentioned, an interesting genus showing a correlation with the family Metachandidae (which is endogenic in the Mascarene Islands and occurs also in India and Java, but is not known from the Papuan region).

The Scacosophidae, a small family of Indian character, but occurring also in Australia and Africa, are represented by four genera, two from the Central Region, both of them endemic.

The Xyloryctidae represent probably the most conspicuous indicator among the Microlepidoptera of the correlation of Papuan and Australian faunas. They are moths of often very large, even gigantic size and are limited to these two regions in a number of mostly diendogenic genera, but with endemic species in each country. It is not easy to ascertain where the family comes from. The genera *Xylorycta* and *Phthonerodes* are much more numerous in Australia and seem to be exogenic for New Guinea. At the other hand, *Cryptophasa* is richly represented in both New Guinea and Australia, and must be regarded as an example of diendogenic distribution. However this may be, evidence for our argument of the independence of the Papuan fauna is furnished by the fact that this genus has developed an important zoocentre in the Papuan region: there are not less than 35 Papuan species of *Cryptophasa* of which only one was recorded from elsewhere, viz., the Moluccas, and none are known to occur in Australia! Furthermore, *Paralecta*, although less extensive, may be considered diendogenic as well, comprising 13 endemic Papuan species; a straggler species of a quite unusual facies has been described from Malaya. *Arignota*, hitherto known only from Australia, is represented in the Central Region by two endemic species. As to endemic genera, six have been collected by the Expedition.

The Stenomidae, hitherto closely correlated with or even merged into the Xyloryctidae, but in our opinion distant from them, occur in both Australian and Papuan regions, but are not numerous in either; they are

still more scanty in the Oriental region where they developed endemic genera; however, the family is extremely rich in South and Central America. The present knowledge of the taxonomy of these uniform insects is rather unsatisfactory and a revision of the genera is badly needed. As far as is known at present, the Australian *Agriophara* is exogenic in New Guinea, but further discoveries may prove that it has a firm foothold also in the Papuan region. Two genera from the Central Region were described as new in the present paper.

The Orneodidae are represented by the cosmopolitan *Orneodes*. It is not surprising that this extremely plastic genus has developed endemic species in the Central Region, six of which were collected.

The Oecophoridae, the third largest family of the Microlepidoptera, is very numerous in Australia, although less abundant there than the Gelechiidae. The material of the Expedition is more variegated than that of the latter family, but equally limited. *Hypercallia* has an almost cosmopolitan distribution but is represented in every country where it occurs by a few species only, except for South America, were it is numerous; one endemic species has been collected in the Araucaria Camp. Seven apodemic genera collected all are of Australian origin, where several of these have acquired a rich development, e.g., *Cormotypa*, *Ocystola* and *Machaeritis*. *Tonica* is the only genus that was recorded also from the Oriental region, apparently its place of origin; however, it occurs also in Australia. Endemic genera in the collection amount to four. According to these indications we may conclude that in the Central Region the Oecophoridae form the Australian element *par excellence*.

The Heliodinidae make an exactly opposite impression, three apodemic genera being of Indo-Malayan origin, and a fourth, occurring in the Moluccas, the Philippines, and the Solomon Islands, but none being Australian. The material, however, is too scanty for definite conclusions. This is the more the case with the family Aegeriidae.

The Glyphipterygidae, a group of mostly diurnal, often brilliantly coloured species, is poorly represented in the collection. However, one monotypical endemic genus, *Polygiton*, is very interesting, as it belongs to the recently defined subfamily Hypertrophinae, and is its first representative outside the Australian continent and Tasmania.

The Scythridae and the Elachistidae, hitherto not recorded from New Guinea, are represented by one and by two genera, respectively; two of these are cosmopolitan, and the third genus, belonging to the Elachistidae, strangely enough, has a Palaeo- and Nearctic distribution. We will return to this genus when discussing the Alpine fauna.

The Yponomeutidae, except for a few genera, seem to be insufficiently known from New Guinea, and in future we expect many discoveries. The most important genus for our discussion is *Lactura*, which counts not less than 43 gaudy crimson and yellow coloured endemic species from the Papuan region. It is also richly developed, but somewhat less numerous

in Australia, and is extensive in both Central and South America, and may therefore be regarded as triendogenic. Less numerous, but even more brilliantly coloured *Anticrates* is endogenic in India and penetrates to New Guinea, Australia, and the Pacific. There are 5 Papuan species, one of which, described from the Territory of Papua, has developed a distinct subspecies in the Central Region. Three genera from the Central Region are described as new, of which *Iriania* was already mentioned in the chapter on the endemic fauna.

The Amphitheridae, possessing in males, and sometimes in the two sexes, the unique feature of a ridge of hairs dividing the eye into two parts, are of interest, as the genus *Amphithera*, hitherto known by only a few species from India, Java, and Australia, seems to have originated from New Guinea, it forms there a zoocentre with nine species, eight of which were collected in the Central Region. The second genus is *Chalcoteuches* with one endemic species collected; another species of this genus inhabits Tasmania.

The Lithocolletidae, a family of leaf-miners, are non-committal, being represented by three cosmopolitan and three endemic genera only.

The Epermeniidae and the Plutellidae will be discussed with the Alpine fauna.

The Lyonetiidae are represented by the cosmopolitan *Opogona* with seven species, all endemics of the Central Region, by *Asymplecta*, possibly of Malayan origin but also recorded from Australia, and by *Orochion*, an interesting endemic genus from high mountains.

The Tineidae, a large, ancient family, are rather scanty in the collection. *Monopis*, *Tinea* and *Narycia* are cosmopolitan, *Tinissa* and *Coryptilum* are of Indian distribution. Five endemic genera are recorded from the Central Region, one of which, semitransparent *Hyalaula*, is quite remarkable by its deceiving Aegeriid appearance; it may be a mimetic of Hymenoptera.

The Incurvariidae, a small family, mostly confined to the Northern temperate regions, were recorded from New Guinea for the first time, represented by one peculiar endemic genus with two species.

The Adelidae are a cosmopolitan family, with the also cosmopolitan representative, *Nemophora*, counting 5 endemic and 1 apodemic species in the Papuan region.

The fauna of the Grand Valley

The valley of the Baliem River, situated north of the Snow Mountains, is bordered and almost completely isolated by high mountain ranges reaching 4000 meters in the North and 3000 meters in the South. This Grand Valley, discovered by Richard Archbold, is densely populated; through the activity of man it lost its primeval forests almost entirely and became a swampy plain covered with high grass.

Much attention has recently been paid to the peculiar fauna encountered in that valley by the Expedition. In spite of its high elevation of about 1600 meters, the Grand Valley houses a number of lowland species which one would not expect to find at that altitude. This concerns birds (RAND, 1941), Odonata (LIEFTINCK, 1949), and Rhopalocera (TOXOPEUS, 1950). The Grand Valley forms no exception in this respect, as the same phenomenon was observed with Odonata, Rhopalocera, and Microlepidoptera of the environs of the elevated Wissel Lakes in West New Guinea and it is possible that several other isolated and as far unexplored valleys in the Snow Mountains Range possess the same peculiar element in their fauna.

The Grand Valley has been described by BRASS (1941) as to its location, geographical aspect, and flora, while RAND (loc. cit.), and LIEFTINCK (loc. cit.) discussed the origin of its fauna. These authors explain the presence of lowland elements by accepting that through the disappearance of forests Baliem Valley forms what is called an "area of disturbed conditions" of great extension. Lowland forms may have arrived there incidentally, transported by wind currents or — as far as potential migrants are concerned — through their own powers; in this grass plane they found favourable conditions agreeing with those in their original habitats in lower countries and were able to settle down; some of them developed new subspecies and even new genera.

TOXOPEUS (loc. cit.) launches a different explanation by giving credit to the geological history of these parts. According to him the Grand Valley and other high-elevated valleys of the Snow Mountain Range, as also the region of the Wissel Lakes and Arabu River, were originally low lands and have been elevated together with their lowland fauna at the time of the rise of the Snow Mountains. They form now "lost worlds", surrounded by crests of high mountains which isolate them; lowland forms inhabiting them must be regarded as relicts of the ancient autochthonous lowland fauna.

This problem, which is only briefly touched upon here, is fascinating, and we were desirous to ascertain whether the results of the study of the Microlepidoptera would shed any more light on the subject.

Although the amount of specimens collected in the Baliem Camp is reasonable, the number of species represented is low, viz., seventeen only. There are no endemic genera among this material. Six species are endemic to the Grand Valley, viz.:

Chionothremma gracilis; the genus is endemic and has twenty more species from other collecting camps in the Central Region.

Meridarchis anisopa, an almost cosmopolitan genus with eleven more species from other camps.

Cryptophasa iorhypara, belongs to a rich Papuan and Australian genus; the present species is closely allied to *G. curialis*, which was collected in seven other camps.

Thiotricha chionochrysa, a species of a cosmopolitan genus, with extremely

numerous species in the Indian and Malayan regions, and with a wide vertical distribution; this is the second species from New Guinea.

Isochorista papuana and *I. polysperma* would be more interesting if a third species were not collected at the Moss Forest Camp. The genus is typically Australian; the present is the first record from the Papuan region.

The following three new species were collected also in other camps.

Schoenotenes metagrapha, also from Rattan and Mist Camps.

Paralecta hexagona, also from Araucaria and Rattan Camps.

Cryptophasa chlorotis, also from Rattan Camp.

The following five species are endemic to the Papuan fauna.

Zacorisca thiasodes from Netherlands New Guinea (Fakfak) and British New Guinea (Owgarra). This is actually a lowland species.

Zacorisca toxopei, also from the Cyclops Mountains, Hollandia, and the Araucaria Camp; previously recorded from Fakfak and Owgarra. This is another species occurring also at the coast, but apparently with a wider vertical distribution than *thiasodes*.

Chionothremma patarea, also from Owgarra and the Wissel Lakes.

Chionothremma melanoleuca is a species of interest as it has also been recorded from the Wissel Lakes (Lake Paniai, 1750 meters) and suggests a similarity of these faunas.

The following two are possibly migrants from far away:

Steganodactyla bürgersi, from North Central New Guinea.

Adoxophyes vindicata, described from the Solomon Islands, but collected by the Expedition in four other camps.

Epicurica spec. (damaged and unrecognisable); belongs to an Australian genus; the genus has four other species collected by the Expedition elsewhere.

It is evident from this brief review that the material of Microlepidoptera available from the Grand Valley is too limited to allow any resolute statements as to the problem of the origin of its fauna. Still it is noteworthy that, among the 17 species collected, there are two that rather belong to the lowland fauna (*Zacorisca thiasodes* and *toxopei*).

Alpine fauna

Several entomologists when studying their special groups from the collection of the Expedition looked in vain for true alpine elements which could be expected to occur in the three highest collecting localities at the foot of Mount Wilhelmina, ranging from about 3250 to 4200 meters.

Lieftinck (1941, 1949) in his study on the Odonata of the Expedition records five species from this region, all of them endemic, viz., one species of *Hemicordulia* (Anisoptera), one of *Ischnura* and three species belonging to the endemic genus *Oreagrion* of which one more species has been collected by the Lorentz Expedition of 1909 (in the same region, but at a lower elevation). All species of Zygoptera in question are of a similar facies,

having a sturdily built and densely haired body; perhaps these features form some adaptation to their high-elevated habitat. However, LIEFTINCK's conclusion is that a true alpine fauna is absent; one endemic genus and six endemic species recorded point towards the juvenile character of the fauna of this region. The surmised relationship of *Oreagrion* with a genus from the Andes, as postulated by RIS, appeared to be caused by a superficial resemblance only.

TOXOPEUS (1950) comes to the same conclusion with regard to the Lepidoptera. "Many Heterocera were collected there, but this may be due to collecting them being much easier in the open than in the thick forests somewhat lower down. As a matter of fact, many moths that were collected near Lake Habbema at 11000', were also met with in the Moss Forest Camp 2000' below the former camp. In three months during a good sunny season we collected the poor number of eight species of butterflies and only four of them were characteristic of the Lake's environment. "One of these, a Satyrid, was not observed lower down and above 13000' not a single butterfly was ever seen. Similar things are found in Hymenoptera, Orthoptera, and so on."

CHARLES P. ALEXANDER had the same experience when studying the Tipulidae of the Expedition: a veritable alpine fauna of these insects also seems to be absent.

As a specialized fauna flourishes at alpine heights in Europe, Asia and other continents, its absence from the Snow Mountains is singular.

TOXOPEUS (*loc. cit.*) tries to explain this fact by drawing a parallel between the occurrence of the Rhopalocera, and the recent data on Geology of New Guinea. According to the geologists FEUILLETAU DE BRUYN (1921) and VAN BEMMELEN (1939) the Snow Mountain Range is of a young geological age; its elevation must have begun in the Mio-Pliocene, but the actual rise of Mount Wilhelmina must be as early as the beginning of the Pleistocene. TOXOPEUS argues that the juvenile character of this range accounts for the absence of true alpine butterflies: the time elapsed since the creation of this range was not long enough for their development.

Our experiences with regard to the Microlepidoptera collected in this elevated region partly confirm the supposition of the young age of the fauna in question; at the other hand, however, the collection of the Expedition contains a small number of forms of such a remarkable character, that it seemed worth while to dedicate a separate chapter to this subject.

As said above three collecting stations of the Expedition may be considered in connection with the conception of an alpine — or subalpine — fauna. They are: Lake Habbema, where most of the collecting was done at an altitude of 3250 meters but with surrounding hills reaching up to 3400 meters; Letterbox Camp about 4 kilometers east of Mount Wilhelmina, at 3560 meters, where the collecting was done at 3500 and

3700 meters ("Swampy alpine vegetation at the timber line", according to TOXOPEUS, 1940); and Scree Valley Camp, at the foot of Mount Wilhelmina, where most specimens were collected at 3800 meters, and other specimens during trips to regions ranging from 3400 to 4250 meters ("Alpine above timber line, shrubs in sheltered spots only", loc. cit.).

We will concentrate our attention on the two highest collecting stations, Letterbox Camp and Scree Valley Camp, and regard the environs of Lake Habbema only in connection with the other two. The last mentioned locality is not so decidedly "alpine" and its fauna has a too great resemblance to that of the Moss Forest Camp, that dorado of Microlepidoptera (cf. above). Moreover it is rather remote from the other two localities and is 300 meters lower down. Lake Habbema Camp was far from poor: 69 species of Microlepidoptera were collected there as against 23 and 27 from Letterbox and Scree Valley Camps, respectively. For further particulars we refer to the list of all species collected, at the end of the systematic part.

The material from the Letterbox and Scree Valley Camps amounts to 44 species in total, all of them being new and endemic (except for one species of *Isotenes* represented by an unrecognisably rubbed specimen). They may be divided as follows:

a. Belonging to 8 cosmopolitan or circumtropical genera: 10 species;
b. Belonging to 14 other apodemic genera: 23 species;
c. Belonging to 8 endemic genera: 11 species.

This material is scanty, of course, and consequently, the conclusions it allows are not very reliable; still the above data are suggestive.

The first category: endemic species of widely distributed genera, forms one fourth of the collection from this region, a rather higher ratio than that encountered elsewhere. The conclusion seems obvious: the ability of this group to spread quicker, to penetrate through barriers and to accomodate themselves to new surroundings easier, were in their favour, and enabled them to reach the high and barren country from far and to obtain a foothold there. Of the ten species of this group three were found also in lower stations, especially in Lake Habbema Camp, seven were captured in the alpine zone only.

The third category, that of the endemic genera, is low, relatively spoken. This group forms another fourth of the collection, and only two genera, *Emmetrophysis* and *Orochion*, are endemic to the alpine zone. Of the eleven species belonging to the endemic Papuan genera, nine were captured only in the two camps in question and two also in collecting stations situated lower down.

Half of the collection is formed by the second category, that of endemic species of apodemic genera other than circumtropical and cosmopolitan. In total 14 genera were collected, seven of which only in Letterbox and Scree Valley Camps, others also at lower stations. We shall consider these seven genera more closely.

Aeolostoma and *Antiopala* are of Australian origin; *Harmologa* was described from New Zealand but probably occurs also in Australia, as is said above (p. 941). These three genera, represented by a single endemic species each, are of no especial importance, apparently having a considerable vertical distribution; discovery of more species from other parts of New Guinea may be expected in future.

The remaining four apodemic genera, or at least three of them, are of great interest, as their occurrence in this alpine region is highly remarkable. They are:

Cosmiotes (Elachistidae), a small genus, with two species in Central Europe and three in North America; in the Snow Mountains it is represented by *C. epicaeria* spec. nov., structurally allied to the North American *C. scopulicola!*

Ochromolopis (Epermeniidae), with a single species in South Europe and North America. *O. oculigera*, and the allied *O. bidentata*, are new species from Letterbox Camp.

Eidophasia (Plutellidae); three species from Europe. *E. peristigma*, is a new species from Letterbox Camp.

Argyresthia (Yponomeutidae), except for a few stragglers, is confined to Europe and North America; in Australia a single species occurs, in New Zealand none; the genus is represented by *A. nivifraga* spec. nov., of uncertain affinity, collected in both Letterbox and Serec Valley Camps.

How these representatives of remote faunas of temperate regions did arrive in the heart of New Guinea is a question which we are not able to answer. May these species be regarded as relicts of an old fauna and do they, consequently, represent what may be defined as the true alpine element? We are inclined to answer in the affirmative.

The fauna and flora of remote mountain tops is comparable with that of isolated islands. Their origin is as far not explained but two main theories have been brought forward for the solution of this problem. One hypothesis is that dispersal of plant seeds and small animals, like insects, is possible across very large stretches of land and sea e.g., by wind currents; classical advocates of this theory are Darwin and Wallace. Another theory is that remote faunas and floras cannot have originated by the aid of any kind of dispersal during present times, and regards typically alpine elements of these faunas and floras as relicts of ancient land connections; a classical author of this view is E. Forbes. As far as we could ascertain, the majority of the present zoologists and botanists is in favour of the latter theory, without discrediting the former altogether.

If we assume that *Argyresthia* is a plastic genus with considerable vertical distribution, there still remain three other genera representing faunas of temperate regions; for an explanation of their presence may serve the second theory, that of the historical zoogeography, which means that they must be regarded as originating from temperate zones, arrived in the Snow Mountains through migration along mountain ranges since dis-

appeared, at some remote period, perhaps antedating the Snow Mountains themselves.

LAM (1929) believes that the presence of plants from temperate regions in the orophytic flora of New Guinea may to a small extent be due to wind dispersal, but otherwise can be explained only through historical plant geography. DOCTERS VAN LEEUWEN (1933) and VAN STEENIS (1936), arrive at the same conclusion with regard to the origin of the Malayan Mountain Flora.

It must be noted that all families in question are usually regarded as not the very oldest but still ancient ones. Their stay at the Snow Mountains might have been not long enough — or the influences of the alpine surroundings might have been not sufficiently different from those of the temperate regions at lower elevation, their surmised original habitat — to set forth forming of new genera, but only to indicate a change in case of *Ochromolopis*, where neuration of the hind wing in both species described deviates slightly from that in its European species. However, the time of their stay in New Guinea has been sufficiently long to give rise to the development of new species in each genus concerned.

When summarizing the results discussed in this chapter we arrive at two conclusions.

1. The data available are in support of the supposition of the juvenile character of the fauna of the elevated Mount Wilhelmina range. In that direction points the presence of only two endemic genera, other genera collected being either of circumtropical or cosmopolitan distribution, exogenic or endemic (but in the latter case recorded from other collecting stations lower down).

2. Contrary to the experience of previous authors with other groups of insects collected in this region, the presence of a true alpine element among the Microlepidoptera could definitely be stated: at least three apodemic genera, originating from the temperate Palaearctic and Nearctic regions, occur in the Snow Mountains, and are as far not reported from anywhere else in New Guinea.

REMARKS ON THE TENDENCY TO WHITE AND BLACK COLOURING

With the above expression may be indicated the frequent occurrence in New Guinea of Heterocera with a white ground colour and with black markings of a similar pattern.

This feature of the fauna has been noticed before by MEYRICK. In his study on Papuan Microlepidoptera (1938) — in fact the only paper of some extent exclusively dedicated to that fauna — where he describes a series of new genera and species collected by Miss CHEESMAN in Papua and in the Cyclops Mountains, he observes:

"As an interesting special characteristic of this Papuan mountain fauna, I remark the strong and unusual tendency to white and black colouring

distinctly contrasted, and evidently in this case serving a protective purpose, being, as I think, imitative of bird excrement, and indicating the influence of a large insect-eating element in the fauna, such for instance as the birds of paradise. I have not overlooked the possible effect of such insects being easily noticeable to a human collector, but this would be equally the case in any fauna, and this particular fauna is in my opinion more remarkable for the prevalence of this colouring than any other in the world" (p. 503).

In the collection of the expedition this phenomenon is also present but occurs not as frequently as one would understand from the above citation; it is highly peculiar nevertheless.

A silvery or snow-white ground colour of the fore wing with a series of black blotches or a black streak along the posterior part of the costa, mostly combined with a series of narrow interconnected dentations along the endings of the terminal veins, these dentations being preceded by a more or less developed pale yellow suffusion, is the pattern characteristic for the extensive Tortricid genus *Chionothremma* (part I, page 51). Some 20 species are in possession of this pattern which may vary to some extent; the black terminal markings are often reduced, or there is a continuous marginal line, or only the apex of the fore wing bears a black dot. The closely allied monotypie *Diphtheropyga* is similarly coloured. This colouring in itself is very peculiar in the family of otherwise rather uniform ochreous, fuscous, or brownish leaf-rollers. Perhaps it may have developed in correlation with the diurnal life-habits of *Chionothremma*.

Still more striking is the occurrence of a very similar colouring and markings in certain species of other Tortricidae and also in quite distant families of the Microlepidoptera.

The closest likeness with the *Chionothremma* pattern can be found in certain species of the Tortricid genus *Chresmarcha*, already discussed on pages 163 and 164 of the first part of this paper. This genus belongs to another tribe of the Tortricidae (Cacoeciini) and is, in fact, remote from *Chionothremma* (tribe Zacoriscini). Two species are known which very closely imitate the primary white and black pattern: the same costal markings, terminal streaks, and even pale yellow suffusion before these are present; moreover, *Chresmarcha sybillina* possesses an additional transverse series of black blotches, absent in *C. delphica*. As said above in the systematic part, the colouring of these species of *Chresmarcha* is so deceiving that for a long time they have been erroneously classified.

The extraordinary imitating ability of *Chresmarcha* is still more clearly demonstrated by the third species (*Ch. enaemargyrea*) which is a close mimic of a quite different pattern of colouring, characteristic of certain genera of the Callidulidae (e.g. of many species of *Damias*), viz., white basal and deep wine-red apical half of the wing, these colours divided by a black streak. This species has been discussed already at some length on pages 163 and 164 of part I. The ability of *Chresmarcha* to imitate two

so different patterns strengthens us in our surmise that in this case we have to do with a phenomenon of mimicry, the patterns of *Chresmarcha* being a secondary imitation of the primary patterns of *Chionothremma*, and *Damias*, respectively.

Another, not less striking example of white and black colouring of a similar pattern represents *Meridarchis pseudomantis*, a single species out of 22 known to occur in the Papuan region, resembling the above mentioned Tortricidae — except for the narrower wings, characteristic of the entire family Carposinidae, to which this species belongs — and entirely different from all other *Meridarchis* species known.

Unfortunately the enormous collection of Macroheterocera of the Expedition is not studied yet and we are not able to provide the names of several other examples of white and black pattern from that group; we might mention two of them.

A small Arctiid of a quite deceiving Tortricoid facies is another mysterious double of *Chionothremma*. When arranging the genera and species of the collection preliminary to study, we promptly put the unique specimen of this species in the *Chionothremma* lot, till closer observation revealed its true nature.

A Lithosiid of quite similar white and black markings was somewhat less puzzling on account of its typical facies characteristic of that family.

Undoubtedly many other examples could be found in other collections of small Heterocera from New Guinea or will be discovered in future.

The problem which intrigues us but which we are unable to solve is: what nature must be ascribed to this phenomenon? We shall indicate three hypothetical possibilities.

1. The phenomenon is a case of mimicry, viz., imitation of colour and markings of common forms (viz., different species of *Chionothremma*) by single representatives of distant families and genera which in this way become entirely dissimilar to their congeners, in some connection with their biology.

2. The phenomenon may be due to a common influence or "creative agent" typical of New Guinea, through which white and black markings originate polyphyletically in different families and genera, independent of the biology of the insects in question. Apparently this is what MEYRICK thought.

3. The white and black pattern might be some consequence of the change of nocturnal life habits of small New Guinean Heterocera to diurnal, with which we intend to say that also in this case a common cause may be at play but that this cause would be of an entirely different nature than the agent alluded to in paragraph 2.

Our generation might be less disposed to teleological deductions than was that of MEYRICK. His elegant explanation of the phenomenon in question, cited above, will probably appear too simplistic for the present

taste. Extensive study of ecology might help us some time to solve this fascinating problem, one of so many in the Nature of this wonderful island, New Guinea.

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ADDENDA & CORRIGENDA

Besides the Addenda & Corrigenda to Part I of the present paper published on pages 165—166 of the volume 49, no. 3, of these *Verhandelingen*, the following errors were noticed.

Part I

Page 40, line 20 from top: instead of "*pyrrocanthara*" read "*pyrocanthara*".
,, 161: in the figures the numerals 203 and 208 are confounded.
,, 162, line 16 from top: instead of "*vindicata*" read "*acropeta*".

Part II

Page 13, line 5 from top : shift "(holotype)" to the next line, after "September 9, 1939".
,, 42, ,, 10 ,, bottom: instead of "spec. nov." read "gen. nov."
,, 69: in the figures the numerals 292 and 293 are confounded.
,, 73, line 8 from bottom: instead of "♀" read "♂".
,, 74, ,, 10 ,, ,, : ,, ,, "♂" ,, "♀".
,, 76, ,, 9 ,, ,, : ,, ,, "♂" ,, "♀".
,, 84, ,, 16 ,, ,, : ,, ,, "♀" ,, "♂".

,, 87, ,, 19 ,, ,, : ,, ,, "*Argyploce*" ,, "*Argyroploce*".
,, 88, ,, 9 ,, top : ,, ,, "subfamilies" ,, "tribes".
,, 89, ,, 15 ,, bottom: ,, ,, "♀" ,, "♂".
,, 95, ,, 9 ,, top : ,, ,, "Signa absent" ,, "Signa, two clusters of transparant bristles".
,, 153, ,, 19 ,, bottom: instead of "*Acrolita*" read "*Acroclita*".

Part III

Page 9, line 13 from bottom: instead of "*chrysentes*" read "*chrysoteuches*".
,, 95, ,, 13 ,, ,, : ,, ,, "female" ,, "male".

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